Health Services Research: Evidence-based practice

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ORAL PRESENTATIONS

O1 Making research and evaluation more relevant and useful in the real world: favoured solutions and uncomfortable realities
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There has been a recent upsurge of advocacy from trialists and policy ‘modernisers’ for far more use of RCTs as the basis for health and wider public policy. This is exemplified by the UK Cabinet Office’s report ‘Test, Learn, Adapt’ (2012). Mainstream policy makers are now being told that they should make policy by experimenting like scientists. Drawing on experience as an applied health services researcher and policy adviser in government, I will attempt to stimulate reflection on the following questions: how can we explain the timing of this phenomenon; how realistic and helpful is it; and where does it leave the contribution of evaluation in policy?

O3 Health system challenges in implementing universal health coverage: Asian perspectives and experiences
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In line with the global trend towards providing universal health coverage (UHC) as a primary tool in achieving sustainable development in the post-2015, post-MDG era, many low- and middle-income countries in the Asian region are in the midst of developing and implementing various schemes and strategies to achieve UHC. Given the diversity in health system structures, resources and capacities, the implementation of UHC in these countries poses major challenges to health service delivery. Indonesia, the fourth largest country in the world, rolled out its UHC plan, called JKN (National Health Assurance) in early 2014 and faces formidable logistic and administrative challenges with regards to access to medicines, human resources, financing, governance and scaling up health service delivery. Key implementation challenges include those associated with issues of equity, quality and sustainability. The Indonesian experience in rolling out UHC may also be compared to other countries in the region which have implemented UHC with varying degrees of success (e.g. Thailand, Vietnam, Taiwan, India, Malaysia, etc.). In the spirit of reverse innovation, it is also hoped that lessons learnt from UHC implementation in these countries will provide valuable learning lessons for each other, and for the success of UHC more broadly.

O4 Health systems: the challenge of adapting and responding to the accelerating health transition in low income countries
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In low-income countries, and particularly those in Africa, there are two important landscapes that have changed profoundly in recent years. One is the architecture of global health with its resulting increase in both the volume and complexity of health financing at country level. The second is the accelerating health transition in such countries where the past decade has witnessed declines in child mortality and increases in life expectancy at paces that have never been seen before in any period of history in any society. These health gains are not just a result of improving socio-economic development, but are consequent to important changes in health services and systems that have improved access to and coverage of several efficacious and cost effective essential health interventions funded in part by global health initiatives.

The dynamics of this health transition naturally result in very different and continually changing patterns of risk factors and attendant burdens of disease. Unfortunately the improvements in health systems in such countries have not yet included the necessary changes in, or even development of, appropriate means of monitoring the dynamics of the disease and risk factor patterns on a routine basis suitable for forward planning and policy making that will adequately steer development of the future health systems needed to respond to these dynamics. We remain too dependent on burden of disease modelling based on intelligent, but not sufficiently empirical real time data at country level on disease and risk factor dynamics. This is particularly so for cause of death data of acceptable coverage and quality in low-income countries where premature mortality still constitutes the largest share of disease burden DALYs. At the same time, the share of burden constituted by disability is rising rapidly from a much more varied set of causes and risks which are also changing due to demographic transition and other evolving phenomenon such as urbanization and globalization. These dynamics will require very different health systems and policies.

This presentation will discuss the need for linking three critical health information sources: 1) radical new approaches to routine longitudinal civil registration and vital statistics for disease burden monitoring, coupled with: 2) periodic national risk factor surveys that link to: 3) new approaches to monitoring district level health service coverage of services needed in response to the changing burdens and risks. Integrating across these data sources would provide the missing information strategy for evidence to feed more responsive health system planning and policy making needed for achieving universal health coverage.

O5 Contextual influences on the role of evidence in health policy development: insights from India and Nigeria
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In this paper we present our preliminary findings of a project that was initiated recently to explore the contextual influences on the role of evidence in health policy development in India and Nigeria. The project is part of our efforts to understand the conditions that lead to health systems change and develop strategies to support the development and implementation of effective health systems policies. The project employs qualitative methods to examine the role of evidence in health policy development in India and Nigeria where evidence has been used as a tool to influence policy change and sometimes as an obstacle to change.

In this presentation we will discuss the potential for evoking innovative strategies that may influence health policy development in India and Nigeria. This will involve examining the impact of contextual influences like political factors, ethnic factors, power relations and political culture on the role of evidence in health policy development.
Background The context is a complex and important influence on decision-making, affecting degree of responsiveness and people-centred health systems. Although theoretical frameworks to understand context are available, limited empirical research exists exploring contextual influences on evidence-informed health policymaking. This presentation compares contextual influences on the role of evidence in health policy development within two large countries within their continents: India and Nigeria.

Materials and methods In each country, the contextual influences on the development of three specific health policies were explored. The study was guided by a conceptual framework, developed from the literature. Context includes factors at three levels: macro (e.g. political and resource environment), meso (e.g. organisation’s roles and practices) and micro (e.g. individual values and preferences). Data was collected using 72 in-depth interviews with key policy actors and document reviews, and analysed using framework approach.

Results All policies were perceived as evidence-informed. Both formal (e.g. research) and informal (e.g. experiences) evidence was used in India; in Nigeria reliance was mostly on formal evidence. Key macro-level facilitators of evidence-informed decisions were international treaties driving reform agendas, leadership changes and political will. Key constraints included limited resources and opposition from powerful actors. At meso-level, civil society was particularly influential in India; whereas international agencies had greater role in policy decisions, including evidence use, in Nigeria. At micro-level, individuals had different understandings of what constitutes ‘robust’ evidence for policymaking, shaping their evidence preferences and decision-making practices.

Conclusions Understanding context is essential in ensuring responsiveness of policy decisions to the needs of key policy actors within people-centred systems, for example through recognising actors’ agendas and interests. Powerful civil society can catalyse greater recognition of citizens voice through communicating informal evidence, as we found in India; and influential donors can favour costly surveys, thus undermining use of evidence from government health information systems, as in Nigeria.

Best practice integrated primary/secondary health care governance - applying evidence to Australia’s health reform agenda

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Background There is an identified need for more robust and high-quality evidence to inform decisions about how to develop and deliver integrated primary/secondary health care. There is no single model of integrated care that is suited to all contexts, settings and circumstances. Researchers and policy-makers need to work together with practitioners to develop, evaluate and implement effective approaches. For the goals of health reform to be realized, primary health care and secondary care organisations must work together to achieve co-ordinated and integrated healthcare services. This study aimed to describe the elements of a health care system capable of supporting effective integrated primary/secondary care and how many of these governance elements are identifiable within Australia’s current health care reform environment.

Materials and methods This study presents the results of a systematic review in the development of a framework to achieve a ‘best practice’ governance model for integrated primary/secondary health care[1] and the application of the findings to key policy statements regarding integrated care delivery[2].

Results The systematic review identifies ten elements linked to successful primary/secondary health care integration projects - a population focus; shared clinical priorities; joint planning; using data as a quality improvement tool across the continuum; innovation; effective change management; an appropriately trained workforce; integrated information communication systems; incentives; and, patient engagement. The Australian reform environment has made steady progress in building integrated governance arrangements around some elements, whilst others remain ad-hoc or non-existent. Formal documents mostly relate to silos of sector activity and not the interface.

Conclusions To apply important evidence to health care policy, and maximise reform success, we must review current governance frameworks to address the gaps identified in this paper. Whilst it is challenging to bring historically-disparate partners together into formal agreements, they are essential to creating the scalable ‘business rules’ and sustainable environment required to achieve the new care models we seek.

References

Panel discussion: The challenges of translating evidence into policy and practice for maternal and newborn health in Ethiopia, Nigeria, and India

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Background Maternal and newborn deaths are unacceptably common in Ethiopia, North-Eastern Nigeria, and the state of Uttar Pradesh in India. Governments are working to strengthen health systems to improve maternal and newborn health but need access to accurate evidence on which to base decisions. This panel session will include both policy-makers and researchers and include examples of how they can work together to translate evidence into policy and practice. Three brief examples are given below. The discussion will draw from these and others, building on a framework from our recent qualitative study of what helps and hinders the scale-up of health innovations in within the health systems in these settings. The session will be interactive, with active participation of audience members.

Involving government in Ethiopia A close partnership between researchers and government can facilitate the use of evidence in decision-making. In Ethiopia, the Federal Ministry of Health lacks skilled health professionals who could help to synthesize evidence for policy-making. Moreover, at all levels of the health systems there is little culture or tradition of trusting or using evidence. For example, a variety of prevalence rates have been reported for mother to child transmission of HIV in Ethiopia, and it has been challenging for policy makers to decide which evidence to use to inform policies to strengthen health systems.

Involving government in Uttar Pradesh, India In Uttar Pradesh a similar barrier was overcome by researchers aligning with government health policies and systems and seeking the Mission Director’s involvement in research work. This led to local research evidence contributing to a directive to all health facilities promoting delayed bathing of the newborn, a practice which is proven to save lives. The Mission Director would like further evidence on how to address the barriers that are impeding acceleration of the decline in infant mortality rates.

Community acceptance and engagement with traditional and religious leaders In the context of weak health systems it can be particularly important to engage with community leaders. For example, in North-East Nigeria, the Society for Family Health work with traditional birth attendants and with volunteers from a local Muslim
women’s association to strengthen health systems as a way to improve life-saving childbirth care practices.

Conclusions This session will give the audience an awareness of the challenges facing both researchers and policy makers in promoting evidence-based practice and provide them with clear examples of how to translate evidence into health systems policies in three low-resource settings.

O9 Implementation science: understanding behaviour change and maintenance
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Interventions to improve implementation of evidence-based health care have achieved modest and variable success. Improving implementation depends on changing the behaviour of health professionals, managers, commissioners and others working within and with the health care system. Achieving and maintaining behaviour change within the ethical and practical constraints that typically operate remains a formidable challenge. Meeting it requires:
1. a systematic method for analyzing the target behaviours in their context as a starting point for designing an intervention,
2. selecting interventions that are most likely to be effective given this analysis,
3. specifying the intervention in sufficient detail in trial protocols and published reports to allow accurate replication and evidence synthesis, and
4. drawing on relevant theory to guide both the intervention design and evaluation.

This approach can generate evidence about the mechanisms of action of effective interventions and about why interventions vary across different types of behaviour and in different populations and settings. Such evidence is essential for designing more effective interventions. The most effective interventions for both initiating and maintaining behaviour change are those that act simultaneously at many different ‘levels’. A framework for analyzing target behaviours in context and considering the full range of intervention functions and policy categories that may be relevant to the intervention problem is the Behaviour Change Wheel [1,2]. This was derived from a systematic review of 19 published frameworks, none of which were found to contain all the intervention functions know to be relevant. The Behaviour Change Wheel provides a basis for identifying what it would take to achieve the desired behaviour change in terms of changes to Capability, Opportunity and Motivation (the COM-B system). It then links this to 9 intervention functions (Education, Persuasion, Incentivisation, Coercion, Training, Restriction, Environmental Restructuring, Modeling and Enablement) and 7 types of policy that could be used to implement these intervention functions (Mass-media/marketing, Legislation, Fiscal policy, Service provision, Guideline development, Regulation and Environmental/social planning).

Once the intervention strategy has been provisionally established, specific types of behaviour change technique can be selected, guided by evidence, theory and practicalities, to deliver the intervention.

References

O10 Expanding the PARiHS framework: thinking more broadly about context and facilitation
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Background The movement of innovations (i.e., new knowledge and tools) into healthcare settings is a significant challenge. The Promoting Action on Research Implementation in Health Services (PARiHS) framework proposes that the successful implementation of research into practice is a function of the interaction between three elements: 1) evidence; 2) context; and 3) facilitation. The objective of this paper is to present data from a study of innovation implementation in Nova Scotia, Canada, which extends and refines our understanding of PARiHS.
Materials and methods We used case study methodology to examine the multi-level factors influencing the implementation of synoptic reporting tools (SRTs) for mammography, endoscopy, and cancer surgery reporting. SRTs capture and present information about a medical or surgical procedure in a structured, checklist-like format and typically report only items critical for understanding the disease and subsequent impacts on patient care. Three theoretical perspectives, including PARiHS, were used as conceptual bases for the study. Data were collected through interviews with 55 key informants, document analysis, nonparticipant observation, and tool use/examination. Analysis included a thematic analysis of each case, which involved iterative processes linking case-specific data to the theoretical perspectives, and a cross-case analysis to compare and contrast the themes across cases.
Results PARiHS characterizes context using the sub-elements of culture, leadership, and evaluation. In this study, these specific sub-elements were influential in one case only. Additional features of context, however, had important influences on SRT implementation across the cases. These included: availability of specific organizational resources (e.g., time, expertise); structural, infrastructural, and regulatory components of the broader healthcare system; and the history and nature of both intra- and inter-organizational relationships. PARiHS defines facilitation primarily as a role that an individual (or “trained expert”) fills, and views facilitation on a continuum from low (task-focused; “doing for others”) to high (holistic; “enabling others”). In this study, rather than a role filled by a distinct individual, facilitation was demonstrated both as a set of activities deliberately employed by implementation teams to facilitate the implementation process and as a team or organizational capacity with many individuals (e.g., clinical champions, supportive middle managers/department heads) adopting facilitation roles. Finally, task-focused facilitation was critical to realizing implementation in all three cases.
Conclusions The findings suggest that PARiHS may present a relatively narrow view of context and facilitation. These findings provide a basis to build on new concepts and to expand our understanding of the elements of this framework.

O11 Understanding the dynamics of patient systems of implementation: a mixed methods study
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Background Compared to studies of professional implementation, patient systems of implementation remain under-investigated. Patient self-management for long term conditions has focused on the motivational and individual capacities in taking responsibility for managing well. Little attention has been focused on the collective resources work, and connections to others in patient health eco-systems as a potential means of effective self-management support and how these may vary in different cultural contexts. This aim of this paper is to explore the work, meaning and function attributed to relationships and ties within personal communities of illness management. We will illuminate the properties of different members of networks in order to identify the place of these within a broader context of patient systems of support for long-term conditions.
Materials and methods A review of network properties and analysis relevant to 5 European countries (Bulgaria, Norway, Netherlands, Spain
and Crete) and an in-depth case study using mixed methods survey with nested qualitative study was performed. The latter is a UK based study of a total of 300 people from deprived areas in the North West of England with chronic illnesses conducted in 2010 to 2011. A research tool with which participants identified 2,544 network members who contributed to illness management was used to describe activities associated with chronic illness and to identify how ties are perceived to be involved through contributions of social network members.

**Results**
The results provide an articulation of the types and properties of network involved in chronic illness work. Weaker ties compared to stronger are fit for different purposes and may be more durable and less liable to loss over time. Navigation, negotiation and collective efficacy are core properties of self-managing networks. Work undertaken and accepted by those with a long term condition requires the acceptable moral positioning of the self-managing ‘self’ and a sense of reciprocity.

**Conclusions**
A bridge between a sense of personal agency and control and the need for external support are inherent to patient systems of implementation. Access to weak tie resources need to be given more prominence in health services research and policy for long term conditions.

**O12**
Comparative case study of implementation of a coordinated rehabilitation care pathway between municipalities and hospitals for stroke patients in the Central Denmark region

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**Background**
In May 2012, the health authority (RHA) of the Central Denmark Region decided to transfer inpatient rehabilitation for stroke patients to community-based rehabilitation, as part of a major reform of regional stroke care. It was implemented top-down in three months. Patients were promised a more integrated care pathway with early discharge stroke teams bridging the two sectors. In this decentralized system, hospital care is the responsibility of the Regional health authority, and rehabilitation at home that of municipalities. The implementation of this reform therefore poses some challenges. The HAs reform required written cooperation agreements to be made by hospitals and municipalities. The implementation of these agreements and their aim of establishing a coordinated rehabilitation pathway was analysed, with a focus on (inter)organisational aspects, as the change was similar throughout the region.

**Materials and methods**
A multiple case study was designed, which compared cases of municipalities (n=7), and cases of stroke teams (n=5). Municipalities were selected based on two criteria from Greenhalgh’s conceptual model for determinants of implementation of innovations: size (proxy for slack resources and professionalization) and the existence of a boundary spanner in the implementation process. We hypothesized that these factors influence the implementation of the cooperation agreements. Data was gathered by means of semi-structured interviews (n=12), and document analysis.

**Results**
Both sectors accepted the change, as they believe the reform will benefit the patient. The study does not show any influence of size of the municipality, and having a boundary spanner in the process, on the implementation of coordination of stroke rehabilitation care between stroke teams and municipalities. Stroke teams experience opposition of municipalities to their existence, as municipalities state they do not need the RHA’s stroke teams, who are obliged to reimburse for their services. Stroke teams feel they coordinate care with municipalities. Municipalities do not experience this. Care is therefore not optimally coordinated around the patient. Ease-of-access to contact-persons is the main challenge for coordination at practice level.

**Conclusion**
The cooperation agreements might have been implemented at the administrative level, but at the practice level the coordination of care is lacking. Facilitating regular face-to-face contact between both sectors seems crucial for further implementation at practice level. In the future, financial consequences need to be communicated before implementation, and top-down implementation needs to be complemented with local implementation plans at lower levels of health care, with a clearer role for the boundary spanners.

**O13**
Expansion of the reducing use of sedatives (RedUSe) project to Australian nursing homes

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**Background**
Psychotropic medications work on the brain to affect mental function and behaviour. For over 20 years, concern has been raised over the overuse of psychotropic medication, particularly antipsychotics and benzodiazepines (‘sedatives’) in nursing homes. The Reducing Use of Sedatives (RedUSe) project was developed as a multi-strategic, interdisciplinary initiative aimed to promote the quality use of sedative medication in this setting. The key strategies of RedUSe, namely audit & feedback, education and medication review, were tested in a controlled 6-month trial of 25 homes in 2008/2009. The intervention significantly reduced the rates of antipsychotic and benzodiazepine use and doubled the number of sedative dosage reductions. In addition, the rate of new sedative prescribing in intervention homes was reduced to a quarter of the rate observed in control homes. In 2013, the Australian Government awarded substantial funding to expand RedUSe to 150 nursing homes across the country. This abstract describes how the RedUSe project was evaluated and enhanced before national expansion.

**Materials and methods**
A thorough assessment of the barriers and enablers associated with the initial RedUSe trial was performed in line with the Theoretical Domains Framework (TDF). A qualitative methodology comprising of two focus groups with nurses and pharmacists was selected to ascertain this information. Behavioural change techniques were subsequently identified to overcome the barriers and enhance the enablers, and tested in a pilot roll out phase comprising of 27 nursing homes across three states. Feasible outcome measures were also designated.

**Results**
The main barriers to the RedUSe trial were the belief that sedative medications improved resident quality of life, perceived roles of health practitioners in reviewing sedatives and poor GP engagement. The RedUSe project was enhanced by the development of a customized training program which challenged the belief that sedative use enhances resident quality of life. The training also clearly defined health practitioner roles in relation to medication review processes. The training was delivered via two facilitated interactive small group workshops which combined one didactic lecture, a case study and small group activities. An educational DVD was also produced to show at all training sessions. Academic detailing was delivered by trained details to inform and engage GPs.

**Conclusion**
The TDF proved an effective tool to identify the key barriers and enablers to the RedUSe project, facilitating the incorporation of some novel behavioural change techniques. The success of the expanded project will be reported after full implementation and evaluation is completed.

**O14**
Achieving the promise of universal coverage – the role for strategic purchasing

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Much debate about universal coverage has focused on expanding population coverage: who is covered by which scheme, how to cover those outside the formal sector, and whether the financing of universal coverage should be contributory or not. But population coverage is only one of the three dimensions of the universal coverage ‘cube’. Achieving the promise of universal coverage – that everyone should receive needed health services, at acceptable levels of quality, without incurring financial hardship – requires policy action on a broader front. Together with revenue generation and fund pooling, purchasing is one of the main health financing functions, yet it is the most neglected. Purchasing is the process by which funds are allocated to providers to obtain health services on behalf of the population. It involves identifying
the sets of interventions or services to which the population is entitled; choosing the providers from whom services will be purchased; deciding how these services should be purchased, including contractual arrangements and provider payment mechanisms; and determining how the population will access them. Purchasing can be passive – determining resource allocations, benefit packages, and provider arrangements by defaulting to historical patterns and arrangements; or strategic – actively engaging citizens, governments and providers in choosing arrangements which will optimize coverage, equity and efficiency. In this talk, I will review the conceptual foundations of strategic purchasing, explore country experiences with transitioning to more active purchasing arrangements, and outline current research on strategic purchasing being undertaken by the RESYST consortium.

O15 Using cost-effectiveness analysis to support decision making in resource poor settings: methods and practical challenges
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BMC Health Services Research 2014, 14(Suppl 2):O15

In the context of finite budgets, resource allocation in health care is a challenge to all health care systems. This is particularly pronounced in low income countries where opportunities to improve population health are even more limited by resource constraints. Cost-effectiveness analysis has been increasingly used to inform decisions about the choice of interventions and programmes in those settings. The application of the tools of CEA needs, however, to reflect a range of factors which can differ from those in more affluent jurisdictions. These include multiple sources of funding including those from donors, the existence of a number of constraints in addition to those relating to budgets, expectations of cost-effectiveness thresholds which have no empirical basis and marked uncertainty associated with locally-applicable evidence. There also exists a range of practical challenges in many countries, most notably the lack of capacity in skilled analysts. The Bill and Melinda Gates Foundation recently funded an initiative to standardize the methods of economic evaluation used in research projects that it funds. The presentation discusses the principles set out in that project, and considers the emerging agenda about methods research relating to economic evaluation in low income countries.

O16 Cost-effectiveness of public health interventions - a new methodological approach
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Background The goal of public health interventions is to move the distribution of life style risk factors in a healthier direction to decrease disability-causing disease and improve quality of life in the population. We recently presented a novel method to estimate the population-level impact of a public health intervention, using changes in the distribution curve of the outcome of interest. This method makes it possible to calculate the proportion of the target population that benefited from an intervention. The objective of this study is to demonstrate the potential of the new method to estimate not only the effect, but also the cost-effectiveness of public health interventions.

Method A population-based model called Risk factors, Health and Societal Costs (RHS) was developed to simulate changes in incidence and related societal costs of several chronic diseases, following assumed changes in four life style risk factors: obesity, tobacco smoking, physical inactivity, and risky consumption of alcohol. The RHS model is based on relative risks and simulates changes in disease incidence due the reduction of the prevalence of a risk factor that can be attributed to diverse interventions. The health gains are calculated as decreased incidence of the disease, increased health-related quality of life years (QALYs) and decreases in disability-adjusted life years (DALYs). Swedish national provider payment registers were used to retrieve disease-specific medical care costs, while local authority costs for care and sickness insurance expenses were estimated via a Swedish study. The changes in the distribution of physical inactivity as a result of a hypothetical mass-media campaign targeting the adult population in Uppsala County was used as the input parameter for the model.

Results The hypothetical intervention was estimated to improve the distribution of physical inactivity and the overlapping area between the distribution curves at baseline and follow-up was calculated as two percent, i.e. a 2% reduction in the prevalence of physical inactivity. This reduction among the Uppsala County population under five years is estimated to lead to a health gain of 14 QALYs and societal savings (health care, municipality care and sickness insurance) of 6 million SEK (500,000 GBP). The intervention is estimated as cost-effective if the intervention costs are less than 900,000 GBP with ICER<30,000 GBP/QALY.

Conclusions This study opens a new avenue to calculate the cost-effectiveness of public health interventions by using changes in the distribution curve of health-related outcomes combined with population-based modeling of risk reductions and costs.

O17 Determinants of health insurance enrolment in Sudan: evidence from Health Utilisation and Expenditure Household Survey 2009
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Background Sudan established a National Health Insurance Fund (NHIF) in 1995. NHIF, despite the name, is a social health insurance scheme that predominantly enrolls the formal sector workers, compulsorily, and the informal sector workers, voluntarily. The Government is targeting universal health coverage by 2031, by expanding the existing scheme. This paper aims to assess the insurance enrolment, and factors that determine such enrolment. Understanding these factors is important to ensure equity in acquiring healthcare and in identifying the barriers of its achievement.

Materials and methods Data used for this study were obtained from the Sudan Health Utilisation and Expenditure Household Survey conducted in 2009 (SHUEHS 2009). The survey was conducted at the nationwide level, covering 72,526 individuals of the 12,000 households. The Chi square test and bivariate were used to describe the characteristics of the insured and un-insured. Multivariate logistic regression was performed to identify factors explaining insurance enrolment.

Results Among a sample of 72,526 Sudanese, only 14,461 (19.9%) were insured. The enrolment showed regional and socio-economic disparities whereby, of the people living in the state capitals, 34% in Khartoum have insurance membership as compared to 14.3% in Darfur. Even after statistical adjustment, citizens living in Khartoum have almost twice the likelihood of insurance enrolment as those living in Darfur; OR 0.46 (95% CI 0.43-0.508). Moreover, rural-urban disparity was remarkable, 16.9% of the rural population are insured, compared to 25.3% of the urban dwellers. Urban have 26% higher enrolment likelihood compared to rural OR 1.26 (CI 95%1.23-1.318). The well-off quintile had a 42% higher chance of being enrolled than the poorest; OR 1.429 (95% CI 1.34-1.52). As expected, the enrolment was determined by occupation, as civil service workers had an 80% higher chance of being enrolled, compared to those unemployed. People with a university and higher education background were more likely to be insured, compared to those without formal education. People with diabetes and hypertension were more likely to be insured, than those without such conditions OR 1.25(95% CI 1.06-1.48), 1.31(95% CI 1.16-1.502), respectively.

Conclusions From the SHUEHS 2009 data, it is evident that there were regional and socioeconomic disparities for the NHIF enrolment. Policies and interventions to close the disparities are an urgent need.
O18 Does the implementation of a new payment system for hospital services induce changes in the quality of health care? Experience from Germany
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BMC Health Services Research 2014, 14(Suppl 2):O18

Background
In 2003 Germany started to replace its per-day hospital payment system by a prospective payment system based on diagnosis related groups (DRG). The primary objective of the program was to increase economic efficiency of hospital care. The introduction was accompanied by fears that quality of care could deteriorate when hospitals withhold necessary care in order to increase profits. Outpatient physicians expected an increase in their workload, which could probably lead to financial losses if it were not followed by an increase of their reimbursement. In order to detect possible adverse effects, the Statutory Health Insurance (SHI) was obligated by law to commission independent observational research on this question.

Materials and methods
There was access to a wide range of information like hospital claims, nationwide quality reporting information; claims from sickness funds. Various surveys of stakeholders were carried out. Observation period lead from 2004 to 2010. The basic approach was the over-time comparison of parameters that were interpreted as indicators for resource use, access to care or quality of care. Possible changes of these indicators over the observation period were reviewed qualitatively if they could have been induced by the change of the payment system.

Results
Length of stay (LOS) as an indicator for resource use decreased significantly over the OP from 7.8 to 6.8. However, the annual decrease of 2.2% did not significantly differ from the period 1995 to 2004. Average distance between patient’s home and the locations of hospitals (as indicator for access) increased slightly from 22.4 km (31.8 min) to 22.6 km (32.3 min). Post discharge mortality as an indicator for quality of care decreased by 7.8% (30 days after discharge) or 6.5% (90 and 365 days).

Conclusions
There was little evidence that access changed during the observation period. Resource use, as measured by LOS, was reduced but this trend had already started more than ten years before the program started. This did not support the hypothesis that the change of the payment system was the major cause. Quality as measured by mortality improved over the OP but this could not be attributed to the program. Overall there was no evidence that the program did affect patients negatively.

O19 Right time, right place? New evidence on effective health workforce distribution and retention
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There is growing recognition that the achievement of health systems objectives, including UHC, requires an effective health workforce. This includes dimensions of effectiveness related to geographic distribution that allows access to services, and effective retention of scarce and often expensive skills within a sustainable workforce. (The latter issue is the counterpoint to health worker migration and mobility, which will be covered in another session at the conference). There have been many policies aimed at improving health workforce distribution and retention, across all countries. Despite this growing policy interest, the evidence base remains fragmented. This presentation will capture a “state of the art” summary of what is known about effective policies on health workforce distribution and retention, including from recent work by WHO and OECD, as well as current work underway funded by the EU. It will also draw from the recent themed series in “Human Resources for Health”. The presentation will be a global overview (both high income and lower/middle income countries) presenting a synthesis of evidence, highlighting key policy interventions, and framed by existing typologies. Critical continuing gaps in the evidence base will also be highlighted.

O20 Recruitment and retention of health professionals in the European Union: lessons from country experiences
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BMC Health Services Research 2014, 14(Suppl 2):O20

Following up on J Buchan’s presentation (Right time right place? New evidence on effective health workforce distribution and retention), this presentation will focus on lessons derived from a literature review of studies on interventions to address recruitment and retention of health professionals in the European Union. Most, if not all, EU countries experience difficulties in recruiting in some professions (nursing, midwifery) and in some areas of health services (mental health, home care, emergency services), and in some geographical areas (remote, isolated, poor). Countries also have problems in retaining professionals tempted to migrate to other countries or to other sector of activities, or in attracting back those who have left, such as older nurses or physicians who have retired but who may still be interested in practicing. Few countries have developed policies to address these problems, but some have made systematic efforts in that direction. The presentation will describe some examples and discuss their effectiveness and the lessons which other countries can derive from them.

O21 Non-EU migrant doctors in Ireland: applying a typology of health worker migration
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Background
Research on health worker migration in the Irish context has previously sought to categorize migrant health workers by country or region of training (e.g. non-EU nurses or doctors), by migration channel or mechanism (e.g. actively recruited nurses). This paper applies a recently developed typology of health worker migration [1] to the experiences of non-EU migrant doctors in Ireland and considers the value of a typology of health worker migration to human resource management internationally.

Materials and methods
The paper draws on quantitative (N=37) and qualitative (N=337) data collected from non-EU migrant doctors in Ireland between 2011 and 2013.

Results
While non-EU migrant doctors can be categorized according to the typology [1], in the Irish context, a cross-cutting theme of frustration emerged from doctors in almost all categories. In addition to ‘career oriented migrants’ expressing frustration at poor career progression, were ‘returners’ who could not return home because of their limited career progression in Ireland and ‘livelihood migrants’ frustrated with weak career progression.

Conclusions
Employing a typology of health worker migration can facilitate a more comprehensive understanding of the migrant medical workforce, a necessary prerequisite for the development of useful policy tools [2]. However, our findings suggest that migrant health workers cannot be divorced from the health system context in which they work in the destination country, and perhaps this should be incorporated into the typology.

Acknowledgements
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References
**O22**
Financial incentives for human resources for health: What do we know? What do we do? The case of Sierra Leone
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BMC Health Services Research 2014, 14(Suppl 2):O22

**Background** Human resources for health (HRH) represents an essential component of well-functioning health systems. In recent years, there has been increased attention on the determinants of health workers (HWs) motivation, and in particular the role of financial incentives. Some countries have embarked on reforms to increase salaries and revise incentive packages, for example introducing rural allowance and/or performance-based financing. Sierra Leone provides an interesting case as, since 2009, a series of HRH reforms have been introduced, linked with the Free Healthcare Initiative.

**Materials and methods** Twenty-three key informant interviews at central level and 18 interviews at district level in Bo, Kenema and Moyamba were carried out, with staff from the Ministry of Health and Sanitation, development partners and local and international NGOs. Additionally, a survey of 266 HWs and in-depth interviews with 32 HWs were carried out in the same three districts. Making use of these data and policy analyses tools, the study looks in turn at (i) decision-making at central level, (ii) implementation of HRH policies in the districts, and (iii) impact on individual HWs incentives.

**Results** The case study illustrates the challenges in the process of transformation of evidence into national policies, and policies into effective practices at local level. In the case of Sierra Leone, the initial evidence-base upon which HRH reforms were introduced was relatively thin. However, these changes are generally recognized, especially by actors at central level, as ‘successful’ in addressing some of the HRH challenges as well as contributing to the Free Healthcare Initiative. At district level, other factors re-shaped the HRH strategies. In particular, the number, type and focus of external organizations present in the districts created different ‘political economy’ dynamics and contexts for the implementation of the reforms, which influenced their functioning and effects. Finally, the HRH measures eventually interacted with the existing district-specific incentive environment for HWs, affecting their performance in different ways.

**Conclusions** The analysis allows reflecting on the role and the ‘political space’ available for evidence-based policy-making in post-conflict, data-poor environments, and in particular in situations where there is tension between the role of evidence and the essentially political concerns of a brief, fast-moving ‘window of opportunity’ for reform. Moreover, moving to the local level, the study highlights how the local context and the presence of different actors and pre-existing incentives affect the actual functioning of the measures and influence their impact on HWs behaviour.

**O23**
Physical therapy counts: counting physical therapists worldwide
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BMC Health Services Research 2014, 14(Suppl 2):O23

**Background** It is evident that if something is not counted, and physical therapists (PTs) are not generally counted in international health statistics, no one knows how many there are, neither can they measure their contribution to population health or monitor their migration. The World Health Report [1] provides statistics on doctors and nurses primarily. Few data are reported on other health personnel. To address the burgeoning needs of populations living with non-communicable diseases, disability and older people every health professional will need to be involved. PTs with their expertise in maintaining and restoring people’s maximum movement and functional ability are well placed to take a key role. However with the paucity of information about the profession health, policy makers and planners are disadvantaged.

**Materials and methods** To fill the information gap, the World Confederation for Physical Therapy (WCPT) has developed an annual data collection which generates a country profile that includes information on the WCPT member organisations (MOs), the number of PTs, scope of practice, education and regulation. WCPT MOs were asked for their top priority information requirements. Together with the priorities of WCPT this information provided the base for a set of questions. A sample of national health workforce surveys was reviewed for relevant data items. Where available, international standard classifications were used. A data advisory group involved reviewed and pilot tested by representatives of the majority of the WCPT MOs. An online data capture tool was built and pilot tested. The first collection was made in 2012.

**Results** In 2012, 69 of 106 WCPT MOs provided data, a 65% response rate. The analysis enabled reporting on numbers of PTs who were members of WCPT MOs and an estimate of the number of PTs in the country of the responding MOs, which paired with population data from the World Bank provided an estimate of the PT to population ratio. The ratio varied between 0.002 PTs per 1000 population to 2.82 per 1000 population.

**Conclusions** The WCPT collection is the only global collection on PT workforce, education, regulation and practice. Whilst the collection is in its infancy and data quality and reporting requires improvement, it can provide information to governments, inter- and non-governmental agencies, the profession and the public. In time, longitudinal data may illustrate the changes in the country profiles as a response to health workforce migration, policies and planning.

**O24**
Assessing health systems in low-resource settings: some conceptual and methodological dilemmas
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BMC Health Services Research 2014, 14(Suppl 2):O24

Demands for health system assessments have increased in recent years, partly due to a gradual shift in funding patterns – from investment in vertical disease-focused programmes, to horizontal systems aiming to strengthen health systems as a whole – and due to a need to establish the impact of this investment. There is also a pressure to monitor progress related to Millennium Development Goals (MDG) or other internationally agreed developmental targets in order to inform ongoing political processes. Citizens, health services users and communities are increasingly empowered to hold the health systems to account. Yet there are huge challenges in assessing health systems in middle and low-income settings due to scarce or poor quality data, and a lack of capacity to collect, analyze and use data.

This presentation will explore some of the methodological and practical challenges faced in seeking to analyze health system performance, particularly in low-resources settings. A range of approaches for health system assessment that are commonly used will be discussed: from toolkits seeking to obtain standardized information on a range of indicators, to more exploratory rapid appraisals and theory-based evaluations. Conceptually, there are still debates about how to measure impact, how to undertake multi-method evaluations, and how to ensure that research findings inform practice. The talk will discuss the shift from a more traditional focus on performance assessment to a growing interest in interpretative health systems and policy research.

**O25**
The contribution of health systems research to HSR: time to know what we are talking about, and why it is important for evidence-based policy-making
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Within health services research (HSR), health systems research addresses the macro level of health care, i.e. the level of nations or...
regions, and the issues related to the organization and governance of the system, its model of financing, the ways to create physical and human resources, the provision of services, as well as its changes over time.

According to the WHO Tallinn Charter a health system is “… the ensemble of all public and private organizations, institutions and resources mandated to improve, maintain or restore health. Health systems encompass both personal and population services, as well as activities to influence the policies and actions of other sectors to address social, environmental and economic determinants of health”. This is only one of many definitions used around the world. Although there is strong global consensus on the need to strengthen health systems, there is no consensus on an established framework or a common definition that could help students, researchers, policy- and decision-makers in studying, comparing, reforming and analyzing health systems. This leads to misunderstandings and different interpretations about scope, transferability of experiences, functions and goals; failed interventions with undesired side effects; and flawed assessments and feedback.

This is problematic particularly also because health systems have become increasingly complex and are rapidly changing. Moreover, health systems have to address important macro level challenges, which may vary greatly around the globe. Whereas a low-income country may be faced with low health spending, limited capacity to raise revenue, a rapidly growing population and lack of access to care of good quality, a typical high-income country could be struggling with unsustainable growth in health spending, a rapidly ageing population and increasing OOP. However, both have a similar challenge: how to best utilize scarce resources. It is therefore of great value to recognise and adopt organizational and technical innovations that can help make health care more effective and efficient. This calls for more understanding and more empirical evidence on both intended and unintended consequences of different types of action on health systems.

Therefore, it is time for a common concept of the many elements of health systems, the dynamics between these elements, the different approaches chosen around the world – and last but not least, how to research and evaluate these in order to provide an evidence base for better policy-making. The backbone of the presentation will be a simplified triangular model of a health system, outlining the main players and their interactions, which is particularly suitable to systematically describe, compare and analyze the arrangements used in health systems.

**Program outcomes** The introduction of the opt-out model and screening by nurses has led to drastic increases in the number of women screened and treated for cervical cancer since 2012. In 2011, a total of 730 women were screened, while in 2012, 3,857 women were screened. In 2013, 2,580 women were screened. Overall, refusal of screening was less than 5%. The number of women observed with advanced cancerous lesions has drastically reduced since introduction of the opt-out screening. For example, in the first half of 2012, of the 96 women who were VIA positive, 56% had advanced lesions compared to 41% in the latter half of 2012, 32% in the first half of 2013, and 15% in the latter half of 2013.

**Lessons learnt** Integration of cervical cancer services in HIV care programs is possible, cost-effective and makes the screening service more accessible by a vulnerable population. Using an opt-out approach and same-day treatment increases access to cervical cancer screening and reduces the proportion of women presenting with advanced lesions. Trained nurses ably deliver cervical cancer services. See-and-treat approach reduces cases who fail to access treatment due to gaps in health care linkages.

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**O27** The real-world problem of care coordination: a longitudinal qualitative study with patients living with advanced progressive illness and their unpaid caregivers

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**BMC Health Services Research 2014, 14(Suppl 2)** O27

**Objectives** To develop a model of care coordination for patients living with advanced progressive illness and their unpaid caregivers, and to understand their perspective regarding care coordination.

**Design** A prospective longitudinal, multi-perspective qualitative study involving a case-study approach.

**Materials and methods** Serial in-depth interviews were conducted, transcribed verbatim and then analyzed through open and axial coding in order to construct categories for three cases (sites). This was followed by continued thematic analysis to identify underlying conceptual coherence across all cases in order to produce one coherent care coordination model.

**Participants** Fifty-six purposively sampled patients and 27 case-linked unpaid caregivers.

**Settings** Three cases from contrasting primary, secondary and tertiary settings within Britain.

**Results** Coordination is a deliberate cross-cutting action that involves high-quality, caring and well-informed staff, patients and unpaid caregivers who must work in partnership together across health and social care settings. For coordination to occur, it must be adequately resourced with efficient systems and services that communicate. Patients and unpaid caregivers contribute substantially to the coordination of their care, which is sometimes volunteered at a personal cost to them. Coordination is facilitated through flexible and patient-centered care, characterized by accurate and timely information communicated in a way that considers patients’ and caregivers’ needs, preferences, circumstances and abilities.

**Conclusions** In the midst of advanced progressive illness, coordination is a shared and complex intervention involving relational, structural and information components. Our study is one of the first to extensively examine patients’ and caregivers’ views about coordination, thus aiding conceptual fidelity. These findings can be used to help avoid oversimplifying a real-world problem, such as care coordination. Avoiding oversimplification can help with the development, evaluation and implementation of real-world coordination interventions for patients and their unpaid caregivers in the future.
O28
Effect of facilitation of local maternal-and-newborn stakeholder groups on neonatal mortality: a cluster randomised trial
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Background Facilitation of local women’s groups may reportedly reduce neonatal mortality. It is not known whether facilitation of groups composed by local healthcare staff and politicians can improve perinatal outcomes. We hypothesized that facilitation of local stakeholder groups would reduce neonatal mortality (primary outcome) and improve maternal, delivery and newborn care indicators (secondary outcomes) in Quang Ninh province, Vietnam. Trial registration: Current Controlled Trials ISRCTN44599712.

Material and methods In a cluster-randomised design, 44 communes were allocated to intervention and 46 to control. Laywomen facilitated monthly meetings during 3 years groups composed by healthcare staff and key persons in the communes. A problem-solving approach was employed. Births and neonatal deaths were monitored, and interviews were performed in households of neonatal deaths and of randomly selected surviving infants. A latent period before effect is expected in this type of intervention, but this timeframe was not pre-specified.

Results Neonatal mortality rate (NMR) from July 2008 to June 2011 was 16.5/1000 (195 deaths per 11818 live births) in the intervention communes and 18.4/1000 (194 per 10559 live births) in control communes (adjusted odds ratio 0.96 [95% CI 0.73-1.25]). There was a significant downward trend of NMR in intervention communes (p=0.003) but not in control communes (p=0.184). No significant difference in NMR was observed during the first two years (July 2008 to June 2010) while the third year (July 2010 to June 2011) had significantly lower NMR in the intervention arm; adjusted odds ratio 0.51 [95% CI 0.30-0.89]. Women in intervention communes more frequently attended antenatal care (adjusted odds ratio 2.27 [95% CI 1.07-4.8]).

Conclusions A randomised facilitation intervention with local stakeholder groups composed by primary care staff and local politicians working for three years with a perinatal problem-solving approach resulted in increased attendance to antenatal care and reduced neonatal mortality after a latent period.

O30
Research impact: defining it, measuring it, maximising it, questioning it
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Both in the UK and more widely, the higher education sector is under pressure from the government to demonstrate that it makes a difference. That aside, few of us want to be the kind of academic that sits in an ivory tower thinking clever thoughts while Rome burns below. As Karl Marx said, many academics only interpret the world, but the true purpose of scholarship is to change it. The ‘impact agenda’ thus contains two goals that may occasionally be in tension with one another. The first is to demonstrate impact as defined by a relatively narrow set of government-driven criteria and metrics (most notably in the UK, the ‘Impact’ section of the Research Excellence Framework). There is much emphasis in policy circles, for example, on the need for medical schools to build links with industry with a view to generating ‘health and wealth’ (that is, improving survival or quality of life while also saving money and boosting business for our national industries). The second goal, more in line with the vision of engaged scholarship articulated by Marx, is to align the research agenda with such things as community-campus partnerships and a commitment to social justice. Whilst it is easy to be cynical about the colonisation of academia by commercial interests, many universities now boast fruitful industry collaborations that have not only supported the development of new drugs, devices and technologies (and, in a few cases, led to measurable economic benefit for the university) but which have also accelerated the uptake and use of innovations for societal benefit. Nevertheless, much of the impact from biomedical research to date has been through a wide range of non-commercial partnerships with clinical provider organizations, national policymakers, councils, schools, faith groups, third-sector organizations and citizens. In short, ‘impact’ is much more than commercial spin-offs.

As the first ‘Dean for Research Impact’ appointed by a UK higher education institution, Professor Greenhalgh will summarise prevailing national and international debates about what research impact is; how it should be measured; how to balance the potentially conflicting agendas of ‘economic’ and ‘societal’ impact; and how to build capacity at all levels for delivering on both these agendas.
O32  Novel programs, international adoptions, or contextual adaptations? Meta-analytical results from German and Swedish intervention research

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BMC Health Services Research 2014, 14(Suppl 2):O32

Background One issue that remains to be solved in implementation research is adherence or adaptation dilemma [1,2]. In essence, this concerns to what degree and how evidence-based programs can be modified in accordance with constraints and possibilities in local context. This study compares effectiveness of program constructions (i.e., novel programs, adopted from other contexts with or without adaptations) in two meta-analytic data sets in two European countries.

Materials and methods Results are based on studies evaluating German child and youth preventative interventions (n=158), and Swedish psychological and social interventions (n=139). Interventions were categorized with three broad-band categories (novel programs, international adoption, and adaptation) and six sub-categories (innovation, conceptually new, adoption, cultural adaptation, pragmatic adaptation, and eclectic adaptation). All studies were coded by a trained coder followed by a second independent coding. The effect size of the outcomes of these program types were compared.

Results Novel programs, i.e. completely or conceptually new national programs, were the program type with the highest effect size in the German sample and among the highest in the Swedish sample. In both samples, international programs adopted without any adaptations were the least effective, even after controlling for crucial methodological aspects (design, sample size). Although adaptations proved to be effective (significantly different from zero), they were not as effective as the adapted or novel programs.

Conclusions The results favor novel and adapted programs and indicate that adoption of transported, international programs should not be done without considering adaptation. Adaptations justified explicitly for cultural reasons were more effective than international adopted programs without adaptations. This adds to the prior literature, which has shown contradictory results regarding the effects of cultural adaptations [3]. With respect to the high effect size for novel programs, it may be that a novel program encompasses the greatest possible fit to the context where it takes place. Novel programs may even involve tailoring the program to the needs of the specific setting, compared to internationally transported programs that are originally developed for another context.

References

O33  Governing health professional mobility in the European Union

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BMC Health Services Research 2014, 14(Suppl 2):O33

Health professional mobility in Europe has become a fast-moving target for policy-makers. It is evolving rapidly in direction and magnitude as a consequence of fundamental change caused by European Union (EU) enlargement and the financial and economic crisis. Health professional mobility changes the numbers of health professionals in countries and the skill-mix of the workforce, with consequences for health-system performance. Many of the so-called pull and push factors influencing mobility of individuals are in the remit of countries and organizations. In Europe, these pull and push factors are co-determined by EU policies on free mobility, the qualifications directive and many soft-law initiatives.

This presentation is reviewing the current mobility trends in Europe and provides clues on how to strengthen governance for human resources for health at European and country level. A particular reference is made to mobility monitoring, workforce intelligence, workforce policies/strategies, skills-initiatives and coordination mechanisms across sectors and levels.

O34  Building evidence on HRH programme implementation: assessment in 15 Latin American and Caribbean countries

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BMC Health Services Research 2014, 14(Suppl 2):O34

The health systems in the Americas region are characterized by fragmentation and segmentation that constitute an important barrier for expanding coverage, achieving integrated primary health care, and reducing the inefficiency and discontinuity of care. An assessment of the HRH programmes that have been implemented at country level was developed as part of the measurement of the 20 Human Resources for Health (HRH regional goals 2007-2015 adopted in 2007 the Pan-American Sanitary Conference (CSPAI)). The exercise was a combination of academic research and the development/application of an advocacy tool, involving policy makers and stakeholders to influence decision-making on the development, implementation or change the HRH programmes, while building evidence through a structured approach based on qualitative and quantitative information, and exchange and dissemination of best practices.

The presentation will cover the methodological challenges, as well as a summary of the main findings of the study that included 15 countries: El Salvador, Costa Rica, Guatemala, Honduras, Nicaragua, Panama, Dominican Republic and Belize in Central America, Ecuador, Colombia, Chile and Peru in the Andean region and Argentina, Paraguay and Uruguay in the Mercosur.

O36  Can up-skilling non-physician clinicians (NPCs) make a difference to practice and help towards reductions in maternal and neonatal mortality, in Malawi? The ETATMBA Project

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BMC Health Services Research 2014, 14(Suppl 2):O36

Background The ETATMBA project in northern and central Malawi is providing advanced clinical and leadership training to 50 non-physician clinicians (NPCs) who provide emergency obstetric and new-born care (EmONC). Here we report the process evaluation of the training. The aim of the project is to try to address the high levels of maternal and neonatal mortality.

Materials and methods We interviewed ETATMBA trainees, based in seven districts of northern and central Malawi, District health officers, cascades and two visiting UK Obstetricians. Trainee interviews were at three points in time (early, mid and late in the project). Topics explored included perceptions of the training, support, content, implementation in their workplace and challenges and successes.

Results 46/54 recruited trainees were still on the course. There was substantial variation in the rates of maternal and neonatal deaths between Districts at baseline. Attendance was high and all trainees spent time working alongside an obstetrician. In early interviews trainees recalled course content unprompted indicating the training had been received. Colleagues and District Medical/nursing officers reported cascading of knowledge and initial changes in practice indicating early implementation. Asking for actual cases, we found they had implemented new knowledge and skills where the mothers and babies lives were saved. Leadership training enabled them to
Evaluations can these ultimately contribute to welfare improving only by enriching the evidence base provided by health economic evaluations. I will briefly address the need for investigating the monetary value methodological development in measuring and valuing these. It is clear that current economic evaluations in the field of health care commonly do not include all relevant costs and benefits related to interventions. In many jurisdictions, a health care perspective is prescribed, which precludes the inclusion of relevant societal impacts, such as productivity costs, costs of informal care and costs in other sectors. Also in countries prescribing or allowing broader perspectives, the inclusion of broader costs and benefits related to health care interventions are often ignored. This partly is related to a lack of methodological development and consensus. In this presentation, I will highlight some of the main, often ignored, categories of societal costs and benefits, also touching on the methodological development in measuring and valuing these. I will also briefly address the need for investigating the monetary value of health and for inclusion of equity considerations in economic evaluations.

By enriching the evidence base provided by health economic evaluations these ultimately contribute to welfare improving decisions.

O39
Improving the efficiency of cost-effectiveness analysis to inform policy decisions in the real world: lessons from the Pharmacoeconomics Research Unit at Cancer Care Ontario
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BMC Health Services Research 2014, 14(Suppl 2):O39

There are important challenges in the application of cost-effectiveness analysis results in the real world that highlight the great divide between academic research and practical application. The difficulty is magnified in cancer because of the intense emotions it raises and their influence on decision making, impacting treatment funding decisions. Nevertheless, the potential for cost-effectiveness analysis to inform policy decisions is also great. In 2007, Cancer Care Ontario (CCO) established Canada’s first in-house Pharmacoeconomics Research Unit comprised of independent researchers. This presentation reviews the initial five years of the Pharmacoeconomics Research Unit at CCO. The purpose is to share lessons and point out directions for future research in cost-effectiveness analysis aimed at informing decision makers in the real world. To enrich the evidence base, we must continue to develop and apply new methods of analyzing data and displaying information. We must also face the reality that the purpose of our role may be to promote goals related to process rather than outcome, suggesting that getting the question of interest right may be more important for researchers than correctly solving the wrong problem. Creating the best estimate of cost-effectiveness is not knowledge for knowledge’s sake; this type of information is the foundation of accountability and sustainability. There is great potential for methods from health economics to provide useful information; it is possible for the results of our analysis to be understood and used by policy makers and other decision makers in the real world. Experiences at the Pharmacoeconomics Research Unit have illustrated this potential.

O40
Prioritisation of specialist health care services: going beyond the evidence
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BMC Health Services Research 2014, 14(Suppl 2):O40

Background
Common approaches taken for policy formulation in the face of resource constraints are to adopt utilitarian frameworks that seek maximisation of societal health benefits. However this does not always seem to generate socially and politically palatable solutions. Objectives In 2012-13 the Welsh Health Specialised Services Committee (WHSSC) developed a prioritization process for specialised health services to directly incorporates the Rule of Rescue and other psychological, emotional and social responses.

Materials and methods
A Prioritisation Panel representing a wide range of stakeholders was convened. A master list of services was achieved through matching against criteria (including high cost individual care, growth or implementation that exceeded an incremental cost of £50,000, uncertainty about evidence or ability to benefit) for evidence and prioritisation. Condition-Treatment pairs were created for the services falling under the remit of WHSSC, evidence reviews undertaken and evidence of eff ectiveness and cost effectiveness were collated to inform the decision making process. Evidence choice methods were used to rank order and apply a cut off point for commissioning or not. Score cards were developed to score for scientifi c rigour, inclusiveness, transparency, independence, challenge, review, support for implementation and timeliness. These features relate to the procedural justice requirement for ‘accountability for reasonableness’ described in the published literature.

Results
The common finding for the condition treatment pairs was lack of evidence to guide confident decision making. Through the process, the Panel was required to make judgements: scientifi c value judgements about interpreting the quality and significance of the evidence available and social value judgements. These latter were guided by four principles: respect for autonomy, non-maleficence, benefi cence and distributive justice. A prioritisation and commissioning list was created and specific services identifi ed for commissioning and decommissioning.

Conclusions
The desire for rapid evidence assessment and policy development conflicted with the need for policy to be based on robust evidence and subject to appropriate consultation. One outcome of this programme was identifi cation of the need to make appropriate arrangements for policy to be developed at the time it is needed without compromising its quality. Given the specialist nature of services being reviewed issues were encountered in enabling patient understanding of evidence. The policy implementation phase was also challenging. Reflecting on the experience of the process and outcomes has led to revisions for the 2014 Prioritisation Panel activities.
Characterization and analysis of guideline implementation tools (GiTools) reveals opportunities for improving health service planning, delivery and quality improvement

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BMC Health Services Research 2014, 14(Suppl 2):O8

Background Guidelines inform health care planning, delivery and quality improvement but are not consistently implemented [1-3]. Research shows that guidelines were more likely to be used when accompanied by guideline implementation tools (GiTools), but few guidelines offered GiTools [4-6]. Interviews with guideline developers and analysis of guideline instructional manuals revealed a need for information to support GiTool development [7-9]. First it is necessary to characterize GiTools. The purpose of this research was to generate a framework of desirable GiTool features, and use the framework to describe a sample of GiTools.

Materials and methods Items representing desirable GiTool features were first generated by a cross-sectional survey of the international guideline community [10,11]. Then items were confirmed and refined by a panel of guideline developers, implementers and researchers in a two-round Delphi survey [12-14]. The resulting GiTool framework was applied to describe a sample of GiTools of various types, accompanying guidelines identified in the National Guideline Clearinghouse on various clinical topics produced within five years by organizations having developed at least ten guidelines.

Results The cross-sectional survey was completed by 96 respondents from Australia, Canada, China, United Kingdom, United States, the Netherlands, and several other countries. Nine items were rated by most as desirable but difficult to achieve given limited resources and a perceived imperative to make GiTools accessible even if not rigorously developed or evaluated. Forty-one panelists from ten countries including Australia, Canada, Germany, New Zealand, Peru, Saudi Arabia, Spain, United Kingdom and the United States took part in a two-round Delphi survey. Twelve items achieved consensus as desirable GiTool features. A total of 13 GiTools were identified among a sample of 149 guidelines (8.7%). Most GiTools named target users (92.3%) and described development methods (84.6%). Fewer possessed other features considered desirable such as instructions for use (61.5%), sources of content (61.5%), target users were involved in development (53.8%), underlying evidence identified (23.1%), evaluation described (7.7%), or pilot-tested with target users (0.0%).

Conclusions Further work is needed to validate the framework with guideline users, and share the GiTool framework with guideline developers. It can serve as the basis for evaluating and adapting existing GiTools, or developing new GiTools. Inclusion of higher quality GiTools with more guidelines may support implementation and use of guidelines by target users, ultimately leading to improved care delivery and associated outcomes.

References

**POSTER PRESENTATIONS**

**P1**
**Effectiveness of interventions to improve, maintain or facilitate oral food and/or drink intake in people with dementia: systematic review**

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**Background** There are over 0.8 million people living with dementia in the UK. The needs of people with dementia are increasingly complex as the illness progresses. Eating and drinking difficulties are a major source of ill health and stress across the stages of dementia in multiple settings.

The evidence on what interventions support people with dementia in continuing to eat and drink well needs to be updated, and the full set of interventions assessed. To ensure people with dementia and their carers have access to the best current evidence, which address the questions that are important to them, we consulted with stakeholder groups and formulated specific questions to be addressed by a systematic review. The evidence will be summarised in light of these questions.

**Materials and methods** The review protocol (www.crd.york.ac.uk/PROSPERO/DisplayPDF.php?ID=CRD42014007611) was shared with members of two patient and public involvement groups. The members were asked to comment on the protocol and suggest questions they would like the review to address. Compiled questions were added to the protocol to inform our search strategies.

We have conducted a comprehensive search of 13 databases for studies that assess the effectiveness of interventions to improve, maintain or facilitate oral food and drink intake, nutrition and/or hydration status, in people with dementia. Screening studies for eligibility, assessing risk of bias and extracting relevant data is underway and duplicated independently. Studies included in the review will be used to address the specific questions asked.

**Results** The stakeholders’ questions, that were not originally specifically addressed by the review protocol included issues around personalisation of interventions, the relationship with the carer, meaningful activity around food as well as specific issues around oral hygiene and swallowing difficulties. These questions are guiding the way that the review is conducted and will help focus the way that information from the review is provided to people with dementia and their carers.

**Discussion** This systematic review aims to review the effectiveness of interventions to improve, maintain or facilitate oral food and/or drink intake in people with dementia and address specific questions raised by stakeholders. By soliciting and then addressing questions within the systematic review that are important to our stakeholders we will improve the usability of our findings - the questions and their summary answers will be used to inform best practice.

**P2**
**Polypharmacy as a risk factor for hospital admission among elderly using emergency transport**

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**Background** Aging is an urgent global-scale issue and Japan is the frontrunner of aging. Emergency department (ED) admission of the oldest-old challenges emergency physicians and polypharmacy has been considered as one of its possible risk factors. The aim of this study was to analyze hospital admission among patients aged 85 years and older using ambulance transport regarding its relationship with polypharmacy.

**Materials and methods** A retrospective observational cohort study was conducted on consecutive patients (age ≥85 years old) with ED transports by ambulance between April to December in 2013, in a community teaching hospital in Japan. Patients with out-of-hospital cardiopulmonary arrest were excluded. Data were collected from computerized records about demographics, chief complaints, vital signs and level of consciousness at arrival, final diagnoses at discharge, and polypharmacy (defined ≥ 5 baseline medications) at outpatient clinics. Primary outcome was requirement for admission to the hospital. We also analyzed symptomatic drug adverse events.

**Results** Of the 3084 adults (≥18 years old) who were transported to our hospital by ambulances, 381 (13%) were aged ≥85 years old; 233 (61%) were women. 261/381 (69%) patients were admitted to the hospital. The mean number of their baseline medication was 6.8±3.9, 250/347 (72%) patients had polypharmacy. 27 (7%) patients had apparent symptomatic drug adverse events. Although apparent drug adverse events were not related to polypharmacy (p=0.392), patients with polypharmacy were more likely to be admitted to the hospital after adjusted for age, gender and vital signs at arrival using multiple logistic regression (odds ratio 2.1, 95% CI, 1.0–4.3, p=0.040). Heart and respiratory rates in vital signs at arrival were also associated with admission (P<0.001 and P=0.001, respectively).

**Conclusions** About 70% of the oldest-old patients using ambulance transport were admitted to the hospital. They had been prescribed a number of baseline medications. These medications caused apparent symptomatic drug adverse events, which was one of the most preventable reasons for admission. Polypharmacy could be one of the major risks for admission at ED in addition to unstable vital signs.

**P3**
**The trend of geriatric health research and the challenge of health system translation in Nigeria**

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**Background** Nigeria is expected to be the nation with the 11th highest population of older persons by 2015. This demographic transition will have implications for the medical care services. Currently, there is no geriatric social health insurance policy nor comprehensive geriatric healthcare services in the country. The minimal health system response may be due to lack of comprehensive knowledge of geriatric disease burden, pattern and healthcare needs. This paper aims to describe the trend and pattern of geriatric health research publications, and to review the current geriatric health policies in Nigeria.

**Materials and methods** A systematic review of published reports in PubMed was performed for the period of January 1990 to April 2014. The review of current geriatric health policies was conducted by document analyses of an annotated national bibliography on digitized health policies and guidelines.

**Results** A total of 38 policies and guidelines of the Federal Ministry of Health were reviewed and none of them targeted geriatric health. The systematic review identified 52 eligible studies out of 3519 studies. Twenty-five studies (48%) were community-based studies, twenty (38%) were conducted in hospital settings, while only one was carried out in an old people’s home and four were narrative literature reviews. Twelve studies (23%) were done in a rural area, 24 (46%) in an urban area and 11 (21%) report findings from both locations.

One study reported the health of the elderly and economic policies (1), elderly destitution (1), health implication of ageing (1), attitude to ageing (2), care for the elderly (3), quality of life and life satisfaction (3), nutrition (2) and physical activity (1). The morbidity pattern reported from the reviewed articles were as follows: medical morbidities (8), geriatric emergencies and admissions (2), dental problems (5), surgical morbidities (1), nosocomial infection (1), mental health morbidities (6), orthopaedic (2), otorhinolaryngology (3), urology (1) and visual morbidities (5).
Conclusions The findings underscore a geriatric health research and policy needs. It is recommended that resources be invested into collaborative research for the development and implementation of evidence based geriatric health policies.

P4 Maternal and child health interventions in Nigeria: a systematic review of published studies from 1990 to date

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BMC Health Services Research 2014, 14(Suppl 2):P4

Background Poor maternal and child health indicators have been reported in Nigeria since the 1990s. Many health system interventions have been instituted to reverse the trend and ensure that Nigeria is on track to achieve the Millennium Development Goals. This systematic review aims to describe the Maternal, Newborn and Child Health (MNCH) interventions that have been implemented in Nigeria since the 1990s.

Methods PubMed was searched from inception in 1990 up to January 2014 to identify reports of interventions targeting MNCH in Nigeria. Selection criteria included studies reporting interventions targeted at any of the following: pregnant women, newborns, children under five years, and childbearing age, under-five children, and health system issues. The outcomes of the different interventions included maternal health promotion (family planning, antenatal care, and prevention of mother-to-child transmission (PMTCT)), prevention of obstetric complications (safe management of ante and postpartum, and clinical audit of quality of obstetrics services), child health promotion (immunization, and infant feeding), prevention of childhood diseases (home management of malaria, insecticide treated nets (ITN)), and health system strengthening (policy for free MNCH services, electronic health information management system).

Discussion/Conclusions Heterogeneous approaches for the same target groups have been conducted. Most of the interventions lacked a control group thereby compromising the measurement of their effectiveness. The true impact of these strategies cannot be assessed unless by indirect methods, precluding the generalizability of the results. We hope that the results of this systematic review will provide more insights on areas of improvement in order to achieve better health for all Nigerians particularly for women and children.

P5 Transitions in abortion care in Ghana: revealing the potential of globalizing provider attitudes

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BMC Health Services Research 2014, 14(Suppl 2):P5

Background Unsafe abortion remains a public health problem in Ghana with colossal costs to families, communities and health services, evident in persistently high maternal mortality ratios. It is well known that access to and utilization of family planning, safe and legal abortion services and quality post abortion care could help curtail the ramifications of unsafe abortions. Ghana has a liberal abortion law, yet safe, legal abortion services are not easily accessible in public health facilities. The extent to which attitudes of providers are influenced by global discourse on abortion and the role of safe abortion in reducing maternal mortality rates, is not well known.

Materials and methods Using a purposive sample of 36 providers, in-depth interviews were carried out to explore the knowledge, interpretation and application by providers of the abortion law and the MOH/GHS policy, and their attitudes and experiences vis-à-vis provision of abortion services.

Results Many obstetricians knew the law but pharmacists and midwives were less knowledgeable of the law. The law was perceived as liberal but full of gaps and inconsistencies making its interpretation and application a problem. Obstetricians’ exposure to international treaties and conventions (including WHO statements, ICPD, ICPD + 5, Beijing Conferences) influenced their attitudes towards provision of safe abortion services while midwives’ attitudes were largely affected by their religious inclinations and (local) social context. Lack of resources such as trained personnel who are willing to provide abortion services, unavailability of manual vacuum aspiration kits and the lack of support and cooperation of hospital administrations also influenced provider actions and hampered abortion care. Exposure of health personnel to trends in abortion care in other countries through conferences and treaties did appear to influence how they thought about and acted concerning abortion care. Values clarification workshops for health providers (continuing education at which global evidence was considered) were also cited as helping to influence their (positive) attitudes towards women with unplanned pregnancies who need abortion care.

Conclusions Breaking the culture of silence surrounding abortion through discussions on the topic, mobilizing health providers who are not conscientious objectors and promoting discourse from international Conferences through continuing education and in public media all hold potential for sustaining comprehensive abortion care in Ghana.

P6 Does health insurance improve utilisation of healthcare services, for chronic illnesses in Sudan?

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BMC Health Services Research 2014, 14(Suppl 2):P6

Background Chronic illnesses require a long standing or lifelong adaptation. Healthcare plays a crucial role in this adaptation. Seeking health care for such conditions, in many developing countries, imposes a devastating social and economic burden to individuals and their families, in form of catastrophic health expenditures or impoverishment. Millions, of chronically ill persons, avoid health care use as a result. Worldwide there are promising evidences that health insurance promotes access to health care, and provides financial security. The Sudan has established an insurance scheme in 1995. The aim of this paper is to assess the impact of health insurance on access to health care, particularly for chronically ill population. Understanding of determinants of access for this group is important to improve their use of health care.

Methods Data used for this study were obtained from the Sudan Health Utilisation and Expenditure Household Survey conducted in 2009 (SHU/UEHS 2009). The survey was conducted at nationwide covering 72,526 individuals of the 12,000 households. Chi square test and bivariate were used to describe the characteristics of people having chronic conditions. Multivariate logistic regression was performed to identify factors explaining health care utilisation for chronically ill population.

Results Of a sample of 72,526 Sudanese, 4608(6.4%) had reported having chronic diseases, of them only 2351(51%) had sought health care. Even with this low rate, disparity in use can be found with regard to socioeconomic background, insurance status, and types of the chronic diseases. While 59.4% of chronically ill insured had sought care only 48% of noninsured did so. After adjusting for all socioeconomic factors and health needs, having insurance was associated with 38% increase the likelihood of seeking care, compared to non-insured OR 1.38 (95% 1.194–1.603).
Conclusion From the SHUEHS 2009 data, there is an evidence of regional and socioeconomic disparities in utilisation of health care services. Fortunately, insurance membership was found to improve access to the health care services. This is important point, if the government decided to promote utilisation of health care for the chronically ill population, and manage the inequity in use of services.

P7 How is the positive deviance approach applied within healthcare organizations? A systematic review of methods used

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Background The positive deviance approach assumes that solutions to problems faced by a community already exist. Despite experiencing similar constraints as others, ‘positive deviants’ succeed through their deviant behaviour. Originating within international public health, positive deviance has increasingly been applied to healthcare and a four stage process has been proposed to do this. Positive deviants are firstly identified using routinely collected data then their success strategies are explored. These strategies are then tested in a more representative sample and disseminated to the community. The quality of current healthcare applications however varies and different study designs and methods are used at each stage of the process. This review aims to investigate the extent to which these stages are adopted in healthcare research.

Materials and methods The review explored definitions of positive deviance, study designs and methods used, quality of research, level of analyses conducted and organizations or employees involvement within the research. The search strategy was applied across seven electronic databases and reference list/citation searches were conducted for included articles. Studies were included if they used positive deviance within a healthcare organization, reported primary research and were peer reviewed. Data extraction focused on the methods used at each of the four stages of positive deviance. Quality assessment was conducted using the QATSDD and all extraction was second reviewed for accuracy and completeness. Data synthesis was conducted using the UK Economic and Social Research Council guidance on narrative synthesis.

Results The search strategy identified 564 articles excluding duplicates. 37 articles, representing 26 individual projects met the full inclusion criteria. Positive deviance is most commonly applied to reduce healthcare associated infections and research has most frequently been conducted within North America. Research focuses on stages 1 and 2; identifying positive deviants and the strategies used to succeed. Very little research tests or disseminates these strategies. Disparate approaches, study designs and methods are used within research with little involvement from the organisation and staff.

Conclusions This is the first systematic review of positive deviance applications within healthcare organisations. It highlights the approaches flexibility, relevance to a range of quality improvement issues and use in identifying practical and sustainable solutions. Recommendations relate to the study designs and methods used, practicalities of conducting the approach within clinical contexts and the increased role organisations and employees could have in positive deviance research.

P9 The Context Assessment for Community Health tool - investigating why what works where in low- and middle-income settings

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Background The gap between what is known and what is practiced results in patients not benefitting from advances in healthcare and unnecessary costs for clients and health systems. The Promoting Action on Research Implementation in Health Services (PARIHS) framework posits (1) strong evidence, (2) context in terms of coping with change, and (3) facilitation as elements influencing successful implementation of new knowledge [1]. A strong context is considered key to warrant an environment receptive to change. Tools for systematic mapping of aspects of context influencing implementation have been developed for, and are being used in, high-income settings whereas there are no tools available for this purpose for low- and middle-income countries (LMICs).

Materials and methods The development of the Context Assessment for Community Health (COACH) tool departed from the PARIHS framework and work was undertaken in Bangladesh, Vietnam, Uganda, South Africa and Nicaragua in six phases; (1) defining dimensions and draft tool development, (2) quantitative and qualitative content validity amongst in-country experts, (3) content validity amongst international experts, (4) response process, (5) translation and (6) evaluation of psychometric properties. The tool has been validated for use amongst physicians, nurse/midwives and community health workers in these five settings.

Results This study indicates that dimensions of context identified to influence implementation in high-income healthcare settings are also relevant in LMICs. Having said this, there are additional aspects of context of relevance in LMICs. The final version of the tool includes 49 items measuring the following eight aspects of context: leadership, work culture, monitoring services for action, sources of information, resources, community engagement, commitment to work and informal payment.

Conclusions Application of the COACH tool will allow for systematic characterization of local healthcare context prior to or as part of the evaluation of implementing new interventions and allow for deeper insights into the black-box of implementation in LMICs.

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References


P9 Healthcare integration strategy implementation based on distance education and communication for health professionals in São Paulo City, Brazil: study protocol

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The Brazilian healthcare system aims for universal access for the whole population, equity to prioritize health actions, and integrity in all assistance levels. The purpose of this research project is to...
promote and to evaluate intervention based on capacitation in clinical management focused on diseases that are part of the Brazilian list of ambulatory care sensitive conditions (ACSC). It will be delivered throughout a distance education course to health professionals who are based in a public hospitals and to 85 Family Health Strategy teams spread out over 18 Primary care Units (PCU), covering around 300,000 people, in the southern zone of São Paulo City. It will evaluate the use of communication tools, as a free internet-based platform and telemedicine, that will be made available to the health providers that can afford continuity and integrity of care to the patients who are followed by both health services. Also, health professionals learning and application of knowledge in the clinical practice as well as patient outcomes, will be evaluated.

Quasi-experimental cohort design with historical controls study of adult patients hospitalized by ACSC and will be followed up 1 year after the hospital discharge. Data collection will be performed on hospital and PCU patient’s health records and will be applied the Primary Care Attention Tool, the World Health Organization Quality of Life, and Sociodemographic questionnaires, to patients and health professionals, for social and environmental characterization, treatment plan adherence, disease monitoring and access to the health services. Data analysis will evaluate as outcomes the hospital readmissions of the followed patients, the use of the communication tools by the health providers, demographic, social and environmental variables, and hospitalization rates, patient’s time of hospitalization and mortality rates related to the patients.

This project is funded by the Brazilian Ministry of Health and São Paulo State Research Agency.

**P10**

**Theoretical conceptual model as useful framework for research implementation in a Brazilian public hospital**

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Translational medical science fulfills an urgent need worldwide to make knowledge from health research available as soon as possible, minimizing the time between findings being made and their use in health delivery services. To plan and organize implementation of evidence-based knowledge acquisition and innovation, that could be incorporated in health services, theoretical frameworks have been developed to help its dissemination in a systematic and practical way. The Promoting Action on Research Implementation in Health Services (PARiHS) and Consolidated Framework for Implementation Research (CFIR) are conceptual models that provide variables and constructs that could be feasible for health services. The aim of this communication is to analyse PARiHS and CFIR, as guidance frameworks to research service implementation in a Brazilian public hospital.

The Hospital Dr Moysés Deutsch (HMMD) is a public facility that is managed by a public-private partnership, located in the southern zone of São Paulo City, as a reference hospital to 600,000 inhabitants. The implementation method used the PARiHS conceptual model of facilitation as a function of evidence and context, and the CFIR constructs of intervention characteristics, internal and external climate as well as organization culture. Goals, actions and indicator were developed to sensitize and stimulate the other HMMD sectors to adopt and incorporate research in their current activities, to identify researchers and evaluate the research competency among the HMMD teams. Thus, the research sector was structured to provide scientific consulting to the stakeholders’ scientific demands, and to promote and improve capacitacions like scientific writing workshops; to foster, promote and implement research projects based on partnerships with other research institutes, and to submit research projects in a competitive way to get research grants from public or private agencies; to disseminate and stimulate the research culture through local scientific events and publications.

The main indicators, after two years, show an increase in the number of implemented research projects (2 to 7); the number of HMMD health professionals involved in research activities (27 to 38) and attended scientific writing workshops (4 to 17); the maintenance of papers published or submitted per year (7).

These theoretical conceptual models have an important role on guiding and monitoring HMMD research department objectives, goals, actions and indicators, improving the understanding of this research implementation process in a prospective way.
since the 1930s. This government promised the most radical proposals for health system reform in the history of the Irish state, including universal access to healthcare based on need not income, free GP care for all by 2015 and the introduction of Universal Health Insurance after 2016. All these reforms were to be achieved amidst the most severe cuts to the health budget. While the public health budget quadrupled between 1997 and 2007, since 2007 the Health Service Executive (HSE) – the public health system has been cut by 17.5% and there are 12,000 fewer staff in the health system.

The authors collected indicators of performance of the Irish health system during the economic crisis from 2005 to 2014, showing pre and post crisis trends. The authors assess how well the system has coped with a downsizing of resources by an analysis of a range of performance indicators:

(i) healthcare funding and resources,
(ii) the coverage of the population with subsidised care,
(iii) the efficiency of resource use,
(iv) access to timely care.

These indicators are used at an OECD level to assess health system performance. Ireland has a poor track record in data collection, especially in the health system, and that which exists comes from a wide range of sources including the Department of Finance Revised Estimates, HSE Annual Reports, HSE National Service Plans and waiting list data collected by the HSE. The data have been gathered in one place for the first time.

These show a system that managed ‘to do more with less’ from 2008 to 2012. They also demonstrate a system that was ‘doing more with less’ by transferring the cost of care onto people and by significant resource cuts. From 2013, the indicators show a system that has no choice but ‘to do less with less’. They indicate diminishing returns from crude cuts, evident in declining hospital cases, increased wait-times, as well as cuts to home care hours and increasing costs of agency staffing. The results suggest a limited window of benefit from austerity beyond which cuts and rationing prevail without structural change.

P13

The effects of obesity and mobility disability in access to breast and cervical cancer screening in France: results from the National Health and Disability Survey

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Objectives

We aimed to disentangle the effects of obesity and mobility limitation on cervical and breast cancer screening among community dwelling women.

Methods

The data source was the French national Health and Disability Survey - Household Section, 2008. The Body Mass Index (BMI) was used to categorize obesity status. We constructed a continuous score of mobility limitations to assess the severity of disability (Cronbach's alpha = 0.84). Logistic regressions were performed to examine the association between obesity, mobility limitations and the use of Pap test (n = 8133) and the use of mammography (n = 7,561). Adjusted odds ratios were calculated (AOR).

Interaction terms between obesity and the disability score were included in models testing for effect modifications.

Results

Compared with non-obese women, the odds of having a Pap test in the past 3 years was 24% lower in obese women (AOR = 0.76; 95% CI: 0.65 to 0.89), the odds of having a mammogram in the past 2 years was 23% lower (AOR = 0.77; 95% CI: 0.66 to 0.91). Each time the disability score was 5 points higher, the odds of having a Pap test increased by 20% (AOR = 0.96; 95% CI: 0.94 to 0.98), the odds of having a mammogram decreases by 25% (AOR = 0.75; 95% CI: 0.73 to 0.79). There was no significant interaction between obesity and disability score.

Conclusion

Obesity and mobility limitation are independently associated with a lower likelihood of cervical and breast cancer screening. Protective outreach and follow-up are necessary to reduce inequalities and thus to reduce health disparities in these vulnerable and high-risk populations of obese women with disabilities.

P15

Enhancing hospital competitiveness: use of the electronic dashboard for managing the power of executing information systems

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Background

With the increasing demands of a variety of IT support for health care, managing the execution of the information systems (IS) department is increasingly critical but complex. Therefore, the Chi Mei Medical Center has proposed a one-year-project to develop an electronic dashboard (e-Dashboard) for the execution of IS with visual interfaces to present the status of IS services requested by users.

Materials and methods

A prototype method was adopted. Prior to the programming phase, a series of performance indicators were defined according to an expert panel. Based on “The 4 Disciplines of Execution” [1] as well as an internal speech “To Enhance Competitiveness” [2] by the superintendent of the medical center, Dr. Chio, at the 2013 Executive Consensus Seminar, this e-Dashboard focuses on four core principles.

1. Focus on the wildly important
2. Act on the lead measures
3. Keep a compelling scoreboard
4. Create a cadence of accountability

Results and conclusions

The benefits after introducing the e-Dashboard can be illustrated through three aspects.

1. Establish IS performance metrics.

In the past, there has been no effective way to measure IS staff’s performance. In this project, we conducted a series of quantitative indicators and presented them in a timely and transparent manner on large wall mounted monitors. This provided direct information for communication between users and IS staff.

2. Enhance IS executive power and competitiveness.

E-Dashboards can monitor IS performance on daily, weekly, or even monthly timelines and provide drill-down features to browse and analyze the performance status by layers of departments, teams and individuals. As a result, we can effectively control the service performance and then enhance IS execution.

3. Help managers make decisions.

E-Dashboards can be used to monitor real-time events during operational processes, and to help IS managers obtain instant messages and make effective decisions.

E-Dashboards can help IS managers keep track of instant messages, thereby making the most immediate and correct decisions, and thus enhancing the power of IS execution. Currently, Chi Mei Medical Center is beginning to develop other types of e-dashboards for other purposes such as for monitoring the emergency department's waiting list. This will help to maximize the effectiveness of the e-Dashboard – not only for the IS department but for the hospital as a whole.

References


P16

Modification of compensation mechanisms of outpatient services

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Compensation in exchange for medical services is characterized as a unity of economic relations between medical institutions and funding side in exchange for the expenses of compensation during the provision of medical services. Compensation refers to compensation for expenses of the organization, not the individual departments and nor the medical worker. [1-3].
In 1999 in the primary healthcare system there was a transition from the previous funding method toward the financing mechanism according to the number of served population (per capita), that is funding from the state budget of the RA was implemented compared with the average per capita amounts. Due to the implementation of this mechanism it became possible to realise cost containment, reduce administrative spending, increase efficiency in the use of financial resources. Despite the above mentioned advantages, financing mechanisms according to per capita are characterized by some drawbacks, particularly:

- absence of physician motivating mechanism,
- uncertainty of the number of people registered in the district, present and submitted patients number,
- absence of the system contributing to the increasing demand by population,
- groundless referrals to subspecialty consultations in order to increase their employment,
- groundless referrals to medical institutions,
- system inferiority of the payment of the immediate provider of medical service,
- unofficial payments etc.

Because of these deficiencies the funding mechanism does not provide people with the necessary primary medical aid and service with suitable volume and quality, as a result of which there was a decrease in population attendance in medical institutions; the number of preventative measures also decreased, the population had to apply for medical aid only in extreme cases, in addition to apply to its expensive component, that is to hospitals.

For that very reason, in order to make the medical care expenses more controllable and manageable it was necessary to choose such a compensating mechanism by the implementation of which it would be possible to realize the following actions:

- implementation of medical care and services volumes in the frame of state budget of the RA,
- cost containment and supervision increase in medical institutions,
- preliminary planning of medical aid volumes,
- more efficient and targeted use of provided financial resources.

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P17

Personalized evidence of treatment effects for the practice of personalized medicine: a new model of care

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Personalized medicine, based on individuals’ genomes or proteomes challenges conventional clinical diagnostic categories and increases the number of “rare conditions” which may benefit from personalized treatments. Current drug evaluation, based on diagnostic categories ignores the large range of phenotypic expressions; the considerable variation in drug responses by individuals creates legitimate concerns regarding the efficacy and safety of many drugs for patients. Furthermore, when diseases affect individuals’ daily activities, standardized population-based assessment tools lack the capacity to reliably reflect a drug’s effects on outcomes most relevant to the patient’s own everyday needs and perception of wellness – the individual patient’s Personal Outcomes of Specific Interest (“POSI”). The uniqueness of individual’s POSI challenges the classic phase 3 trials to assess drug effects; conversely, the validity of evaluating drug effects with standard tools – surrogate markers of a true experience – is questionable. It is therefore essential to develop a new approach to carefully assess the impact of these drugs on the outcomes that are most important for patients while also assessing the bio-physiological effectiveness.

In 2010, we developed a personalized medicine strategy using a systematic consultative model of decision-making that incorporates individual patient/families’ insights about the impact of drugs on everyday activities and their preferred outcomes into the treatment evaluation and decision making process; we also developed with UBC School of Engineering the “Wellness Tracker” (WT) software that enables patients/families to track signs and symptoms on a daily basis, and share this information with caregivers (http://wellnesstracker.org), to guide therapeutics and decisions. WT can be used in n-of-1 clinical trials that are the best design for assessing drug effectiveness and side effects at individual and population levels.

The personal evaluation model (PEM) includes 4 steps to: (i) identify POSI with the patient/family in consultation with the physician; (ii) determine which drug effects would make the treatment useful; (iii) assess changes in POSI over time and scale this change using the goal attainment scaling (GAS) technique; (iv) share this information to the discussion with care providers to make the most appropriate decisions regarding drug usage and adherence considering utility scorings from the different parties.

This approach also provides important data for policy makers to evaluate reimbursement for expensive treatments. Finally, it can also be used to study off-label applications of previously approved drugs, herbal products, and dietary supplements; most of which are never evaluated rigorously. Presentation illustrates use of Personalized Evaluation Model in practice.

P18

The Oregon health system transformation: preliminary report of Coordinated Care Organizations in the first year implementation

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Background

Because of the US Affordable Care Act, 16% of Oregonians without health insurance will be able to obtain coverage through Coordinated Care Organizations (CCO). Materials and methods

CCO is a network of all types of health care providers who have agreed to work together in their local communities to serve people who receive health care coverage under the Oregon Health Plan. CCOs are accountable for health outcomes of the population they serve and have one budget that grows at a fixed rate (2%) for mental, physical and ultimately dental care. CCOs are focused on prevention and helping people manage chronic conditions, like diabetes to reduce unnecessary emergency room visit. By using quality, access and financial metrics together, the state can determine whether CCOs are effectively and adequately improving care.

Results

Emergency department visits by people served by CCOs have decreased 13% since 2011 baseline data. CCOs reduced hospital admissions for congestive heart failure by 32%, chronic obstructive pulmonary disease by 36% and adult asthma by 18%. Spending for primary care is up by more than 18%. Enrollment in patient-centered primary care homes also increased by 51% since 2012. The percentage of adult patients with diabetes who received at least one A1c blood sugar test in 2013 (74.9%) is down when compared with 2011 baseline (78.5%).

Conclusion

While some progress has been observed additional improvement in preventive care is expected.
involves the testing of complex interventions in different contexts or settings and requires an understanding of the impact of variation in participants, settings, intervention staff, and delivery conditions on study outcomes. The Medical Research Council guidelines for complex interventions provide investigators with guidance on the design and evaluation of interventions however, there is a lack of clarity regarding a direction for broader applicability testing; that is when and how replication should be considered.

Materials and methods We employed an integrated knowledge translation approach to conduct a concept analysis of replication research. Our team included a range of stakeholders (scientists, policy makers, research funding agency representatives and journal editors) involved in knowledge translation research. We conducted a systematic search of the literature across a range of scientific fields. Data describing different typologies of replication studies were extracted from papers, organized into multiple tables and compared across research traditions. At the synthesis phase of the review process, information found was combined and organized into a comprehensive framework. An approach similar to the constant comparative method was used to reduce, compare and combine data. The developed framework was then tested against the judgment of our team and was refined based on their comments.

Results We included 123 reports from across 6 different fields of study. Health and Social Science fields accounted for the largest numbers of included studies. Thirty-two different replication types were found in the literature. After data comparison, these types were organized into three categories based on purposes for conducting replication studies: to improve internal validity, external validity and construct validity. The framework describes eight replication types across the three purpose categories, with details outlining the specific aim and procedures for each type. We also retrieved data regarding the conditions, barriers and facilitators for conducting replication of research. This data was transformed into a set of recommendations for planning, conducting and evaluating replication studies.

Conclusion Replication is critical to develop the field of knowledge translation. A number of barriers hinder the conduct of replication studies. Our framework for the replication of knowledge translation research will assist researchers, academics, journal editors and funders to better understand the value and specific procedures of replication studies.

P20
Discharge instructions for parents in the context of pediatric emergency care: a narrative review
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BMC Health Services Research 2014, 14(Suppl 2):P20

Background Emergency departments are the leading providers of unscheduled care with over 85% of patients discharged home after their visit. Discharge communication with parents has been shown to vary across setting and illness presentation. Emergency practice environments are chaotic by nature and characterized by multiple interruptions. The primary goal of this synthesis project was to understand how and why discharge instructions worked under different conditions.

Materials and methods We conducted a narrative review of the policy and empirical literature to examine how and why discharge instructions worked under different conditions in the context of pediatric emergency care. Three stakeholder groups (practitioners, administrators and parents) were actively engaged with the research team during each step of the synthesis process. We collected data on the types of interventions and implementation strategies used in the included studies. We developed a preliminary synthesis using textual descriptions, tabulation and content analysis. We used a taxonomy of behaviour change techniques as a guiding framework to link behaviour change techniques described in the interventions with the relevant theory.

Results Email survey of 15 Canadian tertiary care centres failed to identify any existing policies guiding discharge communication in pediatric emergency departments. Following duplicate screening of 4690 abstracts from EMBASE, PubMed and CINAHL and hand searching of 5 major journals, we included 68 studies in the final synthesis. Less than half of included studies (n=30) involved experimental or quasi experimental designs. The majority of interventions were educational strategies targeting parents of children with different illness presentations. Most studies were also carried out in larger urban paediatric emergency departments. The authors identified a range of factors influencing implementation of the interventions including duration of the educational intervention, timing of delivery in the emergency department visit, the mode of delivery, and illness acuity of the child.

Conclusions Improving discharge communication for parents and children in an emergency practice setting presents a significant opportunity for increasing adherence to treatment plans and improving health outcomes for children. Knowledge users agree there is an urgent need to address this important policy and practice gap. To date the majority of strategies to improve discharge communication have been educational strategies targeting parents. However, findings from this review have identified a number of barriers that would suggest the need for investigating other types of intervention strategies.

P21
Practice preferences of pre-graduation allied health professionals: do graduates want to work where the workforce is needed?
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BMC Health Services Research 2014, 14(Suppl 2):P21

Background Occupational therapists form a significant proportion of the allied health workforce in developed countries. Demand for occupational therapists in Australia is growing due to the rapidly expanding population of people living with chronic and complex conditions. Recent Australian government initiatives conducted through Health Workforce Australia have been implemented to enhance training opportunities to increase workforce supply. But increasing graduate numbers is only one part of a solution to matching workforce supply and demand. Another part that has had considerable attention in medicine but little in allied health, is where they want to work - their practice preferences.

Methods A survey design was used to investigate views of final year occupational therapy students. Invitations were sent to Australian universities offering occupational therapy and convenience sampling was used to recruit anonymous volunteers who completed the investigator developed survey. Survey items included: demographic data, clinical practice preference (based on [1]) and factors participants felt influenced their highest preference (based on items from [2,3]). Descriptive statistics were used to aggregate and report data.

Results Participants (n=259) came from every state and territory in Australia and were overwhelmingly female (91.5%; n= 236; mean age 23 years) and all were in their final year of study before graduation. Means for all clinical practice areas ranged between 51.4 and 51.8 so medians have been used to identify trends. The highest clinical practice preference was aged care (median 66,SD30.3), followed by physical rehabilitation (median 59,SD36), mental health and paediatrics (both median 54, SD16.9 and SD19.3 respectively), occupational health (median 53, SD29.8), developmental disability (median 48, SD25.8) and least preferred general physical practice (median 44, SD37). More than half the participants thought the following factors influenced their practice preference ‘a lot’ or ‘enormously’: fieldwork experience(76.6%), fit with skills/ability(74.5%), challenge(69.4%), opportunity for greater creativity(65.8%), opportunity to perform therapy procedures(61.2%), professional development opportunities (56.4%) and intellectual content (52.3%).

Conclusion This study confirms previous research showing fieldwork experience is most influential in practice preference. High preference for aged care suggests good workforce demand-supply fit.

References
P22
Techniques to tell the real story: narrative inquiry in health services research
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Background
Fifteen years ago in Health Services Research (1999) qualitative research methods were argued to be useful and valid. Since that time qualitative research methods have gained increasing legitimacy however qualitative research papers remain underrepresented in high impact health journals [1]. The rigour of qualitative methods and their relevance in policy evaluation and development is, however, a continuing debate. On the one hand, qualitative inquiry methods bring the complexity of health service policy impacts to the fore; they provide policy makers with perspectives from the people services aim to support. On the other hand, the variability of qualitative approaches can lead to questions around validity and utility of findings. Narrative inquiry is one qualitative approach which, like others, has no prescribed method. Yet it is a method gaining increasing popularity in social science, clinical and health services research. This paper makes the methodological case for narrative inquiry in health services research and recommends techniques.

Narrative inquiry in health service research
Narrative inquiry is based on the premise that by listening to the stories of others we can make sense of their experience and understand how they construct meaning within a broader social context. Data is usually collected through interview. Data analysis includes narrative analysis and/or paradigmatic analysis of narratives [2]. Narrative analysis produces an individual story for each participant while paradigmatic analysis of narratives identifies a typology of story types.

Cerebral palsy health service research: a case study
We used narrative inquiry to explore health service experiences of 18 young adults with cerebral palsy. It is important to select a scholarly framework to guide but not constrain the inquiry. We selected Polkinghorne [2]. We collected data through multiple in-depth, unstructured interviews using face-to-face, assistive technology for augmented communication, phone and email. Data was transcribed. Narrative and paradigmatic analysis was used. The narrative approach revealed 18 individual health service stories and four over-arching narratives that captured the depth of unique individual experience at the same time as a breadth of common themes.

The techniques and processes used in this study can be replicated and transparently reported thus demonstrating the rigour required for narrative inquiry in health services research.

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P23
Workforce characteristics of post-conflict disability services in Benghazi, Libya
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Background
In 2011 Libya experienced significant unrest. There were many thousands of casualties and increased acquired disabilities. Many rely on local care services. Health services planning in a post-conflict environment requires accurate workforce information on capacity can be identified and service provision matched. Very little information was available about disability services or the workforce pre-or-post conflict, and what was available was out of date. This study examined workforce characteristics in the largest disability service in Benghazi, the Rehabilitation Handicap Centre.

Methods
A case study was conducted on site in October 2012. Approval was given by the Research Ethics Committee University of Wollongong, Centre Manager and Libyan Ministry of Health. An investigator developed survey was administered to volunteer employees whose data was anonymously coded.

Results
It is a single site service, with well-appointed buildings, prosthetic service equipment is extensive and functioning; other rehabilitation equipment is often out-of-order due to maintenance problems. Apart from ancillary staff of 232 employees work across administrative and clinical departments. Outpatient services for community and war-injured exist with waiting lists. Male inpatient services were available; bed-block was a serious problem with scant community-based-rehabilitation and few discharge options.

71 employees responded (n=40 male; 31 female; mean age 39.4 years, SD 8.2, 26 to 66). All Arabic speaking Libyans. Most staff had high-school (17%), secondary schoo l(28%), diploma (14%) or university (19%) education. Participants were therapists (n=20 of 30) administration officers(17 of 133), nurses (n=14 of 67), prosthetics technicians (n=9 of 14), biomedical technicians (n=6 of 11) and administrative managers (n=2 of 11). There were 2 consultant doctors. Fourteen held supervisory roles in different departments and most were men. About half worked in teams (n=30). Disability workers were paid less than hospital workers; attrition was a problem and pay schedules were disrupted from time to time. Employees worked 6-hours-a-day 5-days-a-week business-hours, except shift-work nurses. Travel to work was by car (66%) or walking (11%) with no public transport and damaged roads. Personal safety en-route was not a problem. Work-roles were: clinical service delivery (46.5%), followed by administration (21.1%) and prosthetics services (11.3%); 37% perceived services had changed post-conflict. The most common diagnoses after the conflict were stroke, complex physical disability and amputation. 32% provided training to patients or families, 13% to the community. Professional development was uncommon: 80% none in the past 12 months, others had a computer course; 72% had none since 2004; 75% reported no employee induction.

Conclusion
The centre workforce was stable, ageing and needing professional development. Service demand outstripped workforce capacity and infrastructure.

P24
Finding measures of clinical placements quality for pre-service health services training: challenges of definition and search strategy construction
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Background
Health services provide clinical training to medical, allied health and nursing staff. Ensuring the quality and quantity of this training is critical to workforce supply. Health Workforce Australia (HWA) has funded initiatives to enhance clinical training quality and the availability of clinical training placements. There is a growing recognition that quality of clinical placements must be increased. While there are many strategies to improve quality and many strategies claim to enhance quality, there is an absence of agreed measures to evaluate placement quality. A standardised, comprehensive and widely applicable measure of clinical education placement quality is required. This study describes the challenges involved in constructing a systematic review search strategy.

Materials and methods
An HWA document audit was conducted to examine the use of the term “quality”, identify attributes and locate any standardised measure of placement quality recommended. As none was found, a search strategy for a systematic review of literature was developed.
Results Quality clinical placements have not yet been conceptually or operationally defined by HWA. ‘clinical placements’ were defined by HWA in 2012 using the qualifying term of ‘pre-service’ or ‘pre-registration’. Their definition of quality clinical placements links student learning outcomes with high quality clinical learning environments. While characteristics of quality clinical learning environments, the student experience and learning outcomes have been proposed in literature, to date a standard definition has not been adopted. Precise search terms are required to locate published information relating to measuring quality clinical placements and instruments that might measure them. The absence of a standard definition thus creates a challenge. Unsurprisingly previous literature reviews on quality clinical placements had not used standardized search terms. Careful inspection of thesauri and search engines revealed a complexity and inconsistency of terminology surrounding clinical placement quality that was both unexpected and confusing. There was no term that matched ‘quality clinical placements’ and a vast array of terms had to be inspected, definitions interrogated and selections made. MeSH terms provide the greatest precision and scope, however they were not used in CINAHL or Google Scholar. Equivalent terms had to be identified. Search engines that were most productive were: PubMed, CINAHL and Google Scholar. There was overlap in many CINAHL and PubMed sources; Google Scholar revealed highly relevant sources such as commissioned reports and position papers that were not detected through PubMed or CINAHL searches. No standardised measure for evaluation of clinical placement quality was identified.

P26 Evidence informed health policy making: role of evidence in six health policies in India and Nigeria

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Introduction The importance of evidence-informed health policy making is widely recognised and frameworks exist to help understand the roles of different types of evidence[1,2]. However, there is limited application of these frameworks in empirical studies, particularly to inform learning and improve evidence-informed health policy development in LMICs. The objective of this presentation is to discuss results of a comparative analysis of the role of evidence in health policy development in six case studies from India and Nigeria, and share the resultant lessons.

Methods A conceptual framework linking policy and evidence processes drew on literature and guided the study. Qualitative data was collected using documents review and in-depth interviews and analysed using framework approach. We analysed the role of evidence in three types of policies in each country: internationally-prominent (e.g. AIDS control); internationally-neglected (e.g. oral health) and health systems policy (e.g. human resources).

Results Overall, policy development in all six policies was perceived to be evidence-informed. Both formal (e.g. research articles and HMS) and informal (e.g. stakeholder experiences) evidence were used in India. In Nigeria, reliance was mostly on formal evidence. Although a range of types and sources of evidence (e.g. national surveys, policy document) influenced different stages of policy process across case studies, evidence was largely used to establish the need for a policy as ‘evidence for policy’ and less for analysing policy options as ‘evidence on policy’. The role of evidence was influenced by factors within policy actors and policy making organisations and their context. Such factors included the perceived characteristics of robust evidence, its availability and accessibility, national and international political commitments; and different policy and evidence processes.

Conclusion The role of evidence in health policy development is interpreted as a relationship between policy and evidence processes, and informed by the influence of policy actors and their national and international context. The potential impact of this research includes recommendations for strengthening evidence-informed and context-specific policymaking. Our framework and findings improve our understanding of the role of evidence in health policy development and how to promote evidence-informed policy policy processes in different contexts.

References
P28
Improving management of patients with life-threatening emergency conditions in the emergency department of Sant'Andrea Hospital Rome, Italy
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Background The Hospital practices the Clinical Governance approach to ensure high standards of care and to continuously improve the quality of services. One purpose is to produce and to apply Organizational and Clinical Procedures (OCP), based on the best available evidence and the local context and organization, to manage critical patients in the Emergency Department (ED). Annually, about 50,000 patients arrived to the ED, where 18% have urgent and 2% life-threatening conditions. These last cases receive a multidisciplinary treatment (emergency physicians, anaesthesiologists) and after stabilization of main symptoms are delivered to the Intensive Care Unit (ICU). The emergency physician is in the permanent staff of the ED while the anaesthesiologist of the ICU is on call.

Until 2011, the anaesthesiologist was called by the emergency physician after his first intervention on the critical patient's ED needed resuscitation treatment with consequent delay of patient's delivery to the ICU.

In 2012, to reduce the time of intervention of the anaesthesiologist in the ED, a group was constituted by health personnel of the ED and ICU, health direction, Quality Unit. The group detected the causes of the delay through the study of available data extracted by the ED electronic data sheet and of the organization of the ED. The group decided to provide an OCP to manage patients with life-threatening emergency conditions in the ED (OCP-ED). Materials and methods To reduce obstacles to the implementation and acceptance of organizational change, the emergency physicians and anaesthesiologists were educated to use OCP-ED applying the concepts and tools of experiential learning. Periodically, health direction organized meetings with personnel to disseminate the results of OCP-ED’s implementation and to discuss the possible problems and to find the solutions to overcome them. The effects of OCP-ED are measured through the indicators and the periodical audit on cases. The process indicators are calculated on data extracted by health database of the ED.

Results Participants positively evaluated both the educational programme and the organizational and clinical indications of the OCP-ED. It has facilitated the communication between the emergency physician and the anaesthesiologist and reduced the delay to ICU delivery.

Conclusion The application of the OCP-ED helped standardize behaviours in an environment characterized by great professional heterogeneity. All health personnel are learning to use the clinical and non-clinical data, periodically reviewing the cases to monitor their activities and then to improve the quality of care both in terms of speed response and appropriate therapy uses.

P29
Impacts beyond primary outcomes: a mixed-methods study exploring multiple perspectives of a health system intervention in Eastern Uganda
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Background Interventions aiming to improve health systems should engage people on the front lines of health care delivery. Evaluations of these interventions should focus on the multiple change processes and outcomes resulting from their implementation into dynamic social systems. The PRIME intervention was designed to build health workers’ (HWs) skills by supporting and motivating them emotionally in their challenging work environments with the goal of improving treatment and attracting patients to health centres (HC) in Eastern Uganda. We conducted a cluster-randomised trial (CRT) to evaluate the impact of PRIME on health outcomes in the community and a parallel mixed-methods study to examine the effect of PRIME from the perspective of HWs and patients enrolled in the trial.

Methods Twenty HCs were enrolled in the CRT; 10 were randomized to the intervention with the primary endpoint of health outcomes measured in community-level clusters over two years. Mixed-methods included 306 HW communication assessments investigating the change in HW interpersonal skills with patients, 10 in-depth interviews exploring HWs interpretations and enactment of the intervention, 13 focus group discussions with community members discussing perceptions of change relating to PRIME, and 1200 patient exit interviews at HCs over three time points assessing patients’ satisfaction with their treatment seeking experience.

Results Post PRIME implementation, mixed-methods evaluations revealed that interpersonal communication was rated 10% higher (p<0.008) by patients consulting with HWs in intervention HCs. HWs revealed that improvement of technical skills and use of new technologies had a positive effect by increasing feelings of professionalism coupled with patients’ positive feedback; however, HWs also felt unsupported in other aspects including increased workload, and lack of recognition, payment and supervision leading to demotivation. Patients reported increased satisfaction with certain aspects of the treatment seeking experience, but also highlighted other areas of HCs needing improvement.

Conclusion CRTs of health system interventions focus on assessing the intended impact the intervention using a singular primary endpoint evaluation. Our results reveal that despite a lack of significant effect in the CRT primary health outcomes, the mixed-methods study demonstrated impacts including benefits, consequences, motivations, and interpretations from the perspective of the people who are central to the health system dynamic PRIME was intending to change. We will discuss what can and cannot be achieved and brought to light through a CRT model of evaluation of people-centred health system interventions and what this means for informing the design and implementation of future health system interventions.

P30
Implementation of a regional stroke reform in Denmark: a tale of cost reduction and quality improvement
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Background In May 2012, the Central Denmark Region implemented a reform in stroke care, which included concentration of acute stroke treatment from 5 to 2 specialized hospitals, short stay, and a shift from inpatient rehabilitation to community-based rehabilitation, and establishment of 5 stroke teams. The plan was announced three months before implementation. Patients were promised a more integrated care pathway with newly established stroke teams supporting the discharge and rehabilitation in the home as a priority.

In this reform, only hospital care is within the Region’s area of control, as rehabilitation at home is the responsibility of municipalities in this decentralized health care system. The top-down implementation of this reform poses therefore some challenges.

Methods A policy-analysis was carried out based on Buse et al’s health policy triangle and Winter’s model for public policy implementation. Insight in the policy formulation, design and implementation process of the stroke reform was obtained from semi-structured interviews with representatives of the health authority, hospitals, municipalities and general practitioners (n=8). Additionally, an analysis of relevant policy and practice documents was carried out. Data were analysed using thematic analysis.
Results Many of the stakeholders have a big interest, but have had little or no influence on the design of the reform. Hospitals were involved in formulating and designing the reform in contrast to municipalities. Patients were not involved at all. In accordance with a top-down approach, the Region delegated the implementation of the changes to a committee of stakeholders. No sanctions or incentives were included in the plan to enhance implementation at the street level. All stakeholders however agree with the rationale for the reform, that the quality of (acute) care for patients would improve, which gives the reform legitimacy. Municipalities however were critical towards the idea of rolling out one model of early discharge teams over the region. Besides, the financial consequences of this model were not made clear to them.

Conclusions The reform has a hospital-dominated perspective, as this is the area of control of the Region. The conditions for successful implementation are however not fulfilled in the primary sector, where rehabilitation care has to be provided. The implementation of reforms of this scale, with complex chains of implementing actions and indirect control, asks for policy implementation models to be combined with those for implementation of change in health care, with more emphasis on tailored plans for different target groups at the practice level in health care.

P31
Implementation of changes in perinatal care in the North of the Netherlands, the ACtion project

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BMC Health Services Research 2014, 14(Suppl 2):P31

Background Perinatal audits are used to discuss the causes of stillbirth and neonatal deaths. These audit meetings are organized in every hospital and attended by midwives, gynecologists, nurses, pediatricians, and managers from hospital and maternity care organizations at least twice a year.

Every audit group formulates its own local improvements. Unfortunately it appears that not all improvements are implemented properly. Therefore, to foster implementation skills of professionals that are involved, the project ‘Audit generated changes in perinatal care using tailored implementation strategies’ (ACtion) started in 2013. The objective of the project is to improve implementation skills of professionals working in perinatal care to enhance changes that were identified during audits.

Materials and methods The project covers the northern region of the Netherlands, in which there are 11 groups who execute perinatal audits. We offer implementation training on the spot to these professionals in 3 consecutive time periods. During the training we introduce the implementation methodology according to Grol et al [1], as well as the basics of change knowledge, which is subsequently applied on local improvement projects. All groups are offered 3 guided follow-up meetings per year to support further implementation and changing skills. The training is evaluated through standardized evaluation forms. The progress of the groups as well as the effectiveness of the program is monitored by questionnaires, observation, process journals, and interviews.

Results Since the start of the project, 11 groups have been trained. The size of the groups varies between 4 and 10 people, resulting in a total of 78 professionals with 7 different backgrounds. The groups have applied the newly learned implementation method to 22 improvement items in the first year of the project.

The pre and post self-assessment of the training showed an increase in implementation knowledge. The training also resulted in changes in the audit meetings regarding formulating improvements and assigning responsibility for implementation to specific professionals. Feedback on the implementation progress of improvements is increasingly included in the auditing process.

Conclusions After the 3-sessions training, all involved professionals were more knowledgeable on the implementation method and all were positive on their increased ability to incorporate improvements derived from perinatal audits. Moreover this ability enhances restructuring the discussion and feedback on improvement projects during the audit meetings.

Reference

P32
An exploratory qualitative study of patient mobility in the Lao People’s Democratic Republic
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BMC Health Services Research 2014, 14(Suppl 2):P32

Background Most health system research by default conceptualises the health system as being contained within the geo-political borders of nation states. Yet health seeking strategies often span international borders. Based on research in the Lao People’s Democratic Republic (PDR), a lower-middle income country in South East Asia, this paper explores the circumstances in which patients decide to cross national borders for health care. It develops a typology of patient mobility in the context of a lower-middle income country undergoing rapid demographic and epidemiological transition. It provides concrete examples of patient agency, inequality and at least partial government support for patient movement.

Materials and methods This study used an exploratory, qualitative design. The sampling method followed a case series, purposive sampling design in that only people who had been overseas for health care were included. Qualitative interviews (N = 35) were undertaken using a semi-structured thematic interview guide, informed by the literature. While an interview guide was used, the questions were structured so as to allow participants the opportunity to focus on the issues that were important to them.

Results Patients crossed borders for preventive, curative and specialist care, management of chronic disease and sexual and reproductive health. Respondents in our study who sought health care overseas, made decisions based on a number of factors including costs, convenience, experiences of friends and family, perceived quality of care and diagnostic ability, ease of communication with practitioners, presence of social or familial networks who could facilitate access to doctors, and type of treatment sought. The ability to cross the border conferred valuable benefits to patients but on the other hand, the presence of the border determined who accessed this care and at what price.

Conclusions The patients in our study were embedded in more than one national health context. The phenomenon of patient mobility illustrates the limitations of conceptualising health systems as being contained within the nation state. How for example, can we understand health-seeking strategies if these strategies take place in a space which spans geo-political borders and in what ways does it exacerbate existing inequalities in both sending and receiving countries? Patient cross-border movement challenges researchers and policy-makers to take a more holistic view of health systems as inclusively defined by the World Health Organisation.

P33
Baseline evidence practice gap for type 2 diabetes care among Aboriginal Australians in a cluster randomised controlled trial

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Background Type 2 diabetes is a major health problem in the Australian Indigenous population. Aboriginal Community Controlled Health Organisations (ACCHOs) are a primary care setting where
there is opportunity to partner with health services to reduce the current evidence-practice gap in the provision of health care for Type 2 diabetes. The aim is to examine the effectiveness of a tailored ecologically-based collaborative model in achieving adherence to best practice clinical guidelines for Type 2 diabetes in ACCHOs. This study will examine whether the model results in improvements in diagnostic testing, monitoring and control of diabetes using reliable objective clinical indicators.

Materials and methods ACCHOs across Australia who use the Communicare data management system, have at least one doctor providing health care and use an electronic system for pathology results will be eligible for the study. A cluster randomised wait -control design will be used in 18 ACCHOs (9 intervention and 9 wait control). Cross-sectional measurement of the proportion of eligible patients receiving National Health and Medical Research Council (NHMRC) recommended diabetes diagnostic testing, monitoring and control at each ACCHO will be completed at baseline and follow-up.

Results At baseline the mean proportion of patients from clinics who: 1) received diagnostic testing was 58.5% (SD 23.4%) in intervention clinics and 71.4% (SD 14.5%) in control clinics; 2) appropriate monitoring for type 2 diabetes was 49.1% (SD 12.4%) in intervention clinics and 50.7% (SD 18.4%) in control clinics; and 3) appropriate control w/ was 29.2% (SD 7.1%) in intervention clinics and 34.2% (SD 8.4%) in control clinics.

Conclusion A significant evidence practice gap exists in this setting with a vulnerable population for type 2 diabetes care. The study has a number of potentially significant outcomes including the provision of a model for engaging ACCHOs in examining performance and improving their implementation of best evidence-practice; the development of resources such as staff orientation manuals; the use of naturally occurring reliable data sets for monitoring and feedback and as a tool for intervention delivery and outcome evaluation which may be generalisable to other populations.

Acknowledgements We would like to acknowledge the 18 Aboriginal health clinics participating in this study.

P34 Explaining health managers’ information-seeking behaviour and use
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It is widely assumed that information will reduce uncertainty, help managers make better decisions and bring competitive advantage. Research has largely focused on top level managers in private companies, and on public sector policy-makers, but little is known about managers’ use of information at the organizational level.

The paper addresses this issue by providing empirical evidence to build a theoretical framework to explain managers’ information seeking behaviour. It takes the information science literature as a starting point and elaborates on established theories of generic information search behaviour drawing on research in other disciplines, notably management and organisational behaviour. Data from research funded by the UK National Institute of Health Research included documents and in-depth interviews with 54 managers engaged in major change projects in three hospitals and two service commissioning organisations in the English National Health Service. Managers need and search for information may be higher in these settings, especially as many health managers are clinicians trained in “evidence based” practice. Triggers of information need, type of information and sources, as well as the processes of information search and contextual factors are explored to identify an exploratory framework for managers’ information seeking behaviour.

The findings revealed that health managers’ information search behaviour is more complex than generic models would suggest: instead of a sequential process of activities carried out by individuals, the search process was interactive and ongoing with no apparent pattern, beginning or end, and information search and decision making were normally performed by groups. The sources, medium and types of information were many and varied, reflecting the multifaceted nature of managerial tasks. People and informal networks were primary sources, and personal experience and practical demonstrations of “what works” were most used. Research sources were seldom used directly. While contextual factors, notably government policies, strategy and culture (organizational and professional) and task were found to be important, so was agency in the form of managing interests and power relations between stakeholders. Further, there were influential information “leaders” operating at organisational and national level who were sometimes also creators of information as well as users and knowledge brokers. Finally, a research framework identifying the factors salient in the study at individual, group and organizational level is presented.

P35 Monitoring the implementation of the WHO Global Code of Practice on the international recruitment of health personnel: the case of Indonesia
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Background Indonesia has become one of the international nurse migration players that has supported the Code that was endorsed by the World Health Assembly, year 2010. In reference to the Code, the Ministry of Health (MoH) as designated by the national authority, issued the regulation on the management of Indonesian nurses’ migration. This study aimed to monitor the implementation of the Code on state policy changing in facilitating nurse migration.

Materials and methods Qualitative and quantitative data were collected in order to understand the impact of the Code on Indonesian nurse migration. A triangulation approach was achieved through semi-structured interviews with key stakeholders, and records review of nurses’ migration in the last two years.

Results The Global Code of Practice contributed to shape the migration policy at the national level. This regulation provided a shift change of migration policy, which can be conducted by a country that had an agreement with Indonesia or a country that had a law on migrant protection. Acknowledging the importance of the Code, the MoH translated the Code into Indonesian, and disseminated the material to multiple stakeholders. By the spirit of this Code, Indonesia received financial and technical cooperation and agreement with Japan on the improvement of nursing capacity. The challenge faced by the MoH was a need for strong regulation which could accommodate the relevant players to coordinate on the national level, notably for the MoH, National Board for The Placement and Protection of Indonesia Manpower, Ministry of Foreign Affairs and private recruiters. Quantitative data showed that there was a significant flow of nurse migration, especially on nurses’ movement before and after the code was adopted. Nurse migration was increased four-fold between 2010 (567 nurses) to 2012 (2512 nurses) compared to three years before the Code was adopted. Indonesia’s government should carefully assess the flow of migration as the country has suffered a shortage of nurses. Lack of HRH information system and no integrated national HRH observatory hinder the policy maker to promote a strategic approach in nurse migration.

Conclusions The Code has been utilized by the Ministry of Health to manage migration. This guideline at the least provides direction that may be used where appropriate in the formulation and implementation of nurse migration. A stronger regulation which not only ties the MoH, but also other stakeholders in health migrant placement needs to be established. Further, strengthening HRH information system and research on the impact of migration on Indonesia’s health system must be conducted soon.
P36
Registered nurses' application of the principles of evidence-based practice the first five years after graduation
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BMC Health Services Research 2014, 14(Suppl 2):P36
Background It has been proposed that the capacity to provide evidence-based practice is one of five core competencies that all healthcare professions should possess to meet the needs of the 21st century healthcare system. New nurses are faced with a challenging work environment which, combined with shortcomings in undergraduate education and their limited clinical experience, may affect their evidence-based practice. The aim of this study was to prospectively examine the extent of Swedish nurses' evidence-based practice during the first five years of professional life.
Materials and methods This was an observational longitudinal study, with yearly data collections over the course of five years. Data was collected in two national cohorts (named EX2004 and EX2006) of Swedish registered nurses. They had completed a three year academic nursing program and mainly worked in hospital settings. Participants were recruited while studying at any of the 26 universities in Sweden. A total of 2107 (EX2006) and 2331 (EX2004) nursing students were eligible. 1207 and 1227 nurses were included in the current longitudinal samples. The nurses had a mean age of 31.2/33.9 years old and a majority were female. The cohorts were representative of the general nursing population. Data was self-reported and collected through annual postal surveys. Evidence-based practice was conceptualized as a process and measured with an instrument including six items. Data was analyzed using linear mixed growth curve modelling.
Results Implementation of evidence-based practice was stable, between the two cohorts and over time. Individual differences existed and remained stable over time. However, the extent of practicing the different components of evidence-based practice on a monthly basis varied considerably, from 10% of the nurses (appraising research reports) to 80% (using information sources other than databases to search for knowledge).
Conclusion The extent of evidence-based practice remained unchanged during the first five years of professional life. It appears important to enhance both the contribution of undergraduate education and the contextual conditions in work life, in order to improve evidence-based practice among newly graduated nurses.

P37
Quality of life data from EQ-5D for evidence-based health service practice in dialysis care
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BMC Health Services Research 2014, 14(Suppl 2):P37
Background Hemodialysis (HD) and peritoneal dialysis (PD) are therapeutic options for patients with end-stage-renal-disease (ESRD), if transplantation is not available. Mortality rates for HD and PD are similar, while PD is generally the less costly alternative. Percentage of HD and PD shows considerable variability between high income countries (for PD from 5-7% in Germany and Switzerland up to 19-24% in the UK and Scandinavia). Patient reported outcomes, such as quality of life (QOL), can provide complementary evidence for planning of patient oriented dialysis services. Profile instruments (e.g. SF36, KDQOL) show no consistent QOL differences between HD and PD. However, single index preference-based QOL measures (such as EQ-5D), may add new information and are useful for later health economic evaluations. We aimed to collect current evidence for QOL of ESRD patients as measured with EQ-5D.

Materials and methods We performed a systematic literature search in electronic databases (Medline; Cochrane Library; from 2000 to March 2014; no language restriction). In addition, data from registries and manufacturers were included. We included experimental (RCT) and observational (cohort, cross-sectional) studies, which compared QOL between HD and PD-patients with EQ-5D in high income countries. Two reviewers screened titles and abstracts, resolved disagreements and extracted data. QOL data were pooled with two separate meta-analyses: (1) EQ-5D-VAS values as “patient view valuation” and (2) EQ-5D-index values as “general population view valuation”.
Results We retrieved 962 references. Six studies (with 8 comparisons), mostly from routine care, fulfilled inclusion criteria. The pooled difference in QOL between HD and PD, as derived with EQ-5D visual-analog-scale (VAS: 0 to 100), was 1.4 (95%-CI: -2.0 to 4.8) in favor of PD. The difference in QOL, as derived with the EQ-5D index values (0 to 1), was 0.08 (95%-CI: -0.05 to 0.22), again in favor of PD. These differences, however, may not be clinically relevant nor are they statistically significant. In addition, substantial heterogeneity emerged for the EQ-5D index value analysis (I2: 89.7%).
Conclusion QOL as measured with the single index preference-based instrument EQ-5D was similar for HD and PD, but data is scarce. More real world QOL data are needed from Health Services Research to increase precision of results. This may also improve knowledge about minimal important differences in QOL for ESRD patients as measured with EQ-5D. Finally, QOL data from EQ-5D could contribute patient oriented evidence for design of health services with an optimal balance between HD and PD care.

P38
Implementing evidence based health skills in practice through higher education
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BMC Health Services Research 2014, 14(Suppl 2):P38
The promotion of a sustainable evidence-based health care practice requires multiple efforts. Since master’s level courses in health sciences in Sweden target practicing professionals, integrating knowledge and skills related to evidence-based practice into higher education is one way of reaching this goal. Here we describe the implementation of the course Evidence Based Practice, 7.5 ECTS at the Master of Medical Sciences program at Lund University, Sweden. The course is elective and enrolled registered nurses, physiotherapists and occupational therapists, i.e. the main fields. It is internet based, with five seminars on campus. The learning activities are interprofessional, with each student taking a bearing on their main field. The mode of teaching applied is Targeting Specific Skills of Evidence Based Practice [1]. Examples of learning outcomes are:

1. Define 3-4 relevant CQ for the course.
2. Review the literature related to the CQ above, and classify and summarize the papers according to the PICO map [1].
3. A clinical guideline is critically reviewed and summarized according to a checklist [2].
4. A web-site focusing on health information for lay people is critically reviewed and summarized.

Teacher feedback is given throughout.

The examination is an individual paper. Following the PICO map CQs are identified and formulated. The literature is systematically reviewed and the five papers with the highest evidence are critically appraised and summarized, including a popular science abstract. At the final seminar the students present and defend the paper orally, including an opposition on another student’s paper. In their evaluations the students express above all that they search and review scientific papers more systematically and critically. They state that they now know how

http://www.biomedcentral.com/bmchealthservices/supplements/14/52
to frame CQs and that they apply the acquired knowledge and skills in professional practice. The implementation of this type of course into higher education is a feasible way to enhance the use of evidence based knowledge and skills in health care practice.

References

P39
Establishing evidence-based practices within services for children: knowledge transfer challenges
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BMC Health Services Research 2014, 14(Suppl 2):P39

Objectives To facilitate implementation of evidence-based practice in the field of child and adolescent mental health in Norway. Background Although more knowledge about effective interventions is frequently developed, most services in Norway are not evidence based. Part of the reason might be that practitioners and decision-makers do not know which interventions have scientific evidence for effectiveness and that they don’t search for information in traditional research literature. Although the evidence base of available interventions is growing, little research has been conducted on implementation strategies to bridge the gap between research and practice.

Materials and methods The Norwegian web-site www.ungsinn.no [http://ungsinn/] (Youngmind) has been developed to facilitate access to information about interventions and their evidence base. The website contains available interventions for the practice field in Norway. Each intervention is presented by a description followed by a classification of evidence level. A review of existing research with emphasis on effect studies is an important part of the presentation.

Discussion Establishing evidence-based practices within human services may be challenging, even though the practice in itself has been proven effective in efficacy and effectiveness research. To facilitate an evidence-based practice within psycho-social services for children, strategies should encompass more than just rigorous research on interventions. Knowledge transfer is a key concept, in terms of implementation quality and sustainability. A strategy that has a well-defined plan for knowledge transfer is more likely to be successful. It is important to simultaneously establish a substantial base of well-documented interventions and additionally create strategies for successful knowledge transfer.

P40
Data-based decision-making at all managerial levels in health care: an integral part of evidence-based practice
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BMC Health Services Research 2014, 14(Suppl 2):P40

While the critical role of an evidence base for policy decision-making in health care is obvious and well documented, the same cannot be said for daily decision making by health care managers at all levels of the system.

The relevance for heads of clinical departments, chief nurses, and specialist units became clear when directing a University Hospital and later being part of the management of a similar institution some years later. To be clear, this is not related to clinical decisions but to those in the managerial role. Two issues were immediately clear - there was the inherent principle of the “I know” method of decision making - “don’t confuse me with facts”, and secondly that most heads of service departments had not received training in decision-making. It was taken for granted that they knew how to do it. An additional issue was the lack of relevant information on issues that required a manager’s decision. There was a need to plan studies, completed in relatively short time periods, in order to allow for “real-time” decision making.

On the basis of the above analysis, a course was designed for students within the framework of studies for the Master of Public Health or Master of Health Administration. The syllabus includes both models for administrative decision-making (adapted to health care) as well as a series of case studies that had been performed over the years and provided a practical basis for the managerial decision-making process. These included, amongst others:
• The performance of unnecessary laboratory tests in the community - reasons for ordering, use of the results, and effect of intervention
• The implication of low reliability of interpretation of radiological tests and their possible improvement
• Inappropriate use of hospitalization days
• The use of routine computerized data for quality assessment in hospitals

All students were required to present assignments on defined issues. This included epidemiological data, need for additional manpower and its training and financial implications. The defined tasks included:
• The need for additional manpower
• The introduction of a new test or a change in method of performance
• Rise in infant mortality in a defined region

In addition a final project required the preparation of a detailed plan relating to a question requiring a decision in a health service. The course has been very positively evaluated over the years especially in having provided a defined approach to health managerial decision making.

P41
Changes in lifestyle risk factors: health and economic impact as estimated by the population based RHS model
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BMC Health Services Research 2014, 14(Suppl 2):P41

Background The ability to estimate societal cost-savings given a change in population lifestyles is of interest to health promotion specialists and decision makers. A population-based model named Risk factors, Health and Societal Costs (RHS) was developed to simulate changes in incidence and related societal costs of several chronic diseases after five to ten years, following assumed changes in four common risk factors for disease: obesity (BMI>30), daily tobacco smoking, lack of physical activity and risky consumption of alcohol.

Materials and methods The RHS model is based on relative risks (RR) and potential impact fractions (IF) that simulate the changes in disease incidence of reducing the exposure to risk factors [1]. Relative risks as well as disease-specific QALY and DALY weights were collected from international publications. Swedish national registers were used to retrieve incident cases and disease-specific medical care costs, while local authority costs for care and sickness insurance expenses were estimated via a Swedish study [2]. The health gains are calculated as decreased number of incident cases of disease, increased health-related quality of life (QALYS) and decreases in disability (DALYS).

Results The scenarios, which assume a certain reduction in population risk factor prevalence, show that considerable health gains and savings in societal costs can arise from modest changes in population lifestyle habits. As an example, a 1% reduction in prevalence under five years among Stockholm county population is estimated to lead to health gain of 64 QALYs and societal savings (health care, municipality care and sickness insurance) of 13 million Swedish krona (1.2 million GBP).

Conclusion The RHS model estimates future cases of illness and related societal costs due to lifestyle risk factors in the population. By creating scenarios with assumed changes in risk factors, the model can estimate potential health gains and societal costs savings, which can be used as relevant arguments in discussions with decision-makers for a more health-promoting health care system.
References


P42

Effective access to health care in Mexico
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BMC Health Services Research 2014, 14(Suppl 2):P42

Background Effective access measures are intended to reflect progress toward universal health coverage. This study proposes an operative approach to measuring effective access: in addition to the lack of financial protection, the willingness to make out-of-pocket payments for health care signifies a lack of effective access to pre-paid services. Materials and methods Using data from a nationally representative health survey in Mexico, effective access at the individual level was determined by combining financial protection and effective utilization of pre-paid health services as required. The measure of effective access was estimated overall, by sex, by socioeconomic level, and by federal state for 2006 and 2012. Results In 2012, 48.49% of the Mexican population had no effective access to health services. Though this represents an improvement since 2006, when 65.9% lacked effective access, it still constitutes a major challenge for the health system. Effective access in Mexico presents significant heterogeneity in terms of federal state and socioeconomic level. Conclusions Measuring effective access will contribute to better targeted strategies toward universal health coverage. The analysis presented here highlights a need to improve quality, availability, and opportuneness (location and time) of health services provision in Mexico.

P43

Health professionals for the future
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BMC Health Services Research 2014, 14(Suppl 2):P43

Recommendations for an intersectoral policy for the education of health professionals have recently been stated in the Lancet Report “Health professionals for a new century” and by the WHO policy framework “Health 2020”. These postulates were further developed into an educational strategy by the Careum Foundation. In this framework four mutually dependent perspectives were defined: functions related to the population, to patients, to organisational development, and to increasing knowledge. It is stressed that besides the historically strong education for patient-related functions, the three other functions must receive the same attention with regard to regulation and financing. Hence, education for health professionals must lead to cross-functional and intersectoral thinking and makes cooperation skills a priority, besides promoting technical expertise. These skills require new approaches in methodology and didactics.

The Department of Health Sciences and Health Policy at the University of Lucerne, Switzerland, recently developed a Master’s program that complements clinical education with an education that aims at the other three functions. The program offers a case in point on how the current dialogue on the intersectoral policy for the education of health professionals can be put into practice.

The program approaches the complexity of health issues by examining them from an interdisciplinary perspective. Teaching modules are instructed by a diverse faculty of researchers with background in areas such as medicine, natural sciences, economics, law and the humanities. Besides the teaching of technical expertise, knowledge of health systems and services is broadly included in the curriculum. After the first semester, students can choose their major in the area of health and social behavior, health economics and health policy, health communication, research methods, human functioning sciences or health services research. The faculty works in close connection with local partners from academic institutions, industry and government. Together with these partners, research internships are offered to all students, which allow students to participate in a team outside University.

Conclusions so far are that students are highly motivated to grasp the complexity of health issues from an interdisciplinary perspective. Many students who were initially attracted by specific majors were introduced to a broader health perspective and gained insight in novel areas they would not have otherwise. The entire program is taught in English which attracts a broad international student body with diverse backgrounds and fosters cooperation skills and the cross-area dialogue during interactive sessions.

P44

Shared follow-up care for early breast cancer - results from an Australian national demonstration project
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BMC Health Services Research 2014, 14(Suppl 2):P44

Background Follow-up care after completion of breast cancer treatment is important to monitor side-effects of treatment, detect recurrence, and provide holistic support. Evidence-based best practice guidelines exist to inform the approach to the follow-up following completion of active treatment. In Australia follow-up care is carried out mostly in tertiary settings by specialist clinicians.

There are many pressures facing Australia’s health workforce, including developing technology, growing community expectations and the ageing population, which are increasing the demand for workforce services, while Australia is experiencing current and emerging shortages in the majority of medical services. It is important to ensure patient access to best-practice care is maintained across all geographic areas. New models of care are a potential solution.

Materials and methods Cancer Australia funded a national demonstration project to explore the acceptability to patients and health professionals, adherence to best practice and comparative costs of a shared approach to follow-up care for women with early breast cancer, across four different health service settings. The shared care model was based on the Principles of Shared Care and developed in accordance with evidence based recommendations for follow-up of women with early breast cancer.

Results Shared follow-up care for women with early breast cancer was demonstrated to be an acceptable model of care with agreement to participate of nearly 80% of patients approached, a much higher participation rate than similar international studies (45-67%). Best practice care was promoted with over 90% of participants receiving an individualized schedule for follow-up in line with best practice.

Critical success factors were identified including clinical leadership, appropriate infrastructure, accurate and accessible electronic medical records, women having a regular GP and care coordination. Other factors that support implementation include availability of evidence-based clinical practice guidelines for follow-up, the development of tailored information and tools, and the effective focus on communication between all three important participants in the model - i.e. patient, specialist and the GP.

Conclusions This study demonstrated shared care to be an acceptable model of care for the follow-up of women with early breast cancer, which can improve access to care and promote the provision of care in line with best-practice recommendations. Shared care decreases the burden on specialist outpatient’s clinics resulting in a systems level approach to improving timely access to specialists for women with breast cancer. Appreciation of the critical success factors will support applicability of the shared follow-up model across other cancer groups.
P45 What does it take? Healthcare professional’s perspective on incentives and obstacles related to implementing ICTs in home-based elderly care

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BMC Health Services Research 2014, 14(Suppl 2):P45

Background The purpose of this study is to identify obstacles and incentives associated with implementation of Information and Communication Technologies (ICTs) in elderly home-based care services, from a healthcare professional perspective. The use of ICTs in elderly homecare is heralded as part of the solution to many of the imperatives currently challenging healthcare systems, but deploying new technology and practice innovations in this complex system can be a challenge. There is poor understanding of what healthcare professionals regard as vital when implementing ICTs in elderly homecare, thus the likelihood of successful implementation is threatened.

The following research question guided our study: How do healthcare professionals describe incentives and obstacles related to implementation of ICTs in home-based care for the elderly?

Materials and methods Two focus group interviews with 6 participants in each group were conducted. The informants represented home-based care in a Norwegian municipality and were healthcare professionals in direct patient care or nurse managers administrating care services for the elderly. Through content analysis of the transcribed interviews, incentives and obstacles regarding implementation were identified.

Results From a healthcare professional perspective the main incentive to implement ICTs was the practical use in daily care; different patient groups were identified where the use of ICTs potentially could increase the elderly persons’ ability to live more independently in their own home for a longer period of time. The potential for a more precise clinical assessment of home-dwelling elderly receiving care services as well as more rational time use for staff were also described as incentives. Obstacles related to implementation where uncertainty about legislation regulating the use of ICTs, concerns about which impact ICTs may have on relationships with patients, and ethical issues related to the use of ICTs in home-based care, such as surveillance and tracking of persons unable to give informed consent.

Conclusion This study identified three incentives related to implementation: 1) positive impact on patients’ degree of autonomy and independency; 2) increased efficiency in day-to-day practice and 3) increased effectiveness in clinical assessments. The main obstacles identified were: 1) uncertainty concerning legislation regulating the use of ICTs, 2) ambiguity towards which role ICTs will play in the day-to-day contact with patients and 3) ethical issues related to the use of ICTs in home-based care.

P46 Progress and implementation of team-based care in the United States

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BMC Health Services Research 2014, 14(Suppl 2):P46

Background There are currently many changes taking place in the health care system in the United States. Major transformations occurring in primary care settings strive to improve efficiency and effectiveness of health promotion and prevention activities, coordination of patient care, and management of chronic diseases. Team-based care is a major component of primary care redesign.

The purpose of this study was to gain an in-depth understanding of how primary care practices in the United States are implementing team-based care. The study focused on understanding team-based care approaches, challenges to implementation, and successful strategies.

Materials and methods A multidisciplinary research team used qualitative research methods to conduct in-depth case studies of eight primary care practices in various stages of practice transformation. The research team collected data from practices over a sixteen-month period using on-site interviews and structured telephone questionnaires (N=51), observation, and document review. In addition, key informant interviews were conducted with sixteen (N=16) leaders of primary care delivery organizations across the United States to obtain detailed information on team-based care models, such as team composition, role and responsibilities of team members, and how teams function to meet the needs of their patients.

Results The composition of teams and team member functions vary greatly across health care organizations. Team members typically include one or more providers (physician, physician assistant or nurse practitioner), registered nurses (RN) or licensed practical nurses (LPN), medical assistants (MA), and administrative staff. In some settings teams include pharmacists, behavioral health specialists, social workers, community health workers, patient navigators and/or care coordinators. Many organizations recognize the patient as an important member of the team.

Organizational culture, values set by practice leaders, and other factors influence implementation of team-based care. Successful strategies for implementation include: leadership support and commitment, a multidisciplinary design and implementation team, careful review and redesign of processes, communication through formal policies and procedures and regular team meetings, and collection and review of performance data. Culture for team-based care models center on shared values and respect for individual team members’ skills and contribution.

Conclusion The future of primary care in the United States will be characterized by many models of care that incorporate different types of health care professionals. Team-based care is a promising method for improving care coordination, medication management, patient education and self-management, and increasing the delivery of preventive services. Team-based care models may also improve productivity and boost employee morale.

P47 Redesign of quality improvement work methods in the community in the health care organization in Israel

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Background Comprehensive and coordinated management of chronic disease is a major challenge for healthcare systems. Clalit Health Services, a non-profit health fund, insures 4 million people in Israel, and provides comprehensive care through 1,300 primary and secondary clinics and 14 hospitals. The base of the health care is 1150 multi-professional primary care health centers. Clalit has a computerized database that tracks all services used by the members of the health fund. The data is linked to performance measurements by 52 indicators of care. This study describes the introduction and implementation of an innovative work model and assesses its influence on quality improvement, patient satisfaction, and waiting times, without the need for additional resources.

Redesign of the quality improvement actions in the clinic using the unique features of each profession to improve clinical quality and performance with emphasis on team work and use of the computerized indicators’ data for initiation of proactive interventions in patients’ care. Interventions included structured work process from population level to single patient level and computerized tools supporting the identification of patients for recall and active intervention during the visit. The only resources were reserved time for primary care providers to concentrate on clinical quality promotion. The adoption of the program was promoted by widespread publishing of the results in the organization and continuous follow up of the results.

Materials and methods The model was tested in 10 primary care clinics with matching controls in 2007-2008. The pilot group had 64,760
patients, and the control group had 65,759 patients. Performance of mammography was the common indicator in all the clinics. Waiting times for appointment, average cost per patient, and patient satisfaction were also measured according to Clalit’s biannual nationwide survey. The organization wide implementation was followed by intranet survey of all clinics biannually.

Results/Conclusions One year after the intervention, mammography rates in the pilot group rose by 25.6% from 52.23% to 64.60% compared to the control group whose performance rate rose from 59.16% to 63.68%, an improvement rate of 8.1% (p=0.002). There was no worsening in outcomes of waiting times, costs, or patient satisfaction.

588 clinics’ managers answered to intranet survey in 2013, 40% response. 94% reported on implementation of the proactive model in the clinic. The general compound quality score of the organization rose 2%-5% each year since 2007.

P48 Design and base-line evaluation of financial incentives to increase effective coverage of priority health interventions funded by Seguro Popular, Mexico

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Purpose To present a ground-breaking results-based financial incentives experiment.

Content Mexico’s Seguro Popular has contributed towards universal financial risk protection. However, coverage is low for chronic diseases, with only 26% and 30% of affiliate adult men and women, respectively, having access to preventive care. The state of Hidalgo’s Seguro Popular affliating 3.4 million people introduced a results-based financial incentive scheme to improve performance of key outputs and outcomes. A total of 25 indicators were chosen: 20 for PHC and 5 for hospital care, covering diabetes, cardiovascular health, prenatal care, breast cancer screening, oral health, family planning, chronic disease prevention and interpersonal quality.

Indicator base-line was set using survey data; caps were defined using an expert panel to identify provider control over resources and outcomes. A standardized point system was devised to compare providers and to facilitate monitoring, using health gain, costs and expert priorities. The cash value per point was set for each provider based on the size and socioeconomic level of their coverage target. To encourage coverage of the most difficult to reach, performance below a threshold -set higher for hospitals- leads to discounts, while performance at each of four superior levels increases point value geometrically. The size of the incentive fund was estimated at 10% of the payer’s financial capacity. The impact of incentives on increased activity and health care costs was estimated. A case-control evaluation base-line was established.

Significance Success with the scheme promises to speed-up the introduction of financial incentive schemes for Seguro Popular in other states in Mexico and to provide much needed experience for other health systems around the world.

Target audience This presentation will be of interest to decision makers, consultants and researchers involved in the design of results-based financing innovations as a strategy to increase effective coverage of high-priority health interventions.

P51 Costs of current and improved meningitis disease surveillance in Chad

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Background Meningococcal meningitis has been a terrifying public health threat in countries of the Sahel and sub-Sahel over the past 100 years. This geographical area has been named the “African meningitis belt.” Older children and young adults are particularly at risk during epidemics. The mortality rate is usually 5% - 10%. A serogroup A meningococcal conjugate vaccine was licensed in 2009. Mass campaigns with MenAfriVac® covering 1-29 years old have been conducted in several countries with assistance from the GAVI Alliance. Long term health impacts of MenAfriVac® can only be determined if strong disease surveillance is in place. The study objective was to estimate the costs of meningitis surveillance in Chad and determine resources needed for implementing district case based surveillance.

Materials and methods Data were collected for 2012. The ingredient approach to costing was used. Data were collected from the national laboratory and seven districts. In each district, three primary care facilities and one district laboratory was included. Resource utilization data were collected from interviews. Resources were categorized according to core surveillance functions (detect, report, analysis, feedback, investigation, and response), and support functions (training, supervision, communication, and co-ordination). Unit costs were collected from financial records of Ministry of Health and international partners. An operational standard was developed for modeling the incremental costs of upgrading the system.
Results Optimal surveillance was severely hampered by limited resources. One district laboratory had not been able to conduct any analysis of cerebrospinal fluid (CSF) due to lack of supplies. In 14 of the facilities staff was qualified to perform lumbar puncture on patients with suspected meningitis; patients were referred to district hospitals in the remaining seven facilities. In three of the districts, no meningitis cases were reported during 2012. In the other four, reported cases varied between 43 and 232, equivalent to between 11 and 89 per 100,000 populations. 11% of CSF was sent to the national laboratory for confirmation.

Costs per detected case amounted to US$ 49, with costs of lumbar puncture comprising 43% and laboratory analysis 41% of total costs. In facilities with no detected cases, recourses spent on surveillance were minimal.

Conclusions Standard procedures for meningitis surveillance are missing due to lack of supplies at health facilities and laboratories and due to inadequate training of staff. While investments are needed across the system, these are only likely to be sustainable if activities are part of integrated disease surveillance.

PS2 What is the best way to organize vaccination services for the children of Quebec, Canada?

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Background Recently in Quebec, Canada, several contextual elements (e.g. physician disengagement, delayed appointments and late vaccines) justified a review of how child vaccination services are offered. A 5-year study begun in 2010-2011 aims to identify the optimal organizational model(s) for vaccination services for children aged 0-5 years. The first year process and progress are reported.

Materials and methods This action research project adopts the Appreciative Inquiry methodology [1], using case studies [2]: 3 regions are currently studied (region 1: 16,000 births/year; region 2: 5,000 births/year; region 3: 5,000 births/year). Building the model began with the development of a conceptual model drawn from a literature review. The participatory process relies on a steering committee for each case study, made up of players from local and regional levels and researchers. It meets monthly to discuss, reflect on and review vaccination service components. Various facilitation techniques foster the gradual production of an array of documents (e.g. accounts, schemas, tables) to fuel the discussion. Logbooks and field notes document the process. Qualitative analyses have been done.

Results To date, charts of service usage and schemas illustrating current vaccination service organization have been developed. The appointment-making processes, the functioning of vaccination clinics, the management of immunizing products and vaccination data have been described. Some courses of action have emerged and will be further explored: simplified appointment making, more systematic reminders and follow-ups, better structured vaccine transport and storage.

Conclusion Thanks to the approach used, emerging solutions will be more sustainable, acceptable and adapted to needs. Identification of the optimal model(s) for the organization of child vaccination services, adjusted to the various contexts is on progress.
P54
Where should stepped-wedge designs be placed in the evidence hierarchy? Using the "within-wedge" analysis approach to generate evidence of possible bias
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The stepped wedge research design is becoming increasingly popular, particularly in the field of implementation science. It is a form of cluster randomised controlled trial with unidirectional cross-over (normally from control to intervention). This trial design may be biased however because the effect of calendar time is unbalanced between control and intervention periods. Hence there is concern that this design may produce biased results compared to using a parallel cluster randomised controlled trial. Authors have previously compared these two designs on the grounds of data collection burden and cost. However, it is arguably more important to compare these designs in terms of whether they are equally likely to generate results that are free from bias. This paper discusses the potential sources of bias relevant to these designs, examines how empirical evidence of bias has previously been generated, and then outlines the "within-wedge" analysis approach - a new method for generating evidence of potential bias in the stepped wedge design.

There have been four strategies previously used to generate empirical evidence of bias with different research designs. These include: i) direct comparison of results from trials that have used different designs to answer the same question, ii) meta-epidemiology, iii) resampling from existing studies, and iv) resampling from custom-developed datasets. Each approach has strengths and limitations in the evidence they can generate. For example, approach i) requires minimal variation in the study designs and populations in order to minimise confounding when making comparisons, while approach ii) requires data from large numbers of studies to be gathered.

The within-wedge analysis approach is a variation on approach i) made possible through the realisation that data from a parallel cluster randomised trial is hidden within a stepped wedge design. The two effect estimates generated (one from the stepped-wedge design, one from the parallel cluster trial design) can be compared in a ratio of ratios. The within-wedge analysis approach has an advantage over approach i) in that many study characteristics are held constant, and an advantage over approach ii) in that this approach can be applied to individual studies (and to multiple outcomes within individual studies). Meta-regression can be applied to within-wedge analysis outcomes to identify situations that may make stepped-wedge designs more or less prone to bias. We recommend that the within-wedge analysis reported as a secondary analysis from stepped-wedge designs in future.

P55
The feasibility and validity of a preference-weighted composite endpoint to establish value in geriatric care
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Data from 17,603 older persons were derived from TOPICS-CEP. The aim of this study was to validate TOPICS-CEP in a large heterogeneous sample of older persons aged ≥65 years.

Materials and methods
Data from 17,603 older persons were derived from TOPICS-MDS (www.TOPICS-MDS.eu); a public data repository. Feasibility was evaluated by the prevalence of missing values among TOPICS-CEP scores. To assess convergent validity, TOPICS-CEP scores were cross validated against the Cantril’s ladder life satisfaction scale and the EuroQol-5D utility score. Known-group validity of TOPICS-CEP was investigated across socio-demographic and clinical characteristics. To assess whether TOPICS-CEP scores were generalizable across different settings, we conducted pooled and subgroup analyses: older persons in the general population, general practitioner setting, and hospital.

Results
In the complete sample, TOPICS-CEP scores could be calculated for the majority of the participants (88.2%). There were no floor and ceiling effects found and the distribution was slightly skewed to the left. The correlation between TOPICS-CEP and Cantril’s ladder was 0.43 (95%CI [0.39-0.48]) and the correlation between TOPICS-CEP and EuroQol-5D was 0.63 (95%CI [0.58-0.67]). Expectedly, mean TOPICS-CEP scores differed significantly (p<0.05) across marital status (married or cohabiting: 7.56 versus partner deceased: 7.13), living arrangements (independent living with others: 7.56 versus dependent living: 6.37), dementia (no: 7.43 versus yes: 6.30), depression (no: 7.42 versus yes: 6.26), and dizziness with falls (no: 749 versus yes: 6.42). When stratified by subgroups, similar results were found for feasibility, convergent and known-group validity.

Conclusions
The TOPICS-CEP was able to accurately reflect general wellbeing in a large pooled dataset as well as across subgroups. Our data support that the TOPICS-CEP score is an objective and robust measure for researchers interested in investigating the general wellbeing of older persons. The TOPICS-CEP guideline version 1.1 is now available online http://www.TOPICS-MDS.eu.

Reference

P56
Optimizing existing health systems: an argument for integrating functioning information
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Background
Health systems are being challenged, in meeting the needs of growing numbers of people living with chronic health conditions, where cure of the disease is not the primary outcome of care but rather maintaining or improving functioning over a person’s life span. Functioning is an umbrella term; it encompasses body structures and body functions, as well as people’s capacity and actual performance to conduct activities of daily living and to participate in society. It is a multi-dimensional and interactive concept, which describes not merely the consequences of health, but constitutes a fundamental component for understanding health and how it plays out in everyday life.

Health information constitutes the foundation for any evidence-based decision making related to finances, service delivery, policy and governance in health systems. Though, there is agreement that disease-specific and functioning information are conceptually complimentary, health systems could be further optimized by accounting for health and how it plays out in everyday life on an operational level. If not, current health systems will continue to fail in predicting e.g. length of stay, discharge destination, and service costs of people with chronic health conditions. Ultimately, they will be limited in providing optimal outcome measures. Furthermore, to combine the outcome measures into one single index and to promote comparability between studies, a preference-weighted Composite End Point (called: TOPICS-CEP) was developed [1]. The aim of this study was to validate TOPICS-CEP in a heterogeneous sample of older persons aged ≥65 years.

Materials and methods
Data from 17,603 older persons were derived from TOPICS-MDS (www.TOPICS-MDS.eu); a public data repository. Feasibility was evaluated by the prevalence of missing values among TOPICS-CEP scores. To assess convergent validity, TOPICS-CEP scores were cross validated against the Cantril’s ladder life satisfaction scale and the EuroQol-5D utility score. Known-group validity of TOPICS-CEP was investigated across socio-demographic and clinical characteristics. To assess whether TOPICS-CEP scores were generalizable across different settings, we conducted pooled and subgroup analyses: older persons in the general population, general practitioner setting, and hospital.

Results
In the complete sample, TOPICS-CEP scores could be calculated for the majority of the participants (88.2%). There were no floor and ceiling effects found and the distribution was slightly skewed to the left. The correlation between TOPICS-CEP and Cantril’s ladder was 0.43 (95%CI [0.39-0.48]) and the correlation between TOPICS-CEP and EuroQol-5D was 0.63 (95%CI [0.58-0.67]). Expectedly, mean TOPICS-CEP scores differed significantly (p<0.05) across marital status (married or cohabiting: 7.56 versus partner deceased: 7.13), living arrangements (independent living with others: 7.56 versus dependent living: 6.37), dementia (no: 7.43 versus yes: 6.30), depression (no: 7.42 versus yes: 6.26), and dizziness with falls (no: 749 versus yes: 6.42). When stratified by subgroups, similar results were found for feasibility, convergent and known-group validity.

Conclusions
The TOPICS-CEP was able to accurately reflect general wellbeing in a large pooled dataset as well as across subgroups. Our data support that the TOPICS-CEP score is an objective and robust measure for researchers interested in investigating the general wellbeing of older persons. The TOPICS-CEP guideline version 1.1 is now available online http://www.TOPICS-MDS.eu.

Reference
Improving casemix systems by integrating functioning information: P57

Materials and methods This conceptual paper builds upon the six building blocks of the World Health Organization's (WHO) systems' framework to examine systematically the integration of functioning information in health systems. Health information is one of the building blocks and at the same time is an essential element for the other building blocks (leadership and governance, financing, medical products and technologies, service delivery, and health workforce). Examples outlining the need, added value, and challenges of integrating functioning information in each block will be shown.

Results and conclusions The examples highlight that domains of functioning are recognized and considered also on the operational level of health systems. However, one of the big challenges within and across all the building blocks is the lack of conceptual clarity and consistency on what defines functioning. Although standards exist, it remains that they need to be implemented to ensure that information on functioning, in addition to disease-specific information, is available for evidence-based decision making. It can be concluded that dialogue amongst stakeholders within and beyond health systems is central to agree upon the systematic implementation of standards.

P57 Improving casemix systems by integrating functioning information: a systematic literature review and call for expert input

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BMC Health Services Research 2014, 14(Suppl 2):P57

Background An aging population and growing number of people with chronic health conditions, alongside resource constraints in health systems, require innovative and integrative approaches to improve systems' efficiency while meeting the needs of individuals and populations. Health information is the foundation for evidence-based decision making within and across all levels of health systems. Understood comprehensively from the perspective of human functioning, health information encompasses bio-medical or disease-specific components as well as information on how health plays out in daily life. This comprehensive perspective demonstrates the complexity of health and is needed to facilitate an integrated care approach across settings and individuals' life span. Though disease-specific and functioning information are conceptually complimentary, on an operational level current reimbursement systems, especially casemix systems, still rely predominantly on information about the disease. There is, however, increasing evidence that the mere diagnosis fails to predict, e.g. length of stay, discharge destination, and service costs. The need to adapt current casemix systems to the joint use of disease and functioning information is recognized in order to account for the complexity of health. Health systems rely on evidence on the added value of functioning information to decide whether to adapt their casemix systems. The objectives of this paper are i) to provide preliminary findings of a systematic literature review that aims to identify the added value of integrating functioning information into casemix systems, and ii) to raise challenges in integrating functioning information into casemix systems for discussion with experts.

Materials and methods We are currently performing a systematic literature review using standard literature databases (PubMed, EMBASE, CINAHL, Sociological Abstracts, JSTOR and EconLit) and hand-search of reference lists. English-language papers describing empirical studies of individuals and the ability to provide a genuine perspective based on people's needs. Furthermore, new questions have to emerge for sustainable social health care insurance. This study discusses how the policy to advance health care markets and that for sustainable social health care insurance can be made compatible in Japan and also argues the risk of policy failures.

P58 Health care policy and market reforms in Japan

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Since health care markets are usually dictated by domestic and local policies, health care services in Japan are not so much affected by globalization at present. But in some countries, globalization has a great influence on their health care markets as medical tourism is becoming popular around the world. For example, some countries especially developing ones, can attract customers from developed countries by offering high quality health care at a cost lower than in their home country. The Japanese government has recently acknowledged that health and medical care will certainly form a huge global market in the future. On the other hand, health care service reforms have been under constant pressure to reduce costs for sustainability of social health care insurance. This study discusses how the policy to advance health care markets and that for sustainable social health care insurance can be made compatible in Japan and also argues the risk of policy failures.

P59 The role of nurses in transforming health care

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Background Health care (HC) planning strategies aim to transform HC models through integrated care schemes and increasing the response capacity of the primary health care (PHC) services. These reforms will require the provision of new roles that are inherently aligned with the nursing model of care [1]. A reflection is needed about the present and future of the Spanish health care system and the role of nurses.

Materials and methods The deliberation is based on a textual reading of the Organisation for Economic Co-operation and Development (OECD) statistics of practicing nurses from 2000 to 2011 and the description of the recent situation in the health care area [2].

Findings It is widely accepted that nurses play a critical role in providing health care, especially in PHC and in home care settings. The need for health promotion, preventive interventions and caring for people with chronic conditions suggests that nurses are expected to gain importance. Recent data shows an increased number of nurses per capita in almost all OECD countries. Spain showed one of the largest increases since 2000. However, the number of nurses per capita remained well below the OECD average, with a relatively low number of practicing nurses per practicing physicians (1.39) compared to the 2.8 average ratio in OECD countries [2].

Conclusions Governments have to become aware of nurses' contribution. Likewise, nurses have no choice but to position themselves in this new reality, identifying and using their knowledge, their vision of individuals and the ability to provide a genuine perspective based on people's needs. Furthermore, new questions have to emerge regarding nurses and the evolving health policies, regulation, financing and provision and education [3]. For all of these aspects have a direct impact upon nurses and vice versa.

References
**P60**

**Influence of accessibility and distance in the consumption of disposable equipment in a hemodialysis unit**

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**Background**
The location of the disposable material in a hemodialysis unit is essential to ensure the effectiveness of the circuits and to provide quality in nursing care.

The law of the minimum effort may explain how the accessibility and distance of dressing trolleys can influence the consumption of some health care supplies [1,2]. It is necessary for health managers to look for effective strategies that optimize the use of wound care material without reducing the quality of care [1,3].

The objective was to determine whether the distance that nurses have to walk to access the trolley with the wound care material (gauzes, dressings and 10cc physiological serum), influence on the amount consumed in a hemodialysis unit at the Fundació Puigvert.

The research hypothesis is: consumption of those materials will decrease 5% as the distance to access the trolleys increases from 5 to 7 and from 7 to 9 meters.

**Materials and methods**

Thirty nurses (one trolley each one) undertook two shifts in a quasi-experimental design. For two months, trolleys were placed 5 meters away from the patient bed, another two months they were placed 7 meters and in the last two months the distance was 9 meters.

**Results**

Significant differences were observed comparing the consumption of physiological saline solution, gauzes and dressings when trolleys were located at 7 meters versus the 5 meters (being lower consumption, p<0.001) and when they were located from 7 to 9 meters (consumption being lower, p<0.01). There was an inverse linear relationship between the consumption of gauze and dressings and experience of nurses for any distance (RR = 1.26-0.112 duration; p=0.03).

**Conclusions**

Correlation between consumption of material and age and experience was found inverse for all distances. A lower consumption of material by older and more experienced nurses was found. The location of material leads to a reduction in costs without any consequence in quality of care for patients in a hemodialysis unit.

**References**


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**P62**

**Measuring administrative integration of disease control programmes within health systems: a case study of HIV monitoring and evaluation in South Africa**

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**Background**

In South Africa, the integration of management of health services at a decentralized district level within the authority of general health service (GHS) managers is a reform priority. The reforms promote administrative integration, i.e. transfer of administrative authority over disease control programmes (DCPs) from DCP managers to GHS managers and re-defining DCP manager roles from implementation to specialist support. Historically DCP activities at district level fall under the control of DCP managers and dedicated programme monitoring and evaluation (M&E) systems limit GHS managers’ access to data that they need for integrated management. Given the reform focus on administrative integration, research is needed to measure the extent to which GHS managers exercise administrative authority over DCP functions. This study addresses this gap, using the HIV programme M&E function as an exemplar.

**Materials and methods**

This study was conducted in two of South Africa’s nine provinces, involving interviews with 31 GHS and DCP managers. We adapted and applied the concept of ‘decision-space’ (traditionally used to measure transfer of administrative authority from higher to lower level managers). We defined ‘exercised authority’ over the HIV M&E function as performance of tasks to: a) oversee the production of HIV information [HIV data collection, collation and analysis], and b) use HIV information for monitoring services. Participants reported whether they performed specific tasks within each M&E domain (data collection, collation, analysis and use). Responses were scored within each domain and summed scores categorised as ‘low,’ ‘medium,’ or ‘high’ degree of exercised authority. We applied ordinal logistic regression to evaluate associations between various variables (actor type [DCP or GHS], capacity [training and experience] and HIV M&E knowledge) and the degree of exercised authority. We also assessed whether DCP actors played expected specialist support roles.

**Results**

Relative to DCP managers, GHS managers had lower M&E knowledge and exercised greater authority over the production of HIV information but less over using HIV information. Higher HIV M&E knowledge was associated with higher degrees of HIV information use. DCP and GHS manager roles overlap; few DCP managers played their expected specialist support role.

**Conclusions**

There has been a transfer of authority for overseeing the production of HIV information from DCP to GHS managers, but DCP managers still control the use of HIV information and rarely play expected specialist support roles. Actions are needed to integrate the use of DCP information within GHS managers’ roles.

**References**

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**P63**

**Health system preparedness for newborn care: a health facility assessment in rural Uganda**

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**Background**

Newborn deaths must be reduced to achieve Millennium Development Goal four. Health facilities have a critical role to play in the fight to save the 2.9 million newborns that die in the world every year. It is not clear if health facilities in rural Uganda have the capacity to care for newborns.

**Objective**

To assess the capacity of health facilities to care for newborns in Iganga and Mayuge districts in eastern Uganda for the three main mortality causes: preterm/ low birth weight, asphyxia and sepsis.

**Materials and methods**

Between July and August 2013, a cross-sectional study was conducted among 92 health workers, and in 20 health facilities: one hospital and19 primary health care centres in areas where some health facility strengthening for newborn care had occurred. The indicators measured included: services offered, equipment, drugs and supplies, documentation, trained staff and supervision, health worker knowledge and resuscitation skills for newborns. STATA version 10 was used to analyze the data and availability scores were generated by using the Service Availability and Readiness Assessment, a World Health Organisation methodology for measuring health systems strengthening.

BMC Health Services Research 2014, 14(Suppl 2):P63
Results Fifteen of the 20 health facilities offered newborn care. First level facilities (Level II) had the lowest (31%) availability score for resuscitation equipment compared to the hospital/level IV (71%) and those at level III (74%). None of the Level II facilities offered kangaroo mother care services for preterm/low birth weight, while the availability score for this service was 67% for level III and 100% for the hospital/level IV. Availability score for newborn sepsis drugs was 8% for level II, (67%) and (75%) for level III and the hospital/level IV respectively. Over two thirds (33/50, 66%) of the health workers were considered knowledgeable in newborn care, but less than a half (17/42, 41%) skilled in newborn resuscitation.

Conclusions Health workers had good knowledge but modest skills for newborn care. Overall, higher level health facilities were more prepared for newborn care than the first level ones. All first level facilities should be enabled by policy and in practice to treat newborn sepsis. All health facilities that conduct deliveries irrespective of the level of service should also provide good quality preterm/low birth weight and asphyxia care.

P64 Leadership, safety culture and patient safety in hospitals: in search of evidence
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BMC Health Services Research 2014, 14(Suppl 2):P64

Background At least since the publication of “To Err is Human” in the year 2000 we all know that hospitals could be safer than they are [1]. In the meantime the knowledge about patient safety and evidence based safety practices grew substantially but too often these practices do not reach the patients [2]. Evidence based medicine, nursing and therapy are advancing but the implementation gap seems also to be growing [3]. Are evidence based leadership and an appropriate safety culture the solution to this implementation gap since “more than enough evidence exists to prompt decisive action” [4]? Do we suffer blind spots on the roles of leadership and safety culture? The first objective of this study was to review theories, models and empirical evidence of the functions, roles and interdependencies of leadership practices, safety cultures and patient safety outcomes in hospitals. Secondly, empirical studies will be conducted to test and validate the framework.

Materials and methods Various databases and gray literature have been searched and the selected publications systematically reviewed. A framework for evidence based leadership has been developed as well as discussed with and validated by patient safety experts and organizational scientists.

Results The theoretical model derived from the literature and the workshops shows the respective influences and interdependencies between leadership practices, safety cultures and patient safety outcomes. A framework for evidence based leadership has been developed.

Conclusions The model seems to be functional as a framework for empirical studies to analyse the influences and interdependencies between local leadership practices, safety cultures and patient safety outcomes.

References

P65 Inclusion of private sector in district health systems; case study of private drug shops implementing modified Integrated Community Case Management (iCCM) strategy in Rural Uganda
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BMC Health Services Research 2014, 14(Suppl 2):P65

Background Uganda Ministry of Health passed the Public Private Partnership for Health (PPPH) policy to strengthen the health system by leveraging strategic advantages of private healthcare providers [1]. The National Malaria program has gone further to develop a malaria case management strategy through a multi-stakeholder consultative process [2]. Makerere University School of Public Health (MakSPH) partnered with Mbarara district to implement the iCCM strategy in private licensed drug shops in rural areas. The partnership aimed to increase access to quality medicines and point of care diagnostics for child febrile illnesses, minimize excess use of antimicrobials and antibiotics, share information of cases diagnosed and treated at the drug shops and promote child survival.

Methods This was a plausibility design study with baseline and end-line assessments in the intervention and comparison districts. The intervention was introducing modified iCCM strategy at licensed drug shops in the rural Mbarara district. This involved training the drug shop attendants on how to manage febrile illnesses in under-fives using the standardised sick child job aid, supply of subsidized medicines and diagnostics, integration of drug shop health information system with district HMIS and routine support supervision. Qualitative interviews to explore views, attitudes and perceptions of various stakeholders and wider health systems effects of intervention are ongoing. Ethical approval was sought and granted.

Results Baseline surveys show that drug shops provide care to over 50% of child febrile illnesses in rural Uganda. 96 drug shop attendants were trained and hence 69 drug shops in rural counties of Mbarara district are implementing the modified iCCM strategy. Continuous monitoring and support supervision has started to explore how private drug shops can be integrated into the district health system. Drug seller performance and attrition, linkages with nearest public health facility and monthly reporting on pre-determined HMIS indicators are being examined.

Conclusion Private drug shops provide healthcare to under-five febrile children as first point of contact in rural areas. Their recognition and integration into district health systems will increase penetration of life saving interventions especially for the most vulnerable populations.

References

P67 Norwegian guidelines for persons with concurrent mental disorders and substance use disorders: assessment, treatment and rehabilitation- How to bridge gaps between current practice and clinical guidelines?
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BMC Health Services Research 2014, 14(Suppl 2):P67

Background There is a lack of experience in implementing clinical guidelines in Norway and many guidelines are put into practice without an implementation plan. This presentation is part of a project dealing with developing strategies for implementing a clinical guideline for persons with concurrent mental disorders and substance use disorders.

Purpose To describe the different tools that have been developed to implement the guideline and thereby bridge the gaps between current practice and clinical guidelines.
Materials and methods We have put an emphasis on leaders, patients/ families and service providers. For leaders we have established a toolbox for managers including equipment for doing clinical Audits and a practical guide for how to change practice. Representatives from patients organizations have selected and promoted the 10 most important recommendations. An electronic version of the guideline has been developed which in addition to the national dual diagnosis competence training program, are important tools for service providers.

Results The national training programme has gathered around 200 to 300 service providers, leaders and users on 17 locations in Norway. Unfortunately, mental health workers and leaders are more absent from the seminars than addiction workers. One important objective of our implementation efforts is that health care workers should participate in continuous training using our internet-based educational training packages like video lectures, instruction videos, screening tools etc. The 10 user selected recommendation have been widely distributed and might also be downloaded as Apps. The clinical Audits have been used in several institutions and departments and we are now developing a community and user Audit. We will present some finding on the use of our net tools and Apps during the presentation.

Conclusion In an effort to bridge the GAP between the guideline recommendations and current practice, several measures have been put in place targeting leaders, service providers and users. One of the hurdles we have faced in the implementation is security systems and data programs used by the health authorities making access to our net based tools difficult.

P68 Predictive factors for medical resource utilization among Taiwan’s psychiatric inpatients
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Background Taiwan launched a single-payer National Health Insurance program. The prevalence of psychiatric disorders has increased gradually since the implementation of this program. This could be because the national health insurance removed barriers to health care for the heavily insured, enabling them more access to that health care. Determining the factors that contribute to medical utilization for psychiatric patients could provide evidence for how the mental health system should target resources and care management to avoid social and cost crises. The purpose of the study is to explore the predictors for medical utilization for psychiatric inpatients.

Materials and methods The present study consisted of 974 inpatients discharged from a public psychiatric hospital in Taiwan in 2005. Demographic characteristics, discharge diagnoses, and medical utilizations were retrieved from the inpatient claim data of the National Health Insurance Database. Multivariate logistic regression models were performed to identify significant predictors for length of stay (LOS) and medical charge.

Results A median LOS of 40.0 days and median medical charges of US $3104.10 were reported. A greater likelihood of high medical utilization was found among patients who were exempt from making co-payments, were diagnosed with schizophrenia or depression, had a co-morbidity factor, or who came from emergency visits. There was no significant association between re-admission and increased LOS or medical charges.

Conclusions The study found that demographics, disease characteristics and insurance policies were all associated with high medical utilization. The study may be useful in future assessment of whether the medical resources available in treating psychiatric patients are optimally allocated.

P69 Job preferences of primary health care workers in rural China: application of Discrete Choice Experiment
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Background The shortage of qualified health workers in primary health care (PHC) in rural China has been a long-term challenge in China. Health workers’ job preferences and job choices are determined by various external and intrinsic factors. These factors are constantly changing along with the health system reform. This study aims to quantitatively measure job preferences of health workers in rural areas in the context of health system reform in China.

Materials and methods A Discrete Choice Experiment (DCE) was applied to study the determinants of health workers’ job preferences. Using a multi-stage stratified sampling process, 228 doctors and 165 nurses were selected from 45 township health centers in 3 provinces in China. 6 job attributes were included in the DCE design (working location, income, permanent position, training opportunities, children’s education opportunities, and career development). Questionnaires with 16 questions were self-administered in August 2013. A conditional logit model was applied to analyze the DCE data.

Results Income level was the most important factor for health workers’ attraction and retention (OR=7.0 when comparing 8000 RMB versus 2000 RMB per month). The second important factor was education opportunities for their children (OR=4.3 for females and 2.9 for males). The third important factor was a permanent position (OR=2.7).

Conclusions Extrinsic factors play dominant role in attracting and retaining PHC workers in rural China. Government should take a leading role in response to the inequitable distribution of health workers, especially in resource poor settings where health workers’ income are far beyond a satisfactory level. Application of the DCE should be in close collaboration with relevant policy makers for the research to have policy engagement.

P70 Five-hundred years of medicine gone to waste? Negotiating intercultural health policy in Ecuador
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Background In Ecuador, access to maternity services remains significantly lower amongst indigenous women compared with non-indigenous women partly due to cultural barriers [1]. A hospital in Ecuador where the indigenous rights movement is particularly strong implemented the Vertical Birth (VB) policy to increase indigenous women’s access to maternity services by adapting services to the local culture. This included conducting upright deliveries, introducing Traditional Birth Attendants (TBAs) and making physical adaptations to hospital facilities.

Materials and methods This qualitative study explored the delivery of maternity services for indigenous women in an Ecuadorian hospital. Data was collected through observation, in-depth interviews, a focus group discussion, and documentation review (e.g. hospital routine data). 40 interviews were conducted with Health Workers (HWs), managers, and policy-makers involved in maternal health at the field hospital. Data analysis was guided by grounded theory and drew highly on concepts of “street-level bureaucracy” to explore implementation.

Results Actors’ values motivated their support or opposition to the VB policy and conflict ensued. Managers, policy-makers, indigenous actors and a minority of HWS supported the VB policy. For this group, improving HWs’ attitudes towards indigenous women, widely perceived as discriminatory, was key to promote equitable access to services. Most HWS initially resisted the VB policy because they were concerned about the clinical implications they attributed to the VB policy (e.g. postpartum haemorrhage and vaginal tears) and...
the tensions that stem from working alongside TBAs (e.g. conflicting advice given to patients). Nonetheless, TBAs played a crucial role in the WB implementation; they became women's advocates and helped improve HWs' attitudes towards indigenous women. HWs effectively modified the WB policy and developed coping strategies to deal with their concerns. Managers accepted these as a compromise to enable implementation. Implementation also succeeded because those supporting the WB policy were more powerful and because HWs concerned over clinical complications subsided.

Conclusions Whilst highly controversial, intercultural health policies such as the WB policy have the potential to improve maternity services for indigenous women. The WB implementation was heavily shaped by HWs' values and resulted for indigenous women.

Supporting the WB policy were more powerful and because HWs modified the WB policy and developed coping strategies to deal with the tensions that stem from working alongside TBAs (e.g. conflicting advice given to patients). Nonetheless, TBAs played a crucial role in the WB implementation; they became women's advocates and helped improve HWs' attitudes towards indigenous women. HWs effectively modified the WB policy and developed coping strategies to deal with their concerns. Managers accepted these as a compromise to enable implementation. Implementation also succeeded because those supporting the WB policy were more powerful and because HWs concerned over clinical complications subsided.

Conclusions Whilst highly controversial, intercultural health policies such as the WB policy have the potential to improve maternity services for indigenous women.

The WB implementation was heavily shaped by HWs' values and resulted from an ongoing negotiation between HWs and managers.

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Reference

P71
Health professionals: leaving their countries to migrate to the United States and Canada
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BMC Health Services Research 2014, 14(Suppl 2):P71

Background The United States and Canada are experiencing an increased demand for licensed health professionals; currently both have shortages and maldistribution of licensed health professionals. The factor having the greatest impact in creating the shortage is the increased demand for services due to an aging population. The demand for technological advancements and too few licensed health professionals being trained also contribute to the increased demand. The health professional shortage is forecast to last at least 15 years. Neither country's educational pipeline currently projects enough new graduates to meet the demand. Simultaneously, a majority of countries around the world also are experiencing a shortage and can ill afford to lose any of their licensed health professionals. However, health professionals from other countries continue to be relied on to meet part of the demand.

Materials and methods As part of a larger European Union based project, an online survey collected information from over 500 licensed health professionals who have migrated to either the United States or Canada. Links to the survey were placed on web sites of health professional organizations. The survey was open to respondents for sixty days.

Results Survey results reveal that the reason health professionals come to the United States and Canada are as follows: better working conditions (US 88%, CA 78%), higher earnings (35%,42%), better employment benefits (70%,30%), job growth opportunities (60%,51%), training and educational advancement (74%,60%), resources and advanced technologies available to complete job tasks (46%,34%), improved lifestyle conditions (86%,100%), political stability (46%,52%), friends or family live there (66%,38%). Data was also collected on reasons for leaving home country.

Conclusions Numerous issues should be addressed that create difficulties for immigrant health professionals. These include, but are not limited to, getting licenses approved, partnering with foreign universities to train health professionals, and providing educational grants for immigrants at universities (in US or Canada). Additional strategies that must be employed are increasing the number of health professionals trained, effectively using advanced technologies such as telemedicine, and task shifting among health professionals. While doing so, both countries must make every effort to adhere to the World Health Organization's Code of Practice on the International Recruitment of Health Personnel.

P72
Turnover of nurse anesthetists: the similarities and differences between countries
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BMC Health Services Research 2014, 14(Suppl 2):P72

Background For more than a decade, both the United States (US) and the Netherlands have been struggling to control health care costs. The demand for nurse anesthetists, or in the US, Certified Registered Nurse Anesthetists (CRNA), has increased in both countries due to the increased substitution of nurse anesthetists for anesthesiologists in surgery, with the goal of reducing health care costs. Additionally, the aging of the population in both countries has increased the demand for health care services. The health care systems and related outcomes of the two countries were quite dissimilar. The US relies more on private insurance than other high-income countries. Previously the Netherlands provided care for all citizens through non-competing regional sickness funds. These laws changed in 2006, moving the Netherlands' system closer to the US system.

Materials and methods An online self-reporting questionnaire survey was performed among Dutch nurse anesthetists in 2007 and among US CRNAs in 2013. The questionnaires included validated scales to assess turnover intention, work climate, work context factors, burnout, job satisfaction, and personality dimensions.

Results The study of job retention of nurse anesthetists in The Netherlands found that: 1) burnout was predicted by personality traits and work climate; 2) job satisfaction was predicted by work climate and context, and 3) turnover intention was predicted by burnout and job satisfaction. The newer data collected from US CRNAs results mirror the findings on the Netherlands data. For CRNAs in the US, burnout is predicted by both personality and work climate factors; job satisfaction is predicted by work climate and context factors, and turnover is predicted by both burnout and job satisfaction.

Conclusions These results suggest that the work climate and work context have the same impact on job satisfaction, and therefore on turnover intentions, across different health system types, different cultures, and different countries. Similarly, personality traits and work climate have the same impact on burnout, and therefore turnover intentions of nurse anesthetists. These findings make an important contribution because they suggest that healthcare management interventions to retain highly trained and skilled health professionals may be generalized across country boundaries and health system types.

P73
Geographical data for the definition of theoretical STEMI patient base for hospital emergency departments in the Lazio region, Italy
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BMC Health Services Research 2014, 14(Suppl 2):P73

Background Spatial analysis and geographical data have been used increasingly in recent years to identify the relationship between supply and demand in Health Services. The aim of the study is to define a theoretical STEMI patient base for hospital Emergency Departments (ED) of the Lazio region.

Methods Theoretical STEMI patient bases were defined taking into account 4 parameters:
• travel time (minutes), from each census-block of the region to each ED, during the night and during the most traffic congested hours;
• the median waiting time between the access and taking care of patients with white, green and yellow triage were calculated for each ED, as a proxy of the ED’s workload;
• the number of hospital admissions in 2012, as a proxy of hospital size;
• % of patients treated with PCI within 90 minutes, as a proxy of hospital performance.
All parameters were used to assign a score to each ED and a weight was assigned to each parameter. A weighted average was calculated and each census-block was assigned to the ED with the highest score. Moreover, two constraints were established: time travel from census-block to ED must be lower than 20 minutes; ED must have hemodynamic equipment.

Results In the Lazio region there are 31,988 census-blocks and 50 hospital ED (46 of them are generic and 20 with hemodynamic). 27% of the regional population (10,473 census-blocks) do not reach an ED hospital ED (46 of them are generic and 20 with hemodynamic) in 20 minutes during the night; these census-blocks are mainly situated outside the city of Rome. Taking into account the most traffic congested hours during the day, the percentage of regional population not covered by an adequate health service increased to 42% (15,062 census-blocks), including some census-blocks located in the city of Rome.

Conclusions Geographic data and travel time from home to hospital are useful to identify theoretical STEMI patient bases, data on traffic service increased to 42% (15,062 census-blocks), including some census-blocks located in the city of Rome.

P74 The care pathway for hip fracture from acute phase to rehabilitation
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Background Hip fractures are the leading cause of hospitalization for injuries among the elderly population and have a substantial impact on both the patient and the healthcare system. The care pathway for a person with a disability goes through a set of integrated and multidisciplinary activities and care interventions. Starting with timely surgery in the acute phase, followed by adequate rehabilitation assistance and ending with territorial assistance.

Aims The aim of the study is to evaluate the association between early surgery and access to rehabilitation of elderly patients with hip fracture.

Materials and methods We identified elderly patients hospitalised for hip fracture, between 1 January 2012 and 31 October 2012 using Hospital Information System (HIS) of the Lazio region. The outcome considered was the access to rehabilitation within 60 days from the date of hospital discharge. Rehabilitation access was derived from Admission/Discharge Rehabilitation Report (ADRR), for hospital rehabilitation, and from Residential Rehabilitation Information System (RRIS).

We considered clinical variables, residence and level of education as potential risk factors of the outcome. The factors significantly associated with the outcome were age, gender, comorbidities (RRIS), and acute medical condition (ADRR). We used logistic regression to calculate adjusted risks ratios (RR). Then, we evaluated the association between the access to rehabilitation and the specific comorbidities and acute medical condition using a multivariate regression model.

Results We selected 5,030 patients aged 65+ hospitalised for hip fracture in Lazio region, 59% with an access to rehabilitative care within 60 days from discharge. The access to rehabilitation was less likely for older patients (adjusted RR=0.74, p<0.001), for patients with a longer acute event hospital stay (adjusted RR=0.74, p<0.001) and for patients with senile dementia (adjusted RR=0.66, p<0.001). By contrast, the probability was higher for patient who had surgery within 48h (adjusted RR=2.60, p<0.001) and for residents in Rome (adjusted RR=1.24 p<0.001).

The level of education seems to be negatively associated with the outcome (adjusted RR=0.79 p<0.05 for patients with high level), probably because patients with a higher level of education could more easily obtain access to private services.

Conclusions Despite the fact that following hip fracture rehabilitation should involve all patients, in the Lazio region the percentage of access to rehabilitation within 60 days from hospital discharge is 59%. Access to rehabilitation is strongly dependent on age, clinical characteristics and acute hospital care; in particular, waiting time for surgical treatment is strongly correlated with access to rehabilitation. This could suggest that the care pathway evaluation should take into account the association between the acute and rehabilitation phase.

P75 Putting the human into health systems: achieving functional integration of service delivery in Kenya and Swaziland
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Background The Integra Initiative has evaluated different models of integrating FP/PNC and HIV testing and treatment services in Kenya and Swaziland. Human and physical resource integration (“structural” integration) is the usual outcome measure of “successful” service integration. Integra research has shown that in fact functional integration (clients actually receiving integrated care) does not necessarily follow. Much depends on the actions of individual providers and their managers in combination with systems and other factors. This paper provides a meta-analysis from a range of Integra data to investigate the human factors influencing successful “functional” service integration.

Materials and methods Integra is a multi-method, non-randomized, pre-post intervention trial. This presentation draws on three sets of data from 42 facilities in Kenya and Swaziland:

1) structured surveys with providers analysed using Stata 11.2;
2) in-depth interviews with 56 providers coded using Nvivo 8; analyzed using thematic analysis.
3) “contextual” data that were collected on other activities at study facilities relating to integration that occurred during the study period.

By triangulation of the data, we present case studies of successful clinics to analyze factors facilitating successful functional integration.

Results Qualitative and quantitative data indicate that providers at high-functioning integrated clinics perceived improved technical quality, service efficiency and cost-benefits but also noted increases in workloads, less quality time with clients and occupational stress. Despite the challenges, many providers found ways to cope - through better team-working and load-sharing which facilitated better integration. Providers valued skills enhancement, more variety and challenge in their work and better job satisfaction through increased client-satisfaction.

Staff numbers are a critical issue but also how roles are shared between them as well as the relevance of their skills to their allotted tasks. Qualitative data further highlight the importance of facility management, supervisory support and innovation for on the job training and mentorship of providers. Contextual data show how donor/NGO activities and unilateral actions by facility managers can both support and impede integration.

Conclusion Most staff are supportive of integration but formal support mechanisms are needed to help providers cope with high stress and manage increased workloads. Lessons can be learned from providers reporting good teamwork to cope with increased workload and waiting times. Achieving functional integration requires attention to the structures and mechanisms in place to support both managers and frontline providers. Consultation with health care workers themselves is essential to improve integrated health systems that are people-centred.
policy-making lies within a spectrum of expert knowledge through scientifically generated information. Different actors provide varying degrees of support for and use of different types of evidence in policy development. Since not all forms of evidence share an equal validity or weighting for policy-makers, it is important to understand the key factors that influence their choice of evidence.

**Materials and methods** A retrospective cross-sectional study was carried out at the national level in Nigeria. A case-study approach was used and the Nigerian Integrated Maternal Newborn and Child Health (IMNCH) policy-making framework was selected because it met the criteria of increasing significance to health research funders across the world. Given that the concept of evidence-based practice and policy is growing in significance, the dissemination of this study (methods and results) will help to fill a gap in knowledge in three areas: the role of a public research funding agency in facilitating KT, the outcomes and impacts KT funding interventions, and how KT can best be evaluated.

**Results** The breadth of evidence used was wide, ranging from expert opinions to systematic reviews. The choice of different types of evidence was found to overlap across actor categories. Key influences on actors’ choice of evidence were: (i) perceived robustness of evidence was found to overlap across actor categories; (ii) roles in evidence process, i.e., their degree and level of participation in evidence generation and dissemination, vis-à-vis their role in the policy process; and (iii) contextual factors such as global agenda and influence, timeline for strategy development, availability of resources for evidence generation, and lessons from previously unsuccessful policies/plans.

**Conclusion** Actors’ choice of evidence in policy making is influenced not only by the characteristics of evidence, but on the roles these actors play in the process, their power to influence the policy, and the context in which evidence is used.

**P78**

Clinical research and leadership training program as a knowledge translation initiative across an Australian health care service

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Health professionals need to be integrated more effectively in clinical research initiatives to ensure that research addresses key clinical needs and provides practical, implementable solutions at the coal face of care. The recent McKeon review of Health and Medical Research in Australia suggested that the best way to achieve practical and implementable solutions in healthcare is to involve the health-delivery workforce in research to ensure that research addresses key clinical needs1. Through a partnership with Monash Health and Monash University, goals of the Monash Centre for Health Research and Implementation (MCHRI) are to deliver clinical research and leadership training to build capacity in implementation and support clinical research at Monash Health. Here we describe the informative phase of a broader program to enable and support health professionals at Monash Health who do not have a research background, to engage in evidence and lead research to improve healthcare outcomes. As one of the largest health services in Australia, comprising more than 40 community services and hospitals across Melbourne, Monash Health provides the ideal setting. The broader program is based on a framework that has been shown to lead to successful implementation and long-term sustainability and draws upon knowledge translation principles, as well as medical education frameworks. The study design incorporates mixed methods within a collaborative action research approach involving multidisciplinary researchers across MCHRI, Monash Health and Monash University. Ethics approval has been obtained and literature review completed. Within the informative phase, an online survey and semi-structured interviews are being conducted to explore knowledge, perceptions, experience and training preferences in clinical research methods, evidence based principles and research leadership. We anticipate information from a representative group of people working across different areas and at different levels at Monash Health. The findings will be used to develop a dedicated clinical research and leadership training program. The training program will support Monash Health staff to up-skill or enhance skills to conduct rigorous research; engage and lead multidisciplinary, collaborative teams; and to use research to guide practice, as well as identify and address gaps in clinical research.

**Reference**

The widespread epidemiological shift from acute to chronic illnesses in the population has been accompanied by an increasing recognition of the need to simultaneously address the interacting physical, mental health and social needs of patients. A fragmented health care system built around single diseases and institutions cannot effectively address these complex needs. Health system reform is necessary to achieve this but is challenged by a lack of evidence on how to effectively restructure the system and care for these complex patients.

Funded by the Ontario Ministry of Health and Long-Term Care (MOHLTC) in Canada, the Building Bridges to Integrate Care (BRIDGES) program at the University of Toronto is jointly led by the Departments of Medicine, Psychiatry and Family and Community Medicine. Led by academics, BRIDGES partners with both the government and providers to address this evidence gap by generating local knowledge on ways in which primary, specialty, hospital and community care may be integrated for patients with complex physical, mental health and social needs. The collaboration with academics supports project teams in developing models that incorporate the best available evidence, engaging in model refinement activities, and rigorously applying qualitative and quantitative evaluation methods. The partnership between academics and government lends credibility to the findings and provides a mechanism through which information from project teams may be consolidated and disseminated to the government to influence work on health system structure and policy reform.

To date, nine models of integrated care delivery have partnered with BRIDGES to form a collaborative that has a common focus, adopts similar evaluation approaches, and shares important lessons. Work with these models has highlighted the difficulties of generating and implementing evidence on care integration. Challenges are present in each stage of model design, implementation, improvement, evaluation, scale and dissemination and are reflected in the form of structural, policy, resource and cultural barriers. In the absence of widespread evidence on how to overcome each of these barriers, the BRIDGES model also provides a knowledge translation platform through which teams interact, share learnings and develop a community of practice where health professionals, researchers and government stakeholders learn from each other’s experiences and work together towards an improved, integrated health care system.

Ongoing work is needed to identify effective models of care for those with complex medical and social needs. BRIDGES is one approach to addressing this evidence gap by generating evidence on effective care integration for this population.

**Materials and methods** We used a mixed methods case study design, and sampled government District Hospitals, Health Posts and Primary Health Care Centres in three districts of Western Nepal with high and low numbers of locally contracted nurses. We interviewed nurses using the ‘Job Satisfaction Survey’ questionnaire. We also conducted qualitative in-depth interviews with nurses, and in-charges, and focus group discussions with HFMCs and women’s groups.

**Results** We found few staff nurses in post, and it was difficult to recruit this cadre in rural areas. We found that contracted nurses tended to be younger and less experienced. Many were from the local area or had some family connection nearby. HFMC contracted nurses had lower salaries, and worse terms and conditions than permanent nurses. They were usually expected to work 24 hours a day, seven days a week. They were motivated by the lack of employment opportunities and the need to maintain and develop their skills. Community members and in-charges felt that contract nurses were more motivated and worked harder than permanent nurses.

**Conclusions** In order to meet millennium goals for maternal and child health, it is essential to increase access to skilled birth attendants in rural areas. Although the strategy of local recruitment of nurses may be enabling 24 hour service provision, locally contracted nurses may find it difficult to deal with complicated deliveries without adequate support. Their lack of job security, and difficult terms and conditions may not foster longer-term retention in rural areas. We recommend that local recruitment of nurses should be part of a package of support to rural health facilities in order to increase retention.

**P81**

**TDF (Theoretical Domain Framework): how inclusive are TDF domains and constructs compared to other tools for assessing barriers to change?**

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**BMC Health Services Research 2014, 14(Suppl 2):P81**

**Background** Theoretical Domain Framework (TDF) provides an integrative conceptual model for assessing barriers to change. The TDF questionnaire has been applied by healthcare researchers in several countries for assessing barriers to performance improvement implying its possible usefulness in behavior modification.

**Aim** The purpose of this study is to review published literature on barriers to change using specific tools created without adhering to the TDF theoretical framework, and to investigate whether these tools incorporate domains and constructs of the TDF questionnaire.

**Materials and methods** We conducted a systematic literature review. We searched for papers in MEDLINE OVIDSP, PubMed, CINAHL, PsycINFO (that includes full text from PsycARTICLES), EBSCO Databases: Academic Search Complete and Google Scholar from beginning until April 2014.

**Selection criteria** We included all papers that investigated barriers to change in health-related behavior or changing practice in health-related workplaces regardless of study design. Only papers published in English were included. We included in our review manuscripts that included the questionnaires either as attachment or in the content of the article. Duplicate studies were eliminated from the review by comparing authors’ names, type and location of study.

**Data abstraction** Study review and data abstraction were conducted by two reviewers working independently. Disagreements were resolved by discussion and referring unresolved issues to a third person.

**Results** Of 352 papers initially identified, 50 papers were selected for final review. The average number of items in the questionnaires assessing barriers was 19.2. In total the 50 questionnaires included 961 items, out of which 96.8% (930 out of 961) were covered by TDF. The “Environmental Context and Resources”, “Beliefs about consequences” and “Social Influence” were the domains of TDF that most frequently studied in the selected papers: 30.2%, 12.4% and 10.3% respectively.

**Conclusions** This study confirms the validity of TDF framework to assess barriers to change: only 2.2% of 961 items identified were not
covered by the TDF questionnaire. However, unclear boundaries between domains and the difficulty in identifying the appropriate construct were two issues identified that may be worth considering to improve the framework.

References Available upon request.

P82

Towards evidence-based practice in the social services and older people care: from the line managers’ perspective

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Background Leadership is essential for successful implementation of evidence-based practice (EBP) [1]. Line managers, i.e. the managerial level directly above employees, are crucial in this process. However, little empirical research has been carried out on their role in the implementation of evidence within social care. The aim of this study was to explore the role of line managers in the implementation of EBP in the social services and older people care.

Methods and methods Interviews were carried out with a total of 28 line managers within social and older people care services in seven Swedish municipalities (the local authorities responsible for the provision of these services). A purposeful sampling was performed to ensure diversity among the municipalities in terms of size, geographical location and previous experience with EBP. The interviews were analysed with thematic analysis by two of the authors independently.

Results Line managers perceive their role as key when implementing EBP. The extent to which they felt responsible for the implementation process did, however, differ between the social services and older people care. Line managers working within social services portrayed a more positive attitude towards and a more active role in implementing EBP compared to line managers in older people care. Overall, managers working within the social services were generally given more authority from senior management to implement changes in practice. Line managers within older people care were seldom involved in any decision-making concerning implementation of EBP and described their role as solely communicating decisions to their staff. The line managers in both care settings felt alone in the implementation of EBP, and received limited support from the other key actors in their organisation. The implementation process was usually performed ad hoc rather than systematically. Analysis of needs and goals according to the local context were rarely explored.

Conclusions Line managers consider themselves as central in the implementation of EBP. Variations exist concerning how line managers in the social services and older people care view and implement EBP, and thus different types of support in improving working evidence-based is required. This research contributes to understanding the perspective of line managers, who are often responsible for the translation of evidence into practice.

Reference


P83

Development of a theoretically based implementation protocol

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BMC Health Services Research 2014, 14(Suppl 2):P83

Background Internationally there is a gap between the development and delivery of professional pharmacy services. The fields of implementation science and knowledge translation have developed across disciplines with the objective of bringing evidence to practice. What appears necessary for success, but is not evident in implementation frameworks, is that core concepts should be considered for every implementation effort. A Generic Implementation Framework (GIF) was developed to illustrate these core concepts [1]. The framework consists of six components; process of implementation, domains (the innovation to be implemented and the context in which the implementation is to occur), influencing factors, strategies and interventions utilised to aid the process, and evaluations employed. The GIF may be utilised as a base for the development of implementation protocols or programs and then tailored for use, depending on the innovation, user, setting, discipline and objective. The GIF was operationalized for community pharmacy as the Framework for the Implementation of Pharmacy Services (FISpH) and practically applied to design an implementation study.

Methods The FISpH framework was used to develop an implementation study protocol for a professional pharmacy service in Spain, medication review with follow-up. The implementation study is a hybrid design [2] consisting of a 3 month pilot and a 15 month main study in 100 pharmacies across 10 Spanish provinces.

Results Implementation strategies employed include interactive training sessions with pharmacy owners and service providers, monthly outreach facilitator visits and the assignment of an internal pharmacy champion to take charge of the implementation team as implementation progresses. The facilitators’ and champions’ role includes analyzing barriers and facilitators and subsequent tailoring of interventions to overcome or utilize the realized influencing factors. Outcomes to be measured are the movement of pharmacies through implementation stages, service benefits, reach, fidelity and integration.

Conclusion The Generic Implementation Framework appears to be an applicable base to tailor to pharmacy practice and subsequently develop implementation protocols. The consequent Framework for Implementation of Services in Pharmacy is well understood by stakeholders at policy, professional organization, pharmacy owner and employee staff levels.

References


P84

Cross sectional study of drug substitution in community pharmacies in the Ugandan capital city

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BMC Health Services Research 2014, 14(Suppl 2):P84

Background The escalating cost of pharmaceuticals is a global challenge and major hindrance to access to medicines in developing countries. Half of the Ugandan population lacks reliable access to essential medicines and out of pocket expenditure by patients is as high as 80% [1]. Generic medicines provide an opportunity for savings on medicine expenditure due to their cheaper price [2,3]. Generic substitution has been recommended by World Health Organisation and is widely practised in Africa as long as the prescriber does not forbid nor the patient decline [4]. Therefore, this study was conducted to determine the nature and prevalence of drug substitution in community pharmacies in Kampala, the capital city of Uganda. Dispensers’ perceptions were also explored.

Materials and methods It was a cross sectional descriptive study employing two data collection tools; a structured questionnaire administered to dispensers in a random sample of community pharmacies and simulated patients presenting with prescriptions developed and validated by the research team.
Results Up to 133 community pharmacies in Kampala city were included in the study. Almost all (n=127, 96%) community pharmacies practised drug substitution. The most common forms of drug substitution were innovator medicine to generic medicine (85%) and generic medicine to other generic medicine (82%). Up to 92% of the pharmacies substitute "over the counter" drugs while 56% substitute medicines on prescription. Only 24% of the pharmacies did not consult the prescriber before drug substitution and majority (75%) considered the price of the drug before drug substitution. Knowledge of drug substitution policy was low and many (61%) dispensers thought Uganda has no national policy on drug substitution.

Conclusion Drug substitution involving both innovator medicine to generic medicine and generic to generic medicines is wide spread in community pharmacies in Kampala city.

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References

P85
Developing a clinical practice guideline implementation strategy based on needs, evidence and theory
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BMC Health Services Research 2014, 14(Suppl 2):P85

Background Clinical practice guidelines (CPGs) are used to standardize care according to evidence-based recommendations. However, the implementation of CPGs in the real world varies; a possible reason for this is the lack of a systematic approach to the implementation of CPGs. We, therefore, aimed to develop an intervention to improve the implementation of a local hypertension CPG based on the needs of healthcare professionals (HCPs), best available evidence, and theories.

Materials and methods This study was conducted in 2013 at an urban hospital-based primary care clinic in Malaysia which used a paper-based medical record system. The 2008 national CPG on hypertension was used for the research. The intervention was developed based on: (1) findings from an audit and needs assessment study involving the PCPs, pharmacists, nurses and the administrators; (2) literature review of the effectiveness of various CPG implementation strategies in primary care; and (3) the theory of planned behaviour.

The research team convened to summarise the key findings from the needs assessment study and reached a consensus on two major issues: lack of accessibility to the CPG and collaboration among the HCPs. The literature review highlighted the need for a multi-faceted strategy which should include dissemination and implementation.

Results A need-, evidence- and theory-based intervention was developed after a few iterations and feedback from the users. It comprised several components. Firstly, two training sessions were conducted by two senior academicians to increase the PCPs’ knowledge on the assessments and treatment of hypertension based on the CPG. Secondly, a quick reference guide summarising key recommendations from the CPG was placed on table tops as well as on the computer screen of each consultation room for easy access and reference. Thirdly, prior to the consultation with the doctor, the patient completed a self-assessment form and this was followed by the measurement of anthropometric parameters by the nurses. Requisition forms for investigations recommended by the CPG were placed together with patient medical records for ease of access and to facilitate doctors in making a treatment decision. Finally, a personalized checklist was placed in the patient medical record to serve as a quick reference and reminder to the doctor and it included items such as cardiovascular risk assessment.

Conclusions This study showed that it is feasible to develop a CPG implementation strategy based on needs, evidence and theories. We are in the process of evaluating the intervention.

P86
Tools to manage the decision-making process in operating rooms
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BMC Health Services Research 2014, 14(Suppl 2):P86

Background This study aims to build tools to manage and support decision making processes in operating rooms and related units. Activity-based costing (ABC) was used in complement with performance measurement tools. The tools constructed were validated in five different hospitals in Chile; in this study we present the results from one of these hospitals.

Methods We analyzed and created a model to deal with and better manage current problems in operating rooms such as inefficiency in the use of resources, low productivity, extended waiting times, and the elevated costs associated with providing surgical services. By gathering data from the surgical process, we built a dictionary of activities, identified the cost-drivers and the cost object to trace the overhead cost using the ABC methodology. In combination with the information obtained we identified indicators to measure performance associated to operating room use, using eRisk software to simulate the optimum performance for continuous improvement.

Results Based on the application of the data we found a disparity between the actual hospital costs and public health care insurance coverage suggesting a need to improve operating room efficiency to achieve sustainability. We also found gaps between the observed and ideal performance indicators and noted that time is a major factor.

Conclusions The results of this study shows that implementing ABC and performance measurement tools lead to operational improvements and better strategic decisions about rationalizing services, and improve hospital self-management.

P87
Unique challenges experienced during the process of implementing mobile health information technology in developing countries
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BMC Health Services Research 2014, 14(Suppl 2):P87

Background Healthcare in developing countries faces a number of challenges due to economic constraints, poor infrastructure, a shortage of trained clinical staff, extreme climate and geographical barriers among others. Information and communication technologies are seen as one approach to address these issues and improve inequalities in healthcare facing low and middle income countries. In particular mobile Information Technology (IT) is being explored as an overarching framework due to its portability, flexibility, low cost, and widespread network coverage [1]. However implementing mobile IT in this context presents a number of unique barriers. Current research in this domain focuses on barriers of generic IT adoption without considering the specifics of mobile technology. Furthermore, there is a lack of emphasis on the different
phases of the implementation process and what barriers emerge during each of these.

Materials and methods The objective of this paper is to highlight barriers to mobile IT in resource poor settings during the various stages of implementation based on Cooper and Zmud’s [2] model of Technological Diffusion. The five phases of the model: initiation, adoption, adaptation, acceptance, routinization and infusion, are reviewed and empirical studies of mobile IT in developing countries related to each phase of the model are presented and discussed.

Results The study reveals that a number of unique cultural and technological factors, such as mobile technology that is not adapted to culturally ‘fit’ with low resource settings, computer illiteracy, unreliable energy supplies and poor network coverage in rural areas, can hinder mobile IT implementation in developing regions. Moreover, it highlights specific barriers of mobile IT at each stage of the implementation process.

Conclusions Mobile IT has the potential to address health inequalities and overcome resource constraints in developing countries. However specific barriers associated with this context need to be considered when implementing mobile technology. Mobile IT needs to be included as part of a larger healthcare strategy for it to be successful and sustainable as this helps overcome some of the barriers to implementation.

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References

P88 Implementing mobile information technology in clinical nursing education: how, why, when, where and what happened? Some answers from a review of the literature
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BMC Health Services Research 2014, 14(Suppl 2):P88

Background Clinical practice presents a variety of challenges for nursing students which can impact their learning and application of knowledge and skills. Their inexperience coupled with the lack of supervision and ad hoc nature of learning in clinical environments can reduce their hands-on skills and negatively impact patient care. New methods are needed to help nursing students and educators address the theory-practice gap [1]. Information and communication technologies (ICT) such as mobile devices are being proposed as one way to support nursing students in clinical practice as they provide instant access to evidence based information at the point of care [2]. Despite the advantages it offers implementing mobile technology in clinical nursing education has proved challenging. The literature review aims to investigate how, why, when and where hand-held devices have been utilised in clinical nursing education and what factors facilitated or hindered their use.

Materials and methods Online bibliographical databases including CINAHL, ERIC, MEDLINE, PubMed and The Cochrane Library were searched using a combination of key terms such as: mobile, handheld, personal digital assistant, PDA, smartphone, tablet computer, technology, nurses*, student, education, learning and training. Studies included in the review were primary research studies, published in English in peer reviewed journals between January 2000 and December 2013.

Results Of the 216 abstracts identified, 24 were included in the study. These articles highlight the homogeneity of mobile platforms currently in use, with personal digital assistants being the predominant device despite newer technologies being available. A variety of mobile applications and how they are used by nursing students in clinical practice is also summarised. Although a number of benefits to using mobile devices for clinical learning are identified these are limited by a multiplicity of socio-cultural barriers.

Conclusions Mobile technology has spawned a cultural shift creating continuous and pervasive access to data. These unique features can support nursing student to improve their knowledge, skills and clinical practice. However many barriers to implementing mobile devices still need to addressed before they become integrated into routine nursing practice.

Acknowledgements This study was funded by the Health Research Board (HRB) and University College Cork’s Presidents Award for Research into Innovative Forms of Teaching and Learning.

References

P89 Bridging Human Resources for Health (HRH) gaps by applying clinical mentoring in selected health facilities: evidence from Jigawa State in northern Nigeria
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BMC Health Services Research 2014, 14(Suppl 2):P89

Background In July 2012, a clinical mentoring intervention commenced in Jigawa State through collaboration between the Jigawa State Ministry of Health and the Partnership for Transforming Health Systems Phase 2 project. After 6 months, an evaluation was undertaken to assess whether clinical mentoring has benefits for the health workforce situation within the intervention health facilities as well as whether it improved maternal, newborn and child health service delivery in Jigawa State within northern Nigeria.

Materials and methods Multiple approaches to data collection were undertaken. Pretested interviewer-administered questionnaires were used to determine if there was an increase in the clinical knowledge levels of the mentored health workers after 6 months. Operational and service statistics of the intervention facilities were examined 6 months before the commencement of the clinical mentoring intervention as well as six months thereafter. Quantitative data was analyzed with SPSS version 20. In-depth interviews were undertaken with the clinical mentors and Jigawa State government health officials. Semi-structured interviews were undertaken with the mentored healthcare workers and health facility departmental heads for Obstetrics and Pediatrics. Qualitative data was audio-recorded, transcribed and thematically analyzed.

Results Significant improvements in the professional capacity of mentored health workers were observed by clinical mentors, heads of departments and the mentored health workers. Across five health facilities, over 90% of the 33 mentored health workers recorded increases in their knowledge test scores after a 6 months period suggesting an improvement in their clinical knowledge and skills. Maternal and newborn deaths decreased in three out of the five clinical mentoring health facilities while normal deliveries increased in two out of the five intervention health facilities. Best practices were introduced with the support of the clinical mentors such as appropriate baseline investigations for pediatric patients, the use of magnesium sulphate and misoprostol for the management of eclampsia and post-partum hemorrhage respectively as well as the use of ambulance for neonatal resuscitation to reduce neonatal mortality. Government health officials indicate that clinical mentoring has led to more emphasis on the need for health workers to provide better quality health care services.

Conclusions The study shows that clinical mentoring is beneficial for improving the knowledge and clinical skills of mentored health workers as well as improving health service statistics. The introduction of clinical mentoring into the Jigawa State health system has improved the capacity of the mentored health care workers to deliver better quality maternal, newborn and child health services.
**P90**

Increasing health equity and access to skilled birth delivery services for the poor through community-based health-care interventions: evidence from northern Nigeria

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*BMC Health Services Research* 2014, 14(Suppl 2):P90

**Background**

The Partnership for Transforming Health Systems Phase 2 (PATHS2) project introduced and supports community based interventions such as safe motherhood initiative demand side (SMID) and an emergency transport scheme within northern Nigeria. This study evaluates the effect of PATHS2’s community based interventions in addressing transportation as a barrier to accessing skilled birth delivery services in health facilities.

**Methods**

The PATHS2 project conducted baseline and midline surveys in 2009 and 2012 respectively to evaluate the impact of its health care interventions. Structured questionnaires were applied to respondents in randomly selected households within PATHS2’s intervention communities in Kano and Jigawa States during the baseline and midline surveys. The study respondents were categorized into five wealth quintiles using principal component analysis. Data analysis was undertaken using SPSS version 20.

**Results**

Within intervention communities in Kano and Jigawa States, the proportion of respondents in the poorest and second poorest wealth quintiles at baseline relative to midline who indicated that transportation is a barrier to accessing skilled birth delivery services decreased by 28% and 24% (p<0.001) for Kano State as well as 21% and 25% (p<0.001) for Jigawa State respectively. There were no significant decreases in the proportion of respondents who indicated that transportation is a barrier to accessing skilled birth delivery services among the middle to richest wealth quintiles in both States. Within rural intervention communities in Kano State, the proportion of respondents at baseline relative to midline who indicated that transportation is a barrier to accessing skilled birth delivery services decreased by 11.9% (p<0.001). According to multivariable logistic regression analysis, respondents within intervention communities in the poorest wealth quintiles (p=0.023; OR 3.40, 95% CI: 1.18-9.79) and second poorest wealth quintiles (p=0.019; OR 3.51, 95% CI: 1.23-10.10) in Jigawa State are about four times less likely to indicate that transportation is a barrier to accessing skilled birth delivery services. While respondents from rural intervention communities in Kano State are four times less likely to indicate that transportation is a barrier to accessing skilled birth delivery services (p=0.027; OR 3.80, 95% CI: 1.16-12.49) following the implementation of PATHS2’s community based interventions.

**Conclusions**

These findings demonstrate that PATHS2 is addressing the ‘transportation challenge’ as a barrier to accessing skilled birth delivery services, particularly for the poor. The results from PATHS2’s end-line survey in 2014 are expected to substantiate this evidence more strongly.

**P91**

Implementation of collaborative governance in cross-sector innovation and education networks: evidence from the National Health Service in England

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*BMC Health Services Research* 2014, 14(Suppl 2):P91

**Background**

Increasingly, health policy-makers and managers all over the world look for alternative forms of organisation and governance in order to add more value and quality to their health systems. In recent years, the central government in England mandated several cross-sector health initiatives based on collaborative governance arrangements. However, there is little empirical evidence that examines local implementation responses to such centrally-mandated collaborations.

**Materials and methods**

Data from the national study of Health Innovation and Education Clusters (HIECs) are used to provide the first comprehensive empirical evidence about the implementation of collaborative governance arrangements in cross-sector health networks in England. The study employed a mixed-methods approach, integrating both quantitative and qualitative data from a national survey of the entire population of HIEC directors (N=17; response rate = 100%), a group discussion with 7 HIEC directors, and 15 in-depth interviews with HIEC directors and chairs.

**Results**

The study provides a description and analysis of local implementation responses to the central government mandate to establish HIECs. The latter exemplify cross-sector health networks characterized by a vague mandate with the provision of a small amount of new resources. Our findings indicate that in the case of HIECs such a mandate resulted in the creation of rather fluid and informal partnerships, which over the period of three years made partial-to-full progress on governance activities and, in most cases, did not manage to become self-sustaining without government funding.

**Conclusion**

This study has produced valuable insights into the implementation of policies and HIECs and possibly other cross-sector collaborations characterised by a vague mandate with the provision of a small amount of new resources. There is little evidence that local dominant coalitions appropriated the central HIEC mandate to their own ends. On the other hand, there is evidence of interpretation and implementation of the central mandate by HIEC leaders to serve their local needs. These findings augur well for Academic Health Science Networks, which pick up the mantle of large-scale, cross-sector collaborations for health and innovation. This study also highlights that a supportive policy environment and sufficient time would be crucial to the successful implementation of new cross-sector health collaborations.

**P92**

Economic evaluation of a patient and carer centre system of longer-term stroke care from a cluster randomised trial (the LoTS care trial)

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**Background**

Stroke generates considerable personal and financial burdens to society. We evaluated the cost-effectiveness of a new post-discharge system of care for stroke care co-ordinators (SCCs) to address the longer term problems experienced by stroke patients and their carers.

**Materials and methods**

A pragmatic cluster, randomised, controlled trial compared the system of care against usual care. Randomisation was at the level of stroke service. Participants’ use of health/social care services and informal care were measured by self-complete questionnaires at baseline, 6 and 12 months. From these, we estimated and compared individual-level total costs from health/social care and societal perspectives at 6 months, 12 months and over 1 year. Costs were combined with the primary outcome, psychological health (General Health Questionnaire 12; GHQ12), and quality-adjusted life years (QALYs; based on the EQ-5D) to examine cost-effectiveness at 6 months. Cost-effectiveness acceptability curves based on the net benefit approach and bootstrapping techniques were used to estimate the probability of cost-effectiveness.

**Results**

32 services were randomised, of which 29 participated, and 800 stroke patients (401 intervention, 399 control) and 208 carers (108 intervention, 100 control) were recruited. Costs of SCC inputs (mean difference £42; 95% CI: -30, 116) and total health and social care costs at 6 months, 12 months and over 1 year were similar between groups. Total costs from the societal perspective were higher in the intervention
group due to greater use of informal care (+£1163 at 6 months, 95% CI 56 to 3271; +£4135 at 12 months, 95% CI 618 to 7652). There were no differences in GHQ12 or QALYs and the probability of the system of care being cost-effective at 6 months was low at the current policy threshold of £20,000 to £30,000 per QALY gain.

Conclusions The system of care was not cost-effective compared with usual care in this patient group over the period we examined. It is unclear why the intervention group accessed greater levels of informal care.

P93 Designing an evidence-based mobile health decision aid for the management of hypertensive disorders of pregnancy (HDP) in low-resourced settings
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Background Pre-eclampsia is one of the leading causes of maternal death and morbidity in low-resourced countries due to delays in case identification and a shortage of health workers trained to manage the disorder. The objective of the PERS on the Move (POM) project was to provide mid-level health workers with an evidence-based and low-cost decision aid to improve diagnosis and management of pre-eclampsia, to improve outcomes.

Materials and methods The decision algorithm used in the POM application was designed through iterative review by study working group members and incorporated several risk thresholds as triggers for recommendations of interventions. The WHO recommendations for treatment and management of pre-eclampsia and eclampsia were also used to define the treatment recommendations made. The POM application was used to collect a prospective cohort of women admitted to hospital with an HDP in South Africa and Pakistan. The accuracy of the decision algorithm overall was assessed based on the algorithm’s ability to correctly identify high-risk cases (women who went on to suffer an adverse maternal outcome). During this study, recommendations for care generated by POM were blinded to the clinical and research staff.

Results Between 1 January 2011 and 31 March 2012, 617 women were recruited to the study in Pakistan, while 235 women were recruited in South Africa between 1 November 2012 and 31 December 2013, creating a total cohort of 852 women of whom 119 (14.0%) experienced one or more component of a composite adverse maternal outcome within 48 hours of admission. During the study, the research staff reported high usability and acceptance of the tool in the clinical setting. When the POM decision algorithm was applied to the study cohort, 339 women were identified as high-risk requiring further treatment. Of these, 89 (26.3%) suffered an adverse maternal outcome within 48 hours of admission to hospital. Use of the POM decision aid correctly identified 74.8% of high-risk women, with false positive rate of 29.3% and overall accuracy of 67.1%.

Conclusions The POM decision aid showed moderate accuracy in the study cohort, was designed with user input and is acceptable by health workers in low-resourced settings. The true effect of the POM tool on maternal outcomes needs to be assessed in an implementation study.

P94 Bridging the gap between current practice recommendations in national guidelines – a qualitative study of mental health services
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Background “National guideline for assessment, treatment and social rehabilitation of persons with concurrent substance use disorders and mental disorders”, launched March 2012, is aimed at a wide range of health services. It holds a separate chapter on implementation. The National Centre for Dual Diagnosis was commissioned by the Norwegian Directorate of Health to develop a plan for implementation of the Guideline. It contains tools to strengthen management, clinicians and consumers. A clinical audit tool was made to measure research-practice-gap. The clinical audit is the start-point of the implementation plan, followed by an action schema. The implementation-process is as follows:

- Identify today’s practice assessed against recommendations in the guideline, doing a clinical audit
- Identify areas of improvement based on the clinical audit
  a) choose a goal for improvement
  b) select initiatives based on goals
  c) allocate responsibility
  d) describe progress
- Implementation phase
- Evaluate by a new clinical audit and summarize experiences
This project aims to understand the process of using clinical audit as a basis for making choices aimed at clinical improvement in district psychiatric clinics. The objectives of the study are to describe and explore the implementation-process from the use of clinical audit to change in practice.

Materials and methods Three different methods will be used, all qualitative, to explore the process: 1) observation of meetings, minutes of meetings etc. from the presentation of results from the clinical audit to a fully described action schema, 2) focus-group interview with participants from each of the included units after second clinical audit, and 3) individual interviews with head of the units after second clinical audit. There is a desire to open up to experiences, perceptions, attitudes and narratives. The setting is four units at a district psychiatric clinic, one outpatient clinic, two inpatient units, and one psychiatric outpatient emergency team.

Results First observations are done and analysis pending. Preliminary results from the observation part of the study may be presented in July.

P95 Effects of ethnicity on the quality of family planning services in Lima, Peru
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Background Most studies reporting ethnic disparities in the quality of healthcare come from developed countries and rely on observational methods. We conducted the first experimental study to evaluate whether health providers in Peru provide differential quality of care for Family Planning (FP) services, based on the ethnic profile of the patient.

Materials and methods In a crossover randomized controlled trial conducted in 2012, a sample of 351 out of the 408 public health establishments in Metropolitan Lima, Peru were randomly assigned to receive unannounced simulated patients enacting indigenous and mestizo (mixed ethnoracial ancestry) profiles (sequence-1) or mestizo and then indigenous profiles (sequence-2), with a five week wash-out period. Both ethnic profiles used the same scripted scenario for seeking contraceptive advice but had distinctive cultural attributes such as clothing, styling of hair, make-up, accessories, posture and patterns of movement and speech. Our primary outcome measure of quality of care is the proportion of technical tasks performed by providers, as established by Peruvian FP clinical guidelines. Providers and data analysts were kept blinded to the allocation. The trial was registered with ClinicalTrials.gov NCT01885858.

Results We found a non-significant mean difference of -0.7% (p=0.23) between ethnic profiles in the percentage of technical tasks performed by providers. However we report large deficiencies in compliance with the quality standards of care for both profiles.
Conclusions Differential provider behaviour based on the patient’s ethnic profiles compared in the study did not contribute to deficiencies in FP outcomes observed. The study highlights the need to explore other determinants for poor compliance with quality standards, including demand and supply side factors, and calls for interventions to improve the quality of care for FP services in Metropolitan Lima.

P96 Assessment of an evaluative tool for nursing college students: the tests for Objective Structured Clinical Examination (OSCE)
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BMC Health Services Research 2014, 14(Suppl 2):P96

Background The OSCE test is a tool used to assess the competence of Health Sciences’ students in a planned and structured way. It assesses their clinical skills based on simulations, specially designed according to the test objectives. More than 1,800 nursing students took an OSCE test which was implemented in 13 schools of nursing from to 2001 to 2011 in Catalunya.

Objective To assess the efficiency of an OSCE test from the students’ and lecturer’s point of view. The test has been done over ten years as part of the university nursing training.

Materials and methods A qualitative research method of the Grounded Theory was used. The tools chosen to collect information were a questionnaire with open questions, a focus group with students, and personal interviews with faculty. The method of constant comparisons and the software Atlas-ti were used to analyze the data.

Results Professors and students almost unanimously agree about the credibility of the staging and the contents of the situations posed in the test. It is positive that the simulations are carried out in a healthcare environment. However, some students manifest that it bothers them and they feel uncomfortable to act in front of professors who evaluate them. Students and professors agree on rating the content of the OSCE as appropriate in relation to the nurses’ role and representative of different areas of nursing practice. In general, the students believe that the difficulty of the test is reasonable. Coinciding with results from other studies [2], students considered that the OSCE test is stressful but a worthwhile experience.

Conclusions The OSCE test has been evaluated as an effective tool to assess skills in nursing students. Previous test information must be improved to decrease the stress generated by the students.

References

P97 Early identification of familial hypercholesterolaemia in general practice using patient-specific reminders: focus group with General Practitioners
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BMC Health Services Research 2014, 14(Suppl 2):P97

Background Familial Hypercholesterolaemia (FHc) is a common inherited disorder, leading to raised serum cholesterol evident from the first year of life. One in 500 people are affected by the minor heterozygote form of this condition, of which an estimated 85% are unidentified. National English guidelines, produced by NICE, highlight the importance of cholesterol screening and FHc identification in prevention of coronary heart disease [1,2]. However, evidence based approaches to support guideline implementation are under developed. The incorporation of computerised patient specific reminders is thought to have clinical utility in the identification of patients with genetic conditions but as yet not evaluated in primary care for FHc.

Materials and methods In order to develop computer based prompts are acceptable to general practitioners a focus group was held for general practitioners from the Inner City Derby area, of which the outcome would inform the design of a future feasibility study to assess the use and impact of such reminders for FHc in clinical practice.

Results General practitioners were in favour of specific patient reminders for early identification of individuals at risk of FHc. Emerging themes included brevity, clear and succinct statements, explicit actions that linked specific screening tests to specific diseases and the need to tailor different GP clinical systems.

Conclusions Clinicians need to be alert to the prevalence of FHc in clinical practice. Based on results from both the focus group and preliminary work, PSR’s were considered to be an overall effective method of early identification of FHc in general practice and therefore considered relevant in pre-trial work to inform substantive research in the early identification of FHc in primary care.

References

P98 Realistic genetic competencies achievable by US primary care providers
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BMC Health Services Research 2014, 14(Suppl 2):P98

Background Genetic medicine is increasingly being incorporated into primary care predominantly in preventive activity. Further, minority populations in the USA, as in other countries, are exposed to health disparities in many aspects of health service provision. Genetic medicine is in danger of amplifying these disparities. This could be counteracted by improving the genetic competency of Primary Care Providers (PCP).

In the US, these providers include family doctors, general internists and paediatricians. Objectives of this qualitative study included:

(1) Map current genetic activity for minority populations within primary care/community setting in the US.

(2) Critically appraise skills, attitude and knowledge of primary care/ community health professionals currently fulfilling a genetic role with underserved populations.

Materials and methods Documentary evidence was reviewed to inform the development of the interview schedule on primary care professionals’ competencies. Key informants were identified through contact with academic residency-training primary care practices and through US family practice (non-specialist) conferences. A series of 12 semi-structured interviews were completed with key informants. These interviews were transcribed and thematic content report back to informants to draw recommendations on future achievable competency criteria.

Results Certain attributes where identified that are required for PCPs to develop genetic competency. These included adapting communication skills, working with families and appreciating the local disease prevalence. These attributes are enhanced by PCP keeping up to date, using standard procedures, and presence of genetic literacy in consulting patients. However competency is hindered by lack of time and resources, poor awareness of patients’ beliefs, and inappropriate confidence in competency.

Conclusion PCPs’ genetic competency can be improved by incorporating transferable skills and concentrating on genetic conditions with higher prevalence in local area. This can be enhanced by improving the community’s genetic literacy.
P100  
Studying moderators of implementation: analysis from an intervention to reduce disrespect and abuse in facility-based childbirth  
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BMC Health Services Research 2014, 14(Suppl 2):P100

Background  
Across the globe, women who deliver in health facilities report experiencing disrespect and abuse (D&A). In low- and middle-income countries, D&A is particularly catastrophic because it may cause women to opt against facility delivery, as well as violate their human rights. D&A is likely a frontline manifestation of multi-level problems in complex health systems; yet efforts to address D&A have typically focused on micro-levels - either health providers' ethics or users' demand for quality care. These have rarely achieved sustainable implementation [1], mirroring clinical quality improvement challenges. Implementation science holds promise for investigating these challenges. The Consolidated Framework for Implementation Research (CFIR) assembles constructs from across the literature that can guide inquiry [2].

Materials and methods  
The Staha Project studies the magnitude and dimensions of D&A, and is testing mechanisms for its mitigation. It is based in two Tanzanian districts, with one assigned to intervention. Implementation is conducted by four facilities, catchment communities and local leadership. Implementation research includes patient and provider satisfaction surveys, observations, reports and qualitative interviews. Relevant CFIR constructs were selected to develop the lines of inquiry and as themes for qualitative analysis adapted iteratively based on data. We conducted descriptive analyses of quantitative data.

Results  
The intervention was developed through a participatory process grounded in baseline research to address meso- and micro-level drivers at the district level. A change process was elaborated including activation of a client service charter and a facility-based change process. Mutuality of respect emerged as the underlying value for the process. Results from the planning process and the first year of implementation will be presented using CFIR constructs. These will include findings related to the characteristics of the intervention, inner and outer settings, individual implementers and the process.

Conclusions  
The CFIR was a useful tool to establish lines of inquiry and frame analysis. Ongoing analysis permitted identification of areas for improvement. We found the strongest constructs were regarding the intervention, the individual, and the inner setting characteristics. The outer setting construct could be further developed, especially for interventions that go beyond health facilities.

References  

P103  
Health care reform in the US: an analysis of implementation of the Affordable Care Act in California  
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BMC Health Services Research 2014, 14(Suppl 2):P103

Background  
The Patient Protection and Affordable Care Act (ACA) was signed into law in 2010. In the past four years, federal and state governments have made changes to existing programs, created new ones, and attempted to foster innovation in the health care system. We provide an update on implementation of the ACA in California, specifically focused on the expansion of Medi-Cal for low-income populations and the creation of California’s marketplace to purchase insurance coverage.

Materials and methods  
The main analysis is based upon a micro-simulation model created by UCLA and UC Berkeley to predict the impact of the ACA on California, given the unique demographic differences in California and the varied implementation of the law in the state. This model is built using economic and probability theory, coupled with multiple data sets on the health care use of Californians (Medical Expenditure Panel Survey), the behavior of employers (Employment Development Department and the California Employer Health Benefits Survey), and characteristics of California’s population (the California Health Interview Survey). This model provides a baseline picture of insurance coverage in California without the ACA, and also allows us to estimate the impact of the ACA and compare it to the actual data released on insurance status, take-up, and response in 2014.

Results  
Taking into account churn, which is predicted to reduce enrolment by more than 40% on an annual basis [1], between 1.1 and 1.3 million people will be enrolled in Covered California with subsidies at any point in time. Enrolment in the individual market or Covered California without subsidies will range from 2.4 to 2.7 million. Medi-Cal enrolment will reach an all-time high ranging from 7.4 to 7.8 million.

Conclusions  
Chances to insurance regulations, the creation of health insurance marketplaces, and the expansion of Medicaid California have reduced the number of uninsured individuals substantially. However, the choices available to consumers, the requirement to purchase insurance, and the cost of insurance coverage could be difficult barriers to widespread acceptance of health reform in the U.S. and California.

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Reference  

P104  
The gap in dementia research: the need for translational research  
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BMC Health Services Research 2014, 14(Suppl 2):P104

Methods of translational research, implementation & dissemination, and its theoretical references, concepts of knowledge circulation, and criteria for assessment of these processes are established subjects of implementation and dissemination science. Due to the working group, ‘Implementation and Dissemination Research’ (ImDi) at the German Center for Neurodegenerative Diseases (DZNE) and the ‘Section Dissemination and Implementation (SDI)’ in the German Society of Nursing Science (DGP), the national and international discourses of the translational research has been more deeply thematized.

There are three different perspectives: The quality of living with dementia depends on the person her/himself and her/his biography, the personal care and the social and material environment. Therefore, dementia care is culture specific. Experiences from other countries cannot always be transferred to the German context and particularly migrants need an extra awareness. Moreover the regulatory system is also important since the care potential depends on health care services and the whole health care system including reimbursement regulations (e.g. Long-Term Care insurance, LTC).

From the perspective of a clinician it can be determined that translational research mainly focuses on the connection of fundamental and clinical research (e.g. drug development, longitudinal studies on biomarkers etc.). From the perspective of implementation and dissemination research it can be determined that a) only a fraction of research results for people with dementia is translated into care practice; b) the implementation
of care interventions is not carried out systematically; c) the systematic, structured, and sustainable implementation as well as the continuous evaluation of implementation effects are usually omitted, and d) research that focuses implementation processes is usually funded. With this in mind, it can be concluded that implementation and dissemination research in Germany represents a huge research gap.

P105 Psychosomatic consultation in the workplace: do we reach different users by changing the context?
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BMC Health Services Research 2014, 14(Suppl 2):P105

Background In Germany, the proportion of mental health diagnoses in early retirement is currently at 40%, constituting the largest diagnostic group. Due to demographic changes, shortage of qualified staff is an increasing challenge for social insurance funds and the labour market. Work-related stress is known to promote common mental disorders (CMD) like depression, anxiety, somatiform disorder or adjustment disorders and results in a declining quality of life and work performance. Although the landscape of mental health services is well established in Germany, only 40% of affected individuals managed to obtain professional care. The unmet need for easily accessible and early interventions and the economic impact of CMD led to the development of a variety of offers at the interface between company supported and conventional mental health care (CAU) e.g. the “psychosomatic consultation in the workplace” (PCIW). To learn more about this complex system we set out to analyse user profile and change 12-weeks after consultation.

Materials and methods Observational cross-sectional design, followed by a pre-post test 12 weeks after initial consultation. By latent class analysis (LCA) individuals were classified into distinct groups based on individual response patterns. For pre-post comparison we performed variance analysis with repeated measurements. Data were collected by self-administered questionnaires: work ability (work ability index, WAI), quality of life (SF-12), mental health (PHQ-9-depression, PHQ-15-somatization, PHQ-7-anxiety) and work-related stress (irritation scale, maslach burnout inventory).

Results Preliminary sample description: N=352 individuals: PCIW n=173 / CAU n=179. Demographic variables that differed between the groups (p< 0.05) were age in years (PCIW 44.9, SD 10.1/CAU 39.4, SD 11.9), gender (PCIW 91% male/CAU 30% male), symptom duration in months (median PCIW 12 / CAU 24) and service utilization, i.e. previous contact with the psychotherapeutic-psychosomatic-psychiatric health care system (PCIW 38%/CAU 63%). A 4-class solution was chosen due to best fit indices. Four subgroups (classes) of users with different patterns of impairment were identified; generally those with less impairment were seen in the vocational context. Pre-post test showed improvement in both groups for WAI (PCIW 30.25, SD 8.25; CAU 26.57 SD 8.86), depression, anxiety, SF-12 mental health and irritation. There was no difference between groups (PCIW vs. CAU), nor a group time effect.

Conclusion PCIW stands for an easy accessible therapeutic offer in the vocational context. Our data suggest that we reach a different type of user. Even though the user profile differs the effect of the intervention seems to be similar.

P107 Are group-based parenting programmes in Sweden a cost-effective way of reducing early child behaviour problems?
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BMC Health Services Research 2014, 14(Suppl 2):P107

Background Child conduct problems increase the risk of costly negative outcomes later in life [1,2]. Parenting programmes are effective in reducing child conduct problems but only few cost-effectiveness studies are published [3]. To our knowledge, there are no cost-effectiveness analyses comparing several parenting programmes in a randomised control trial (RCT).

Materials and methods A cost-effectiveness analysis of four programmes, Komet, Connect, the Incredible Years, Cope, and a self-guided book on parenting strategies compared to a waitlist control, was conducted at 4-months post-test, from a payer’s perspective, based on a RCT. The study samples consisted of 961 parents of 3-12 year-old children with conduct problems, including 862 who started a programme or reading a self-guided book, and 159 in the waitlist control. Conduct programmes were measured by the Eyberg child behaviour inventory (ECBI). The outcome measures were the incremental cost per one point reduction in the ECBI intensity scale, and incremental cost per one averted clinical case of conduct problems.

Results Average intervention cost per child ranged between 120 SEK (£8.91) for the book – 12035 SEK (£893.87) for the Incredible Years. The book and Komet were cost-effective in the reduction of ECBI mean intensity scores with an ICER of 13 SEK (£0.97) and 772 SEK (£57.34) per one ECBI point reduction. Cope was cost-effective targeting the number of averted cases of conduct problems, with an ICER below zero per case averted. Cope also yielded the lowest average cost per averted case, £1212.28. Sub-group analysis showed that program completion led to greater cost-effectiveness.

Conclusions Different programmes were cost-effective depending on the outcome. The book and Komet were cost-effective in improving child behaviour on a group level, whereas Cope was cost-effective in reducing clinical cases of conduct problems. Selection of the most appropriate programme or combination of programmes should be determined by the aim of the intervention, budget constraints and decision-makers willingness-to-pay.

References

P108 Effect of 23-valent pneumococcal polysaccharide vaccine on medical expenses in Japan
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BMC Health Services Research 2014, 14(Suppl 2):P108

Background It has become popular to be vaccinated against pneumonia in Japan. It is reported that 23-valent pneumococcal polysaccharide vaccine prevents pneumonia and improves survival in nursing home residents in Japan [1]. However the effect on medical expenses of that vaccine in a local area has not yet been reported. We tried to evaluate it.

Materials and methods In a prefecture, which is located in western part of Japan, people over 75 years old have been assisted with being vaccinated against pneumonia each year. In this analysis, the expenses of that vaccine in a local area has not yet been reported. We tried to evaluate it.

Results Period A: From April 2009 till March 2012
Period B: From April 2012 till September 2012

The medical expenses for pneumonia of the vaccinated group (n=13689) and the non-vaccinated (n=126110) group are compared using the medical practitioners’ receipt for health insurance claim. The medical examination rates in Period A were 0.43% per year in the vaccinated and 0.227% per year in the non-vaccinated. Those in period B were 0.549 in the vaccinated and 0.331 in the non-vaccinated. The increasing rate of the vaccinated seems to be suppressed compared to non-vaccinated.
Medical expenses in Period A were £365.2 in the vaccinated and £293.9 in the non-vaccinated. Those in Period B were £371.9 in the vaccinated and £172.1 in the non-vaccinated. The increase in medical expense seems to be suppressed by the vaccination.

Conclusion The rate of the vaccinated in this prefecture is small. And the Period B is too short. Also it seems that those that are vaccinated have some diseases or are compromised. However the vaccination seems to be effective in reducing medical examination rate of pneumonia and reducing the medical expenses for it.

These data have some limitations. Pneumonia on the medical practitioners' receipt is not only caused by pneumococcus but also other causes such as virus. As the bills of medical treatment are issued every month, rates of diseases are sometimes overestimated. And the medical expenses for the inpatient was not calculated as they were not admitted only for pneumonia.

Effect of 23-valent pneumococcal polysaccharide vaccine seems to reduce pneumonia and medical expenses even in a local area.

Reference

P110 Evaluation of an Emergency Department Lean Process Improvement Program to reduce length of stay
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Background In recent years, Lean principles have been applied to healthcare processes to improve quality and efficiency. Lean's focus on reducing waste and improving process flow can have significant impacts on patient outcomes. In 2009, an ED Process Improvement Program based on Lean methods was introduced in Ontario as part of a broad strategy to reduce ED length of stay (LOS) and improve patient flow. This study sought to determine the effect of this program on ED wait times and quality of care.

Methods We conducted a retrospective cohort study of all ED visits at program sites over 3 program waves from April 1, 2007 to June 30, 2011 in Ontario, Canada. Time series analyses of outcomes before and after the program and difference-in-differences analyses comparing changes in program sites with control sites were conducted. Results In before-after models among program sites alone, 90th percentile ED LOS did not change in Wave 1 (-14 minutes [95% CI -47, 20]) but decreased after Wave 2 (-87 [95% CI -108, -66]) and Wave 3 (-33 [95% CI -50, -17]); median ED LOS decreased after Wave 1 (-18 [95% CI -24, -12]), Wave 2 (-23 [95% CI -27, -19]), and Wave 3 (-15 [95% CI -18, -12]); in all Waves, decreases were observed in time to physician assessment, left without being seen rates, and 72-hour ED revisit rates. In the difference-in-differences models, where changes in program sites were compared with controls, the program was associated with no change in the 90th percentile ED LOS in Wave 2 (17 [95% CI -0.2, 33]) and increases in Wave 1 (23 [95% CI 0.9, 45]) and Wave 3 (31 [95% CI 10, 51]); modest reductions in median ED LOS in Waves 2 and 3 alone; and a decrease in time to physician assessment in Wave 3 alone.

Conclusions Although the program reduced ED waiting times, it appeared that its benefits were diminished or disappeared when compared with control sites, which were exposed to system-wide initiatives such as public reporting and pay-for-performance. This study suggests that further evaluation of the effectiveness of Lean methods in the ED is warranted before widespread implementation.

P111 The inter-relation between policy and practice for transitions from hospital to home: an ethnographic case study in England’s National Health Service
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Background Poorly managed transitions from hospital to home for elderly patients with complex needs (commonly referred to as patient discharge) often exacerbate detriments to health and function associated with acute inpatient hospital stays. The English National Health Service introduced the Community Care (Delayed Discharges) Act in 2003 to improve the transition process, but the ways in which this policy is interpreted and applied in actual contexts of health and social care remain under-explored using qualitative methodologies. The purpose of this study was to understand the complex inter-relationship between policies related to discharge from hospital and the practice of helping older people transition from hospital to home in London, United Kingdom.

Materials and methods We used an ethnographic case study methodology to achieve a comprehensive understanding of the relationship between policy and practice for patient transitions, including the following methods: (a) observation of inter-professional team meetings in the hospital and community settings, (b) qualitative interviews with key informants including health care leaders, commissioners of care, practitioners, and patients, (c) analysis of policies at the national and local levels related to patient transitions, and (d) patient chart reviews. Data were analyzed from a critical social science perspective, and key themes were related between data sources. An overall understanding of the process of policy implementation for patient transitions were then interpreted.

Results Findings suggest that the implementation of policies for patient transitions relied on informal practices and relationships at the individual, organizational, and inter-organizational levels as opposed to formal mechanisms of control embedded in national policy (e.g., financial penalties for poor transitions). At the individual level, health care practitioners negotiated new mandates related to patient transitions in the context of existing informal relationships related to patient care decision-making. At the organizational level, health care managers relied on motivating and encouraging improved practice among staff as opposed to enforcing strict adherence to policy guidelines. At the inter-organizational level, healthcare leaders built informal relationships with those at partner organizations in order to build trust and encourage collaboration during the process of patient transitions.

Conclusions This work suggests that greater attention should be paid to (a) the personal characteristics of health care leaders and practitioners and (b) the conditions of practice in health care environments that help to foster relationship-building in the context of patient transitions from hospital to home. These informal relationships were found to be central to policy implementation for patient transitions.

P112 Quality indicators for Bariatric Surgery 2004 to 2012: example from Florida
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Background Bariatric surgery is a rapidly diffusing innovation in the field of weight loss. We would expect improvement in quality indicators as more surgeries are performed. However, it is not known if this “practice makes perfect” trend holds for bariatric surgery. We examine three quality indicators for bariatric surgery: rate of surgical complications, death rate and rate of readmissions to a hospital within 30 days from discharge.
Materials and methods All elective hospital admissions with a procedure code for bariatric surgery were extracted from the HCUP State Data for Florida for the years 2004 through to 2012. A total of 57,533 surgical admissions were identified (index admissions). Any admission within 30 days of discharge from the Index admission, regardless of reason for the readmission, was noted as a 30 day readmission (30DR). Admissions with ICD-9 diagnosis codes for surgical misadventure, foreign object, surgical contamination, instrument failure, persistent fistula, shock and hemorrhage were coded as having a complication.

Results The mean age of patients was 47.3 years (SD 13.6). The majority of patients were female (74%), of white race (68.4%) with 14.3% black race and 14.4% Hispanic. A diagnosis of diabetes was present for 32% and 87% had a diagnosis code of morbid obesity. The most common surgical approaches were laparoscopic roux-en-y (LRY) 43%, roux-en-y (REY) 22%, and laparoscopic adjustable gastric band (LAGB) 17%. One percent of patients had a percutaneous endoscopic gastrostomy (PEG) tube at the time of surgery.

The overall complication rate was 0.92%, range 0.97% in 2004 to 0.69% in 2012 (p=0.105). Complications ranged from LSG=0.33% to OSG=2.05% (p<0.0001), after controlling for year, age, sex, race and diabetes. The death rate during the Index admission was 0.92% and did not change over time (p=0.09). Complications during surgery increased the risk of death nearly 3 fold.

Risk of 30DR for bariatric surgery declined from 10.5% in 2004 to 8.4% in 2012 (p=0.1050). Complications ranged from LSG=0.33% to OSG=2.05% (p<0.0001), after controlling for year, age, sex, race, and diabetes. The death rate during the Index admission was 0.92% and did not change over time (p=0.09). Complications during surgery increased the risk of death nearly 3 fold.

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Conclusion The Arogya Kiran model has shown pathway and understanding to move towards a comprehensive, coordinated, and efficient community based program, a step forward to realize the vision of a fully integrated system for patients, families, and clinicians across the continuum of care. Case detection of undiagnosed diabetes and hypertension through this model is low but definitive cost-effectiveness calculations must be done before advocating for scale-up.

P114 Policies and priorities to combat NCD challenges in India
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BMC Health Services Research 2014, 14(Suppl 2):P114

Chronic non-communicable diseases (NCDs) have replaced communicable diseases as the most common causes of morbidity and premature mortality worldwide. Since 1980, the Government of India had supported states in prevention and control of cancer as a vertical program. However, several challenges were identified, such as: lack of comprehensive approach to key NCDs including diabetes and cardiovascular diseases; limited emphasis on health promotion and preventive measures to reduce exposure to risk factors; lack of facilities and capacity for screening, early diagnosis and effective management within the public health care system was not adequately addressed. Aiming at preventing rise of NCDs, the government launched the National Programme for Prevention and Control of Cancer, Diabetes, Cardiovascular Diseases and Stroke (NPCDCS) in 2010 and planned to expand to all districts of the country in a phased manner. The current programme has prioritised preventative and promotive services to the general population and holistic care to the people with NCDs at primary, secondary and tertiary levels of health-care with integrated management and strong monitoring system for making services universally accessible in the country. Under the mass screening initiative, nearly 60 million people aged 30 years and above were screened for diabetes and hypertension. Those identified with raised blood sugar and high blood pressure need to be referred for further investigations, treatment and periodic follow-up. It is therefore recommended that the revised National Health Policy should duly emphasize policies and strategies to prevent and control key NCDs through population-based interventions that require multi-sectoral approach. The referral system needs strengthening and secondary and tertiary levels of health care require further strengthening key NCDs and their complications.

An effective inequity reduction intervention: evaluating what made it work
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Background Recent healthcare literature points to the need to investigate how to achieve inequity reduction. We studied the implementation of an organizational-wide inequity reduction intervention in Israel’s largest healthcare provider and insurer, Clalit Health Services during 2009-2012. The intervention focused on reducing health and healthcare gaps between 55 target clinics (major clinics serving predominantly minority and socioeconomically deprived populations) and all other 126 major primary care clinics. The intervention focused on inequity reduction in a composite weighted score of seven indicators: attainment of diabetes, blood pressure, and lipid control;
lack of anemia in infants; and performance of mammography, occult blood tests, and influenza vaccinations.

**Materials and methods** A mixed-methods qualitative-quantitative design assessed implementation in 26 of the 55 target clinics. We assessed intra-organizational ties using social network analysis and perceived team effectiveness (using Shortell's questionnaire). 108 semi-structured interviews were conducted with clinics' team members (a physician, nurse, administrator and pharmacist) and their respective managerial units. We mapped the types of interventions using an adaptation of the Chronic Care Model. The relationships between network characteristics, perceived team-effectiveness, type and scope of interventions, and improvement in the composite quality score were assessed.

**Results** At baseline, the composite weighted score for target clinics was 56.8, compared to 63.4 for non-intervention clinics, and at the three-year follow-up 66.7% of this gap was reduced. Among target clinics, those with high intra-network cohesion and intensive relationships with sub-regional management had high ratings on the perceived team effectiveness scale (rs=0.406, p<0.05; rs=0.464, p<0.05). Interventions focused on the organization of care i.e., improvement of teamwork, were found to be positively correlated with improvement in the composite score (rs=0.393, p<0.05). This finding was supported by qualitative data indicating teamwork as the factor attributed most to attainment of success. Furthermore, interventions tailored to community needs, such as work with religious leaders to improve immunizations or nurse-led ethnically adapted cooking classes for diabetic patients, were also found to be positively correlated with improvement in the composite measure (rs=0.449, p<0.05). Conversely, clinics that mainly focused on patient education in specific disease areas (such as diabetes control) did not achieve significant improvement in overall quality.

**Conclusions** This study shows that interventions focused on the organization of care as well as community linkages are correlated with favorable outcomes in care quality and equity within a comprehensive organization-wide inequity reduction program.

**P116** How can mental health and substance use services become dual diagnosis capable? Moving from theory into practice

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**Results** The four principles arrived at were to: (a) embed the model into existing systems; (b) establish clear guidelines for clinical decision-making and care pathways; (c) use a change management framework during the implementation phase; and (d) provide training and capacity building to staff.

**Conclusions** Although the three services were able to successfully implement the new screening and referral pathway procedures with their available resources, it was clear that additional funding would be required in the longer term to accommodate more integrated in-house treatment of clients with a dual diagnosis. SUD staff in particular felt they did not have the required level of skills to treat MH issues so further training in mental health management would be useful in the longer term. Investment in training staff is likely to substantially improve client outcomes without the need for immediate structural change in the current health care system.

**P118** The staying power of change: sustainability of pain practice improvements after a multidimensional knowledge translation intervention

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**Background** Despite significant developments in acute pain research in hospitalized children, pain assessment and management practices for this population remain sub-optimal. To address the gap between research and practice a multidimensional, knowledge translation intervention, Evidence-based Practice for Improving Quality (EPIQ) [1] was successfully implemented at eight Canadian tertiary pediatric hospitals [2]. EPIQ was effective in improving pain practices immediately following the intervention completion in the EPIQ units compared to standard care (SC) [2]. However, the sustainability of these improvements requires consideration. The objective of this study is to determine the sustainability of the overall effect of EPIQ on pain practices 12 months post intervention.

**Materials and methods** Thirty-two inpatient care units across 8 Canadian pediatric hospitals participated in the study. Using a prospective cohort comparative design with repeated measures, EPIQ was implemented in 16 units, while 16 units continued with SC. The intervention included 4, 3-month Plan-Do-Study-Act (PDSA) cycles and was implemented over a 15 month period. Medical charts were reviewed on all 32 units at baseline (T1), intervention completion (T2), and 12 months post intervention (T3) to determine the frequency and the nature of pain implications. Data were analyzed using generalized linear mixed models to identify between and within group differences for each pain practice.

**Results** There was a significant group by time interaction effect for use of any pain assessment tool (P=0.048) with the EPIQ groups demonstrating a greater change at T2 compared to the SC groups. There was a significant effect of time for use of any validated pain assessment tool (P=0.001). There was also a significant effect of time in the proportion of patients receiving a procedure-linked analgesic (P=0.034) with a significantly greater increase occurring in the EPIQ groups compared to SC groups at T2. In all significant outcomes, improvements occurred at T2 compared to baseline (T1). Pain practice changes were partially sustained at T3.

**Conclusions** Further assessment of practice changes over a longer time period (2 years) is required and a more detailed investigation of the factors that influence the sustainability of pain practice improvements, including examination of child and organization related contextual factors.

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**References**

**P119**

**CCG implementation of integrated care in the NHS**

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**BMC Health Services Research 2014, 14(Suppl 2):P119**

**Background**

Demographic changes, ageing populations and increasing numbers of patients with multiple long-term conditions (multimorbidity) means health systems must change organisation and delivery to match patient need. Health systems globally are therefore looking to implement ‘integrated care’ as a means to achieve better health system outcomes (health gain, cost-effectiveness, and user satisfaction [1]). The NHS is no exception.

The 2012 Health and Social Care Act, which also created the Clinical Commissioning Groups (CCGs), mandated that these new clinically-led organisations act to support integration of care [2]. However, there is little known about the implementation of integrated care and how CCGs have utilised the flexibility that they have been provided.

This project, therefore, examines a random sample of CCGs and compares the models of integrated care in practice to date.

**Materials and methods**

All of the publicly available literature from a random sample of 10% (n=21) of the 211 CCGs was examined to determine the models of ‘integrated care’ being implemented.

The model in each CCG was categorised with the aid of an extant health systems framework [1], and models compared across the sample. Results were discussed in terms of innovation displayed by the new CCGs.

**Results**

Although the source of information (CCG reports) limited the detail of what could be extracted, there was a clear dominance (n=17/21, 81%) of a single particular model of integrated care present as the primary practice in the NHS. This model can be described as multi-disciplinary case management of high-risk patients, and tends to focus on reducing these patients’ use of acute, secondary care services.

**Conclusions**

At the CCG-level, there appears to be a focus on integrating care via ‘service delivery’ interventions, focussed on a small minority of patients determined to be at most risk. The evidence base for this particular intervention is limited at present [3], potentially requiring more justification in terms of health system outcomes.

This clear dominance of a single model also shows limited evidence of innovation, given the potential for flexibility at the CCG-level.

**References**


**P120**

**Effectiveness of psychosocial intervention for teenage pregnancy on low birth weight and preterm birth outcomes: a systematic review and meta-analysis**

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BMC Health Services Research 2014, 14(Suppl 2):P120

**Background**

Teenage pregnant women are at risk of having low birth weight and preterm births. The additional psychosocial interventions are thought to improve these outcomes for teenage pregnancy. However, the effect of additional psychosocial intervention programs on those is uncertain. The aim of this meta-analysis is to assess the effects of additional psychosocial interventions for teenage pregnancy on low birth weight and preterm birth outcomes.

**Methods**

Search strategy: Relevant studies were identified from Medline, CINAHL, and Scopus since initiation to November 2013.

Selection criteria: Randomized controlled trials investigating the effect of any psychosocial intervention on low birth weight and preterm birth were included.

Data collection and analysis: Two reviewers independently assessed the quality of each study and extracted outcomes including rate of low birth weight, preterm birth rate, mean gestational age at delivery and mean birth weight. Standardized mean difference and DerSimonian-Laird method were applied for pooling continuous and dichotomous outcomes, respectively.

**Results**

The five studies with 712 teenage pregnant women were included. Compared with routine antenatal care, the psychosocial intervention significantly reduced risk of low birth weight by 40% (pooled RR=0.60, 95% CI: 0.38, 0.92). For the preterm birth, the psychosocial intervention reduced risk of preterm birth by 33% with no statistical significance (pooled RR=0.67, 95% CI: 0.42, 1.05). The pooled result for birth weight showed that our infants in the intervention group are slightly heavier than those of control group with statistical significance (WMD 200.63, 95% CI: 21.02, 380.25). Gestational age at delivery of intervention group was slightly increased than those of control group with no statistical significance (WMD 0.293, 95% CI: -0.43, 1.02).

**Conclusion**

The additional psychosocial support to teenage pregnant women can improve pregnancy outcomes including low birth weight and birth weight. The variation in the intervention and risk of bias within included studies may limit this conclusion.

**P121**

**Health insurance for people with citizenship problems in Thailand: a case study of policy implementation within a complex health system**

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BMC Health Services Research 2014, 14(Suppl 2):P121

**Background**

Health care provision for non-citizens (illegal migrants, stateless people, etc) is a common problem across the world. Since 2002, Thailand has achieved universal health coverage through the introduction of the Universal Coverage Scheme (UCS), covering almost all residents. However, people with citizenship problems, so-called ‘stateless people,’ were left uninsured. Consequently, the ‘Health Insurance for People with Citizenship Problems’ (HIS-PCP) policy was adopted in 2010. This study sought to examine operational constraints facing the implementation of the policy, through the views of ground-level providers.

**Materials and methods**

A qualitative, case-study approach was devised. Individual in-depth interviews and group interviews with 33 key informants (3 ministerial officers, 4 hospital directors, 2 provincial community health bureau directors, and 24 ‘street-level bureaucrats’) were conducted in Tak and Ranong provinces. Interview data were triangulated with document reviews and observation. Framework analysis was applied for data analysis. Interview data and relevant codes were mapped and interpreted against the six health-system building blocks and the issues of legality and patient characteristics.

**Results**

The policy faced several operational problems from all health-system angles. Inadequate communication and unclear service guidelines contributed to the ineffectiveness in budget spent and services provision. The problems were linked with the regulation concerning patient referral, which contradicted the legal requirements imposed on, and the highly mobile behaviour of, the stateless people. Some providers adapted their practices to meet on-the-job difficulties, including establishing a mutual agreement between neighbouring hospitals to allow stateless patients to bypass the primary care gatekeeper, but this then created a sense of unfair treatment amongst UCS beneficiaries. These challenges were intertwined with official procrastination over nationality verification procedures and poor collaboration between ministries.

**Conclusion**

The HIS-PCP encountered various constraints along its implementation. Inadequate communication and discordance between policy objectives and perceptions of healthcare staff were key explanations. Impractical legal instruments and distinctive behaviours/characteristics of stateless people made the problems more complex. Policy recommendations were suggested. In the short term, technical
and human-resources capacities of the scheme's governing body should be strengthened. Communications between the authorities within the Ministry of Public Health (MOPH) and collaboration with the Ministry of Interior, should be improved. Guidelines concerning budgeting and scope of service provision should be fine-tuned. In the long run, the nationality verification of stateless people should be expedited. The MOPH should develop clear and practical guidelines to assist health personnel to cope with citizenship problems of patients, which are beyond routine clinical services.

P122 Health systems modelling – demonstrating the potential impact of diagnostic and treatment integration of human African trypanosomiasis using different health system structures

Background Human African Trypanosomiasis (HAT) is a Neglected Tropical Disease (NTD) targeted for elimination. The declining prevalence of infection will change the demands on health systems to effectively detect cases. Detection of HAT currently relies on vertical surveillance programs where patients are identified in their villages and then required to travel long distances to HAT treatment centres (HTC). New diagnostics and interventions could change the future of service delivery of case detection and treatment; as local services would reduce out-of-pocket (OOP) expenditures and the inconvenience of travelling long distances. It is proposed that the integration of programs into the local health centres (LHC) could be modelled to forecast outcomes related to service delivery, patient accessibility, time spent in the system and resources used with current and new interventions.

Materials and methods A discrete-event simulation (DES) health systems model has been developed using SIMUL8®. The model simulates patients' movement through the health system within a specified area. Different health system structures of both integrated (e.g. inclusion of local health centres) and non-integrated (e.g. vertical surveillance programs) approaches were constructed in the model. Data from current and new diagnostic and treatments have been simulated through the model in order to measure the impact of switching from a non-integrated to integrated health system.

Results Preliminary results suggest that integrated systems with new technologies will increase accessibility, decrease patient wait times but also require additional costs for training and for improving health infrastructures at the local level.

Conclusion An integrated health system could lead to improvements in coverage of treatment and reducing inequity in access to HAT treatment. While the initial additional costs of these interventions could be offset by savings in OOP payments, affordability to health systems should be carefully assessed. The analysis shows that health systems' modelling is an informative tool for investment decisions regarding an integrated approach.

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P123 Evidence-based health human resources planning and medical professionals’ education in Iran

Background There is a global crisis constituting severe shortages of health professionals and mal-distribution of health human resources. There are some important mega trends that affect this challenge: • Populations are aging and becoming more urbanized. • Non-communicable diseases, nutrition-related, and maternity-related causes of death, mental health disorders and chronic diseases are growing. • People today are better educated and more assertive and enjoy greater access to information. The shift is toward shared medical decision making. • The health human resource workforce effort is reducing. Each of these transitions is a powerful force for change in health workforce planning, the roles of health professionals, and the design of medical professional education. Every country will have to respond to these global pressures for changes.

The Deputy Ministry for Education of Iran Health and Medical Education Ministry is working to progress health workforce reform to address the challenges of providing a skilled, innovative and flexible health professional education and planning in Iran. In 2013 the medical education Deputy, designed a national projections for general practitioners, medical specialists and sub-specialists over a planning horizon to 2025, to ensure Iran health Human Resources meets the community’s needs.

Materials and methods After a systematic review of existing workforce planning, forecasting, and foresight methodologies, we developed a new model for foresight of the Health Supply and Medical Professionals Education in Iran.

In the first phase, we conducted linear trend analyses by using the first-hand historical data of medical workforce in Iran through 1979-2012, then, we forecasted the trend out to next 10 years. In the 2nd phase we used qualitative foresight methods. Panel expert and Scenario modeling are the main methods of our study to explore the implications of possible alternative futures.

Results With trend analysis we showed that there has been significant growth of the absolute numbers of the health workforce over the past 3 decades. The findings revealed that the Iranian health workforce is not sustainable over the next 10 years, with a need for long-term reforms by government, professions and the medical education and postgraduate training sector for an effective health workforce. The main policy levers identified to achieve change were innovation and reform, training capacity and efficiency and workforce distribution.

Conclusion This national project is an ongoing process and will continue to develop workforce future studies incorporating data and methodology improvements to support Evidence-Based Health Human Resources planning and Medical Professionals Education changes In Iran.

P124 Trends in postgraduate medical education in Iran

Background Iran is designing an evidence-based plan for promoting postgraduate medical education and efficient distribution of health professional human resources. An important part of this program is foresight studies for post graduate medical education considering the important trends affecting the future of health status and postgraduate medical education in Iran. In this article, we clarify such trends in Iran.

Methods For this study, we used a systematic review of current evidence about the mega trends affecting the future of medical education. Also we gathered opinions of key stakeholders in expert panels.

Results Following trends identified as affecting the health system and post graduate medical education in Iran: demographic changes; epidemiologic transition; physician work patterns changes, female specialists number growth, changes in patients' expectations of health services; growth in information and communication technologies; new advances in diagnostic and therapeutic technologies.

Conclusions The present study found that trends affecting postgraduate medical education in Iran. In the near future, medical education in Iran will need to undergo major changes. When planning for these changes, decision-makers should consider the various trends that affect education.
**P125**

**Descriptive analysis of service use covered by long-term care insurance in Japan - based on population-based claims data**

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**Background**
Japan has the population with the highest proportion of aged people in the world and it rapidly continues to grow due to long life expectancy and a low birth rate, while traditional supports for elderly people are eroding. In response, the Japanese Government initiated mandatory public long-term care insurance (LTCI) in 2000. However, little has been published on the report of evaluation of LTCI with population-based data besides our previous report [1]. To make the provision of long-term care services effective, it is important for policy makers to have accurate evidence regarding the actual usage of services covered by public long-term care insurance (LTCI).

**Methods**
The nationwide claims data of February 2009, excluding data of some municipal bodies which were not available, was analyzed with official permission by Ministry of Health and Welfare. We evaluated the average expenditure and frequency of long-term care use covered by public LTCI and frequent patterns of services use by age, gender and care level.

**Results**
In this study 620,091 males (34.2%) and 1,193,425 females (65.8%) were observed. The proportion of males decreased with age from 54% in the 65-69 age group to 16% for those 100 and older. The average expenditure on long-term care use per person is 10,540 yen for males and 11,055 yen for females. The expenditure increases with age for both genders, and males are more likely to use services than females under 75, which becomes reversed at 75 and older. However, the distribution of users' age and gender varies by types of services. Regardless of age cohorts, males are more likely to use visiting nurse and visiting rehabilitation. The frequent patterns of service use are daycare only (15%), helper only (9%), daycare and rental device (7%), daycare and helper (6%), rental device and helper (6%), but these patterns also vary by gender and age.

**Conclusions**
This is the first study of detailed descriptions of service usage covered by the LTCI with population-based claims data. Policymakers and researchers can utilize these patterns of service use to predict future demands for long-term care and to conduct the policy evaluation.

**Acknowledgement**
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**Reference**

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**P126**

**Development and pilot testing of a National Men's Health Index**

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BMC Health Services Research 2014, 14(Suppl 2):P126

Recent men's health reports from Asia, Australia, Canada and Europe have consistently shown that men have higher morbidity and mortality compared to women in most health conditions. There are numerous factors that may contribute to this and they range from men's behaviour, socio-economic to health system factor. To date, there is no systematic way to document and compare men's health determining factors and their impacts on men's health. Policy makers do not have proper guidelines to accurately identify and prioritize on the key factors that affect men's health status in individual country.

To overcome this problem, we propose the concept of the National Men's Health Index (NMHI), which aims to assess men's health status and its social health determinants of a country. Men's health status consists of several categories including survivability, physical and mental health, which is divided further into indicators such as life expectancy, communicable, non-communicable diseases, injuries and suicide rate. The overall NMHI score indicates the wellbeing of men in the country while the sub-score will provide an indication of physical and mental wellbeing. The social health determinants are factors that influence the NMHI score and they are made up of lifestyle risk factors, socio-economic status, safety, environmental and health system, which are measured by parameters such as literacy rate, smoking prevalence, pollution index and health expenditure.

The NMHI will be developed systematically in 4 steps. Firstly, two systematic reviews will be carried out to review the existing composite health and non-health indices as well as to identify established indicators of men's health. Secondly, NMHI model will be developed based on the systematic reviews and the expert opinions. Thirdly, a Delphi survey will be conducted with men's health key opinion leaders in the world to prioritize the men's health indicators. Fourthly, the NMHI model will be revised and weighted accordingly before pilot testing. The NMHI scores of each country will be ranked and this will be correlated with the various social health determinants to explain the score. We believe that NMHI can serve as a guide for policy makers to identify gaps in men's health and help them to prioritize health policy for men in their country. The NMHI will also allow countries to share experiences and effective strategies with one another and to monitor men's health progress.

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**P127**

**Does multi-disciplinary team (MDT)-working variation impact on cancer patient care experience? Results of a cross-sectional survey in Quebec, Canada**

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**Background**
Multi-disciplinary team (MDT)-working is recognized as a key modality for providing cancer services in the province of Quebec (Canada) and elsewhere [1]. Evidence suggests that the quality of teamworking varies across cancer teams and this may impact on care-providing process, and ultimately on patient care experience [2]. The objective of the study is to evaluate the effects of MDT-working on cancer patients' perceived experience of care.

**Materials and methods**
Data were collected in 2010-11 in 15% of Quebec's oncology outpatient clinics. Sites (n=9) were purposely selected on the basis of the intensity level of MDT (higher or lower). The sample included 1379 adult cancer patients (response rate 80%). Perceived experience of care was documented by means of a self-administered questionnaire divided into six validated sub-scales: timeliness of services (TIM), communication (COM), patient-centered care (PCC), quality of physical environment (QPE), continuity (CONT) and results of care (RES). Multiple logistic regression models were used to estimate the extent to which patients' ratings of their care experience differed between levels of MDT-working.

**Results**
Patients who were treated in clinics where the MDT-working level is high were 3.99 times (95% CI: 1.89-8.41) more likely to rate positively TIM and also more likely to have a positive opinion of COM (OR: 2.37; 95% CI: 2.54-5.49), of PCC (OR: 2.11; 95% CI: 1.05-4.24) and of CONT (OR: 2.18; 95% CI: 1.07-4.47). Patients' perception of QPE and RES were not related to the level of MDT-working. Various patients' characteristics (age, level of education, perceived health status) and organizational attributes (team mandate with regard to oncology services, geographic location, team size) were associated with patients' ratings of their care experience.

**Conclusions**
This study suggests that MDT-working can improve various aspects of perceived patients' care experience. Significant challenges remain in order to draw clear conclusions about the key elements of MDT-working and its benefits and they will be discussed.

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P128

Long-term economic effect of telecare on patients with chronic diseases

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Background Although it is often observed that telecare (e-Health) contributes to the health of the elderly or patients at home, it is difficult to obtain scientifically rigorous evidence to support this. This study aims to examine the long-term effect of telecare implementation on the number of treatment days and the medical expenditure to users with chronic diseases including heart diseases, hypertension, stroke, and diabetes in a project of Nishi-izu Town, Fukushima Prefecture, Japan. The data covers from 2002-2010. The town's telecare system is used to remotely monitor users' health by transmitting health data, such as blood pressure, blood oxygen level, and ECG, to the town’s Health Center.

Materials and methods The method of analysis is to compare the above outcomes of two groups, namely users (treatment) and non-users (control) of the system based on the receipt data issued by the National Health Insurance. Data analyzed is from 2002-2010 on the outcomes for 91 users and 118 non-users. Panel data analysis, in particular the generalized least squares with random-effect model was conducted. The cross-term such as user dummy multiplied by one of chronic diseases was introduced in the estimation equation to examine how telecare affects to users with chronic diseases.

Results The results obtained are as follows: regarding the estimation of treatment days, only heart diseases and hypertension were significant; the treatment days of users who had heart diseases were smaller than non-users by 6.6 days per year (p<0.001), and that of users with hypertension were smaller by 2.0 days (p<0.001). As for medical expenditure, heart diseases and hypertension were significant; the medical expenditure of users with hypertension was smaller by JPY 58,766 (USD 588) per year (p<0.01), and that of users with hypertension was smaller by JPY 21,272 (USD 213) (p<0.01).

Conclusions This study demonstrates the long-term effect of telecare. The results of the authors' previous studies based on five-year data from 2002-2006 of this town showed that the amount of reduction in medical expenditure related to users with heart diseases and hypertension was about JPY 39,081 (USD 391) and JPY 21,859 (USD 219), respectively. These show that the longer telecare is used, the more medical expenditure is reduced for users with these diseases. The amount of reduction in medical expenditure is larger than the annual operational costs of this project, which amounts to about JPY 60,000 (USD 600) per user. This project thus satisfies sustainability criteria.

P129

Trainees’ self-reported challenges in knowledge translation practice and research

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Background Knowledge translation (KT) refers to the process of moving knowledge into healthcare practice and policy. The practice of KT is about helping decision-makers become aware of knowledge and facilitating their use of it in their day-to-day work. The science of KT is about studying the determinants of knowledge use and investigating strategies to support the adoption, implementation, and sustained use of knowledge in healthcare practice and policy. An increasing number of trainees are developing careers in KT practice and/or KT research. Given the infancy of this field, there may be unique challenges that trainees face as they develop their careers in KT. This paper is one of two from a study about KT trainees’ perspectives on KT research and practice. The purpose of this paper was to identify challenges that KT trainees face in their KT practice or research.

Materials and methods This study population was a convenience sample of trainees associated with the KT Trainee Collaborative (KTC) and/or the KT Canada Summer Institutes (KTSI). Trainees affiliated with the KTC and KTSI were emailed a link to a survey through FluidSurveysTM. Descriptive statistics (e.g., frequencies) were calculated for trainee demographics. Thematic analysis was used to analyze open-ended response data related to the following question: What are the major challenges you face in KT practice or KT research? Three investigators independently coded and categorized the data, then met to collaboratively identify, merge, and refine themes.

Results The survey response rate was 62% (44/71) but only 49% (35/71) responded to the challenges question. 51% (18/35) of these respondents reported doing both KT practice and research; 43% (15/35) doing KT research only; and 6% (2/35) doing KT practice only. Trainees identified six major challenges related to their KT work: KT is not recognized as a distinct field of practice or study; colleagues’ limited understanding of KT practice and/or research; competing priorities and limited time (particularly to undertake KT practice); a lack of KT-specific resources (e.g., funding, training opportunities, peers); difficulty collaborating and communicating across sectors and cultures; and the difficulty inherent in investigating KT (e.g., designing and testing multi-level interventions, challenges with adaptation).

Conclusions The findings suggest that KT trainees experience specific challenges in their work, many of which arise because of an under-developed understanding of KT; limited structures/infrastructure to support individuals undertaking KT; and the inherently interdisciplinary nature of KT and the resultant complexities in scientific inquiry in this field.

P130

Identifying emerging priorities in Knowledge Translation from the perspective of trainees

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Background As the Knowledge Translation (KT) field advances, there is an increasing need to identify priorities to help shape future directions for research. An important source of KT priorities is experts’ who are well-established researchers and practitioners. Another potential source for identifying priorities is trainees. Given that many KT trainees are developing their programs of research, understanding their main concerns and priorities for KT research and practice is critical to supporting the development and advancement of KT as a field. The purpose of this study was to identify priorities for research and practice in the KT field from the perspectives of KT researcher and practitioner trainees.

Materials and methods The study population was a convenience sample of trainees who are associated with the KT Trainee Collaborative (KTC) and/or the KT Canada Summer Institutes (KTSI). Trainees affiliated with the KTC and KTSI were emailed a link to a survey through FluidSurveysTM. Descriptive statistics (e.g., frequency) were calculated for trainee demographics. Open-ended survey responses were analysed using qualitative content analysis; these involved trainees’ priorities for KT research (i.e., topics, methods) and their views on KT topics that do not need further exploration. Trainees’ important KT references for researchers/practitioners were also captured.
Results The response rate for the survey was 62% (44/71). Participants were graduate students, post-doctoral fellows, medical residents, and other learners from various disciplines. Ninety-three percent were from Canada and 7% from other countries (USA, UK and Switzerland). Preliminary results suggest research priorities related to: continued KT intervention research, mostly the evaluation of effective KT strategies; a greater focus on novel methodological approaches and innovative strategies; and a better understanding of contextual factors. When asked which topics of KT research/practice do not need further exploration, most indicated the inquiry should be kept broad as KT is a new field; others stated that developing new KT frameworks/models (versus testing/improving current frameworks/models) and simply assessing barriers/facilitators of research use are not advancing the field.

Conclusions This study highlights that in addition to ‘experts’ in KT, understanding the main concerns and priorities for KT research and practice from the perspective of trainees is critical to supporting the development and advancement of KT as a field. The findings suggest an emphasis on evaluation of KT interventions, using novel methods for evaluation. The findings of this study, suggest that KT trainees might impact future KT research and practices by identifying KT research priorities.

P131 How do surgeons make decisions about referral to oncology services?
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Background Our prior population-based research in Nova Scotia, Canada, demonstrated ‘gaps’ in referral practices for oncology patients with potentially curable disease. The objectives of this study were to examine surgeon decision-making related to referral to oncology services for potentially curable non-small-cell lung, breast, or colorectal cancer patients, and to identify the specific factors that influence their decision to refer (or not to refer).

Materials and methods A qualitative study was conducted, guided by the principles of grounded theory. The study design was informed by our ongoing research, as well as a model of access to health services. Data were collected through in-depth, semi-structured interviews with lung, breast, and/or colorectal cancer surgeons in Nova Scotia, Canada. Interviews were collected as a part of a multi-method evaluation, with two investigators coding and analyzing the data. Analysis involved an inductive, grounded approach using constant comparative analysis. Research team meetings were held to discuss preliminary findings and question the data and interpretations. Data collection and analysis continued until theoretical saturation was reached.

Results Seven factors were found to influence surgeon decision-making related to oncology referral, with the magnitude of influence differing depending on their decisional proximity. At the core of surgeon decision-making is the clinical encounter wherein the decision is made. Within this encounter, surgeons consider and negotiate their decision alongside (2) patient beliefs and preferences (e.g., the desire or not for chemotherapy). Surrounding the clinical encounter is a number of important mediating factors: (3) a belief that oncologists are the experts, (4) knowledge of local standards of care, and (5) consultation with oncology colleagues. Making decisions about oncology referral, surgeons were also acutely aware of the outer context in which these decisions occur, including (6) system resources and capacity (e.g., access to staging investigations, technology to facilitate coordination of care) and (7) a need to navigate patient logistics (e.g., drug coverage, transportation/lodging). While factors within this outer context infrequently influence referral decisions in a direct way, they often make dealing with the decision more difficult.

Conclusions The findings of this study contribute to our broader understanding of how surgeons make decisions about oncology referral and provide a basis to design contextually-appropriate strategies to narrow this gap in our province.

P132 Facilitating quality improvement in primary healthcare using performance feedback and action planning
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Background Optimizing primary healthcare requires changes at the system level, including professionals working together using quality improvement strategies, and accessing resources and support to implement these changes. Our team developed a complex intervention to support the transformation of regional primary care into a more integrated model. This intervention, named “COMPAS” (Collectif pour les Meilleures Pratiques et l’Amélioration des Soins et services en médecine de famille), is founded on a comprehensive approach to performance measurement. A focus on population-based assessment of care and action planning is used to facilitate the development of interprofessional and interorganizational collaboration, in order to engage primary care professionals in quality improvement. The objectives of this study were to explain explicitly the theory underlying this intervention, to describe its components in detail and to assess the intervention’s feasibility, acceptability and preliminary outcomes.

Materials and methods A program impact theory-driven evaluation approach was used. Multiple sources of information were examined to make explicit the theory underlying the intervention: 1) a literature review and a review of documents describing the program’s development; 2) regular attendance at the project’s committee meetings; 3) direct observation of the workshops; 4) interviews of workshop participants; and 5) focus groups with workshop facilitators. Qualitative data collected were analyzed using thematic analysis. Information on developed actions plans were also collected to document preliminary outcomes of the intervention.

Results The theoretical basis of the intervention was found to be work motivation theory. Five themes describing the workshop objectives emerged from the qualitative analysis of the interviews conducted with the workshop participants. These five themes were the importance of: 1) adopting a regional perspective, 2) reflecting, 3) recognizing gaps between practice and guidelines, 4) collaborating, and 5) identifying possible practice improvements. The intervention was offered in nine settings and 22 small groups of primary care professionals developed an action plan. The action plans targeted mainly secondary prevention and were congruent with recommendations from guidelines. The most often identified priorities were improvement of systematic clientele follow-up, greater pharmacist participation and support to improve diabetes self-management. However, the lack of time, resources, leadership, or organizational support was a barrier to the implementation of some action plans.

Conclusions Our results confirmed that the intervention enabled professionals to target priorities for practice improvements and to develop action plans that promote improved interprofessional collaboration.

P133 Development of an ecological framework for building successful collaboration between Primary Care and Public Health
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Background Health systems worldwide are interested in determining the best ways for primary care (PC) and public health (PH) to collaborate...
to improve population and system outcomes. Since examples of successful collaborations between PC and PH exist, research is needed to document what has worked and lessons learned. This presentation will describe the development of the Ecological Framework for Building Successful Collaboration Between Primary Care and Public Health. The Framework is the culmination of a four and a half year program of research that aimed to: explore structures and processes required to build successful collaborations between PC and PH; understand the nature of existing collaborations in Canada; and, examine roles that nurses and other providers played in collaborations.

Materials and methods Five consecutive research projects informed the Framework’s development which included: 1) an international scoping literature review; 2) environmental scans in three Canadian provinces; 3) a descriptive interpretive study with key informants from across Canada and PC and PH sectors; 4) Q-sort methodology to identify common viewpoints of stakeholders, and; 5) a multiple case study involving 10 cases in three provinces.

Study settings included British Columbia, Ontario and Nova Scotia and involved direct service providers, policymakers, administrators and managers from PC and PH sectors.

Results The Framework represents the nature of PC and PH collaboration and factors that can influence the development and maintenance of successful collaborations. The nature of collaboration, which is found at the core of the framework, is the structure and context around which the collaboration is formed. Factors influencing collaboration exist at the intrapersonal, interpersonal, organizational and systemic levels.

Conclusions The Framework informs the development and maintenance of successful collaborations between PC and PH and evaluation of collaborations relevant to policy makers, managers and front line providers and may have application to collaborations beyond PC and PH sectors.

P134 Public accountability practices of district health management teams: a realist inquiry in two local health systems in Ghana
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Background In today’s local health systems in low- and middle-income countries, district health management teams, together with local authorities, bear the responsibility for health sector performance. This infra not only a responsibility for coordination of the multiple actors in pluralistic health systems and the organisation of services and programmes, but also for ensuring accountability towards the population. This explorative study appraised actual public accountability practices of district health management teams in two local health systems in Ghana and explored how these could be improved.

Materials and methods We used a comparative case study design based on realist inquiry principles. An initial middle range theory was developed on the basis of a literature review of governance and accountability spanning different social science research traditions. It was tested in one urban and one rural health system. Data collection included in-depth interviews, informal discussions, and review of documents, reports and routine data.

Results In both districts, the health management teams had strong upward accountability systems through which they accounted to the regional and central level authorities of the Ghana Health Service. This accountability was enforced by command-and-control mechanisms such as centrally set priorities and planning directives, audits and performance reviews. In the rural local health system, the district health management team had strong horizontal accountability practices towards the District Assembly and INGOs with whom they collaborate in health service delivery programmes. These relations were based on shared interests and reciprocity. However, in both sites, public accountability strategies or processes were found to be virtually absent. Apart from complaint boxes, there were no formal channels of communication nor for participation of the public in local priority-setting and performance assessment. Procedures through which local health actors could be made accountable towards the public were also found to be absent. As a result, none of the district health management teams achieved full public accountability.

Conclusions The study identified ways to improve public accountability. There is a critical need for more transparency and information sharing with the public. The existing performance appraisals, for instance, should be opened to representatives of the public. Enforcement of accountability practices can be improved by an agent who takes up the role of meta-governor and holds all actors accountable. This role could be played by the district assembly. Channels for effective remedial action need to be created, including health facility boards in which representatives of the public participate.

P135 What factors determine the patients’ care intensity for surgeons and surgical nurses? A conjoint analysis
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Background In the Netherlands more than 50% of the adverse events are related to surgical procedures. Therefore the risks of direct harm and high hospitalization costs are substantial. This makes adequate staffing of surgeons and nurses an important issue on clinical wards as insufficient staffing is related to higher mortality and morbidity rates. Clinical surgeons and nurses sometimes perceive a high workload on their surgical wards, which may influence admission decisions and staffing policy. Yet, it is unclear what the relative contribution is of various patient and care characteristics to the perceived patients’ care intensity and whether differences exist in the perception of surgeons and nurses.

Materials and methods Dutch surgeons and surgical nurses were invited by means of internet and e-mail calls to rate 20 virtual clinical scenarios regarding patient care intensity on a 10-point Likert scale. The scenarios described patients with 5 different surgical conditions: cholelithiasis, a colon tumour, a pancreas tumour, critical leg ischemia, and an unstable vertebral fracture. Each scenario presented a mix of 13 different attributes that possibly influence care intensity, as derived from a systematic literature review. These attributes referred to the patients’ condition, physical symptoms, and admission and discharge circumstances.

Results A total of 82 surgeons and 146 surgical nurses completed the questionnaire, resulting in 4560 rated scenarios and 912 per condition. For surgeons, 6 out of the 13 attributes contributed significantly to care intensity: age, polypharmacy, medical diagnosis, complication level, ICU-stay, and ASA-classification. Conversely, multidisciplinary care did not contribute significantly. For nurses, the same six attributes contributed significantly, but also BMI, nutrition status, admission type, patient dependency, anxiety or delirium during hospitalization, and discharge type. Both professionals ranked ‘complication level’ as having the highest impact.

Conclusions Surgeons and nurses differ in their perception of patient caring intensity. Awareness of these factors may help managers optimise the work processes on clinical wards, in terms of staff planning and aligning the activities of surgeons and nurses. Furthermore, a shared workload language would avail surgeons and nurses in understanding, appreciating and respecting each other’s work. This may eventually have a positive impact on patient safety.

P136 Nurse staffing issues; just the tip of the iceberg
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Background In response to an increasing health care demand due to the rising age and complexity of patients, hospital boards have implemented nurse-to-patient-ratios and patient classification systems. However, on the nursing ward, nurses feel that staffing levels have become critically low, which jeopardises the quality and safety of their patient care. The aim of this study is to obtain in-depth insight into the perceptions of nurses on the current nurse staffing levels in the Netherlands and the use of nurse-to-patient-ratios and patient classification systems.

Materials and methods This qualitative study was undertaken on 24 clinical wards, comprising four specialities (surgery, internal medicine, neurology, obstetrics & gynaecology and paediatrics) in a 1000-bed Dutch university hospital. Four focus groups (n = 44 nurses) and 27 interviews (with 20 head nurses, four nursing directors and three quality advisors) were conducted. Data were collected from September until December 2012.

Results Nurse staffing issues appear to be merely the ‘tip of the iceberg.’ Below the surface three underlying main themes became clear; nursing behaviour, authority, and autonomy, cross-cut by a single overall theme; nurses’ position. In general, nurses’ behaviour, way of thinking, decision-making, and communicating thoughts or information differs from other disciplines like physicians and quality advisors. This results in a perceived and actual lack of authority and autonomy. This in turn hinders them to plead for adequate nurse staffing in order to achieve the common goal of safe and high-quality patient care.

Nurses desired a validated nursing care intensity score as interdisciplinary and objective communication tool that makes nursing care visible and hinders them to plead for adequate nurse staffing in order to achieve the common goal of safe and high-quality patient care.

Conclusions The subservient position of clinical nurses seems the underlying root cause of nurse staffing problems. It is yet unknown whether an objective nursing care intensity score would truly help underlying root cause of nurse staffing problems. It is yet unknown whether an objective nursing care intensity score would truly help underlying root cause of nurse staffing problems.

References
P139
Translation of a gestational diabetes nutrition model of care into practice: results from an implementation project
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Background Reduced need for insulin therapy in Gestational Diabetes Mellitus (GDM) has been documented in a study validating American Nutrition Practice Guidelines, which recommend at least 3 dietitian visits. No Australian GDM Nutrition Practice Guidelines exist and systematic delivery of dietetic care to women with GDM does not occur in Australia. This paper evaluates a theory-informed implementation plan to translate a dietetic model of care based on the American guidelines in an Australian maternity hospital.

Materials and methods The planned implementation consisted of a 9-month pre (usual care)/post (new model of care) design with a month for integration across 2012-2013. Primary outcomes were uptake of the new dietetic schedule (process) and requirement for pharmacotherapy (clinical). Secondary outcomes were change in: staff’s awareness, knowledge, and acceptance of the model, and change in client satisfaction (process), and in dietary indices, physical activity levels, and key maternal and infant outcomes (clinical).

Results Both phases only ran for 7 months; integration required 4 months. Pre-intervention, only one of the 91 women with GDM seen received ≥ 1 dietetic follow-up appointment. Post-intervention, significantly more women (50.6%) received best-practice care (2 reviews) (p = 0.02). However, due to heavy clinical demand, only 31.5 % of the 162 women seen after the change in practice received best-practice individual dietitian review at their first visit. Clinically-relevant trends were seen in changes in medication requirements; the percentage of women requiring pharmacologic treatment decreased from 31.1% to 26.9%. This was more pronounced in women who received best-practice care (25.0% (yes) vs. 27.2% (no)). Only a small change in glycemic index of women’s diet occurred after seeing a dietitian, pre- to post- implementation (-2.0 ± 4.4 vs. -3.0 ± 5.0). However, this was significant between women who received best practice care (-7.9 ± 6.1) and not best practice care (-2.1 ± 4.4, p = 0.014), and also pre-intervention women (p=0.01). Differences in physical activity levels were clinically, but not significantly different (15.5 mins vs 9.8mins/week). Client satisfaction remained high over the project, between 4.3-4.7/5. Staff are currently being surveyed regarding their guideline knowledge and acceptance. Clinical outcomes are currently being explored.

Conclusions This implementation project was successful in increasing the proportion of women seen according to best practice. Service limitations impaired the delivery of optimal care. Partial adherence to the model of care may have attenuated changes in medication requirements and dietary patterns. Full adherence may have resulted in even greater changes.

P140
Can we get the benefits of integrated services? An evaluation of the delivery of integrated prenatal HIV, syphilis and hepatitis B testing services in China
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Background Integration of services for prevention of mother-to-child transmission (PMTCT) of HIV into routine maternal and child health care has been promoted as a priority strategy by WHO to help optimize health outcomes for mother and children [1]. However, integrated services require a shift in the management model from providing stand-alone services to integrating services, which requires more complex management [2]. China initiated the process of integrating prenatal HIV, syphilis and hepatitis B testing services in 2009, and many health agencies need to work together [3]. So this study is to evaluate the effectiveness of the current integrated services and examine barriers to coordination in this complicated service system in China.

Materials and methods The research was conducted in Guangdong province, used mixed quantitative and qualitative methods. We drew quantitative data from routine monitoring system for PMTCT and a quantitative survey; and collected interviews for qualitative data to assess and examine barriers.

Results The testing rates of prenatal HIV, syphilis and hepatitis testing were 95%, 47% and 47% respectively, which were inconsistent, although the three testing services have been integrated. For the prenatal HIV testing service, it took an average of one month to get results because of multi-agency referrals. In addition, almost 80% of the positive mothers were not referred to the hospitals for continuous monitoring and treatment services. The reasons behind these statistics are that the responsibilities assigned to the different health agencies were not clear, and outcome evaluation was not consistent among different health agencies. There was a lack of concrete coordination and referral scheme which must be built on the basis of effective collaboration and communication between different health agencies.

Conclusions The results indicate that the benefits of integrated services have not been completely achieved in China. The many barriers to coordination in a complex health service system form a great challenge to effective delivery of integrated services. A concrete operational strategy is needed to fill the gap in order to achieve the desirable outcomes from integrated services.

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The TRiADs framework has been applied to eight guidance topics. Findings have informed the guidance development process for all. For three topics (decontamination; oral health assessment; drug prescribing), KT interventions have been evaluated in randomised controlled trials embedded within routine service delivery. The TRiADs framework enables a timely assessment of the impact of each SDCEP guidance document and a theoretically informed approach to the need for and choice of additional KT interventions. TRiADs informs dental practitioners, policy-makers and patients on how best to transform guidance recommendations into routine clinical activities. In addition, although based in primary dental care and focused on SDCEP guidance, the generalizability of the TRiADs framework is being explored within primary care optometry and pharmacy.

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References

P143 Effort-reward imbalance among medical students and physicians
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Background Effort-reward imbalance (ERI) is recognized as a risk factor for work stress and burnout. In the process of becoming a doctor, students of medicine face different challenges compared to practicing medics. In this study we focus on how the different challenges of study life and work life of medics have a bearing on the effort-reward imbalance.

Materials and methods The questionnaire used for the practicing medics was the effort-reward-imbalance (ERI) model of Siegrist et al. The questionnaire used for the students survey was the effort-reward-imbalance (ERI) model for school and student settings. The ERI scores on a 5-point Likert scale.

In total, N = 716 medical students completed the questionnaire (65.4% female, 34.6% male). 61% of the students were in their pre-clinical term, 39% in their clinical term. The practicing medics sample had a total of N = 120 (60.2% female, 39.8% male).

Results The negative consequences of the ERI develop from domination of the "effort" in relation to the "reward" (ER-ratio > 1). The medical student sample had a validity total of N=680, with a minimum of 0.2 and a maximum of 2.2. The average throughout the sample was 0.91 with a standard deviation of 0.316. 66.9% of the sample was below the ERI-Cut off and 33.1% were above the Cut off. The pre-clinical students did have an average of 0.935. The clinical students scored had an average of 0.884. The practicing medics sample had a validity total of N=106, with a minimum of 0.5 and a maximum of 2.5. The average throughout the sample was 1.36 with a standard deviation of 0.376. The major group of the sample was above the ERI-Cut off (90.1%); just 9.9% of the sample were below.

Conclusions The average shows a large imbalance between effort and reward, with a clear domination of "effort" within the practicing medics' sample. The medical student sample is below the ERI-Ratio Cut off (>1). The comparison between the averages of the pre-clinical students (0.935), the clinical students (0.884) and the practicing medics (1.36) show interesting dynamics. The lowest average (clinical section of the study) is located in a time when the students are getting more and more into social exchange by being split into different courses with practical tasks and exercises. In comparison, the highest average (practicing medics) is located in a time when social interaction with peers is reduced because workplace issues require more time in everyday work life.

Funding No funding was received for this project.

P144 Comparing income inequalities in healthcare utilization in the low income community in suburban Kuala Lumpur and Malaysia
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Background This paper aims to measure and compare income inequalities in healthcare utilization in the low income community in suburban Kuala Lumpur as compared to the national population level in Malaysia. The prevalence of those who sought outpatient treatment for acute and chronic illnesses and also prevalence of inpatient admission in both public and private health facilities were compared.

Materials and methods The data consists of 3722 respondents from four Projek Perumahan Rakyat (PPR) among the low income community in suburban Kuala Lumpur and compared with data from the National Health and Morbidity Survey in 2006 consisting of 13,637 households with 56,710 respondents. The income inequalities are explored using concentration index (CI) with CI values below zero indicating pro-poor inequality whereas CI values above zero indicating pro-rich inequality.

Results For the low income community, analysis across ranked monthly household income reveals that in government-led public healthcare facilities, inequalities in outpatient attendances and inpatient admission to be in favor of the lower socioeconomic groups with CI values of -0.0874 and -0.0636 respectively (as compared to -0.1722 and -0.0869 at the national level). By contrast, in private healthcare facilities, inequalities in outpatient attendances and inpatient admission clearly to be in favor of the higher socioeconomic groups with significant CI values of 0.2090 and 0.2309 respectively (as compared to 0.1851 and 0.5176 at the national level).

Conclusion The low income community clearly has higher need for healthcare especially with rising prevalence of chronic illnesses and non-communicable diseases. As such, a pro-poor inequality is expected to exist in the utilization of healthcare in public healthcare facilities. Since similar patterns of utilization are observed both at the low income community level and national level, the lower socioeconomic groups are found to be benefiting through sufficient targeting of healthcare resources in Malaysia.

P145 Mobility of Spanish nurses in a globalized labor market: the impact on health
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This abstract attempts to provide a framework to discuss the impact of Spanish nurses' mobility on health systems by changing the composition of the health workforce in both sending (Spain) and receiving countries (other European countries) [1]. These gains and losses may strengthen or weaken the performance of health systems and, while they may seem negligible, produce visible impacts when numbers increase or through continuous mobility over years.

A survey conducted by the Spanish Council of Nursing Colleges show that nurses’ most significant problem is unemployment, where there were about 21,000 unemployed nurses in 2013, this figure has increased by 209% in the last four years, and it is predicted that there will be more than 75,000 unemployed nurses within five years [2]. Currently nearly 7,000 nurses are working in other countries.

In Europe the demand for nursing is rising as a result of an ageing population; hospitalized patients tend to be much sicker than they used to be and need a higher level of care and as the work is tougher, many experienced nurses are taking early retirement. Spain is training outstanding professionals. It’s a problem that they leave Spain where there is a shortage of nurses, and many hospitals have to cope with minimum staffing levels. Spain has about 3.41 nurses for every 1,000 inhabitants, compared to 7.97 in the rest of the
EU [3]. The principal reason to emigrate is human resources cuts in the Spanish healthcare sector, caused by the crisis. This, coupled with deep spending cuts in health, results in nurses working under temporary contracts with little hope of a permanent position in a hospital and is prompting growing numbers of young nurses, whose training has cost the country millions of Euros (the cost of training a nurse is around €120,000 Euros), to leave to work abroad. Thus, Spain faces a scientific as well as economic loss. The forecast for the next few next years are not at all optimistic. The country is failing to capitalize on highly qualified professionals and the full recovery from this situation will need, at least, a decade.

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P146

Patients’ experiences with intensive combination treatment strategies for early rheumatoid arthritis: a longitudinal qualitative application of ICTS in daily clinical practice for eRA.

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Background

The current recommendations for early Rheumatoid Arthritis (eRA) management focus on achieving clinical remission as soon as possible with an early and intensive treatment. Interventions tailored to prospectively identify barriers for the provision of early and intensive treatment are more likely to improve healthcare professionals’ adherence to treatment guidelines and to change practice in order to reflect current best evidence. The objective of this study was to explore the barriers and their relative importance for the provision of intensive combination treatment strategies (ICTS) in eRA from the healthcare professionals’ perspective.

Materials and methods

Individual semi-structured interviews were conducted with 26 rheumatologists and 6 nurses participating in the CareRA trial. The CareRA trial is a Flemish multicentre RCT comparing different ICTS for eRA based on synthetic disease-modifying antirheumatic drugs in combination with a step-down glucocorticoid bridging scheme. Each interview was audio-taped, transcribed literally and thematically coded using the constant comparative method. The barriers identified from the interviews were incorporated in a Maximum Difference Scaling (MDS) survey, which was completed by 66 Flemish rheumatologists (response rate 44%). The MDS survey included 25 choice sets, each of which contained a different set of 4 barriers. In each choice situation, the rheumatologists were asked to select the most important barrier in their opinion. The mean relative importance score for each barrier was calculated using hierarchical Bayes modeling (Sawtooth Software’s SSI Web platform, version 8.2.0).

Results

An initial list of 25 barriers emerged out of the interviews, including 10 treatment-, 4 healthcare professional-, 4 patient- and 7 environment-related barriers. The most important barriers identified from the MDS survey were: contraindication for some patients (e.g., patients with comorbidities, older patients); increased risk of side effects and related complications; and having to deal with patients’ resistance.

Conclusions

Concerns regarding the suitability of ICTS for the individual patient and the complexity of prescribing a combination therapy including glucocorticoids were the most important barriers, highlighting the complexity of implementing ICTS for eRA in daily clinical practice. Implementation strategies for ICTS in daily practice should focus on physicians’ familiarity with the treatment strategies and patient education.

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P148

Using performance-based financing (PBF) to motivate health commodity supply chain improvement at a central medical store in Mozambique

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Background

The predominant model of public health commodity supply chains in developing countries is one dominated by a central...
medical store (CMS). In this model, the CMS plays the pivotal role of procurement, storage and warehousing of all health commodities before they are distributed to the next level in the supply chain. Challenges with technical and organization capacity at the CMS level has led to longstanding difficulties in creating sustainable performance improvements in several countries. In Mozambique, the central medical store (Central de Medicamentos e Artigos Médicos-CMAM) receives significant US government support (through USAID) for both health commodities and technical assistance. We tested the effectiveness of a PBF scheme between CMAM and USAID, to improve the functioning of the CMS in Mozambique.

Materials and methods In January 2013, USAID entered into a year-long government to government grant arrangement that conditions disbursement of tranches of USAID support on specific results at CMAM. The disbursements would take the form of a fixed amount reimbursement award (FARA) of up to $125,000 per quarter ($500,000 per year) if CMAM could demonstrate meeting quarterly targets on six performance indicators. These indicators were related to planning, distribution, and warehouse management. The aim of the PBF program was to spur innovation, hard work and improve warehousing.

We hypothesized that the incentive would lead to improvements through three pathways:
1. Improved staff motivation and morale due to individual or group bonus payments
2. Improved collaboration between and within CMAM departments due to the need for cooperation among departments in order to achieve the performance targets, and
3. Increased targeted investments in infrastructure, systems and human resources, due to the additional funds available to CMAM through the grant.

Indicators were selected in areas where change had previously been difficult to achieve, where baseline data could be collected, where performance was entirely under CMAM’s control, and for which measurable targets could be set and achieved within 1 year of the program. Baseline data was collected in the last quarter of 2012.

Results and conclusions We found improvements in all indicators over one year. Matching records of stock status reports and physical counts improved from 70% at baseline to over 85% by 2013. There were improvements in picking accuracy, order cycle times and distribution planning. The incentive led to better collaboration between CMAM departments.

We found process improvements due to the PBF scheme, possibly leading to increased availability of health commodities.

P149 Public health approach of clinical trials: Cuban’s experience of research translation into clinical practice
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BMC Health Services Research 2014, 14(Suppl 2):P149

Background Controlled Clinical Trials are the Gold Standard to assess the efficacy and safety of a new therapeutic intervention. Furthermore, their results are used to make decisions in relation to public health issues [1]. This study describes the experience of the National Centre of Clinical Trials (CENCEC) of Cuba [2] introducing research results into medical practice, extending new therapeutic technologies, identifying barriers to the translation of research into medical practice, improving the evidence for making decisions in public health and improving the delivery of medical services [3].

Material and methods All trials led by CENCEC from 1992 to 2013 were characterized according to specific variables. A review of available information at the Cuban Regulatory Agency regarding the registration process of new drugs was performed. Interviews to sponsors, clinical investigators and health authorities were carried out to identify products registered outside the country, health benefits and impact of the results of clinical trials conducted by CENCEC.

Results In this period, 133 clinical trials were completed evaluating 58 products from 28 sponsors, with participation of 1075 clinical sites from 90 hospitals and 60 primary care health care units involving 4241 researchers. Some of those studies were performed for the evaluation of health technologies and to search evidence for public health decisions. The activities of CENCEC were carried out according to international standards: Quality Assurance System Certificated (ISO 9001:2008), Cuban Public Registry of Clinical Trials (WHO Primary registry [4]) and role as regional coordinator of Good Clinical Practices Working Group (PANDRHA) among others.

The benefits of “new intervention” clinical trials were related to morbidity and mortality rates, new patterns of disease management, better infrastructure of clinical sites, improvement of the quality of medical care, the introduction of new technologies and the building of capacity of clinical investigators [5].

Conclusions The experience of Cuba, a low income country with a defined health policy, shows that the results of clinical trials are an effective tool to improve health services and for an efficient introduction of evidence in medical practice, for decision making in public health leading to improvements in clinical care. The experience gained could be applied in other countries of Latin America to achieve public health goals.

References
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P150 Scientific meetings within a Benin Teaching Hospital: what type of research is being done? A pilot initiative to identify needs of health services research in a resource-limited country
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Background Research in health services is of huge concern especially in developing settings as economic issues and human resources management are critical in the context of the global financial crisis. The aim of this study is to evaluate the types of research done in a Military Teaching Hospital and hence identify the need for health services research in a resource-constrained environment.

Material and methods All presentations made during scientific meetings from June 2011 to December 2013 were reviewed and their domains of study (research) were identified. Scientific meetings at a Military Teaching Hospital were organized, in order to promote research within Benin Armed Forces Health Services, through monthly meetings. Semester and annual planning was done for presentations as each department was asked to propose 2 research conclusions per year. Research conclusions were programmed and presented as well as their perspectives.

Results During this period (30 months), 31 sessions were organized and 61 presentations were done. Speakers were from clinical, surgical, public health and administrative departments (17 in total), and were physicians (56%), health administrators (3%), public health specialists (26%), and human and social sciences specialists (13%). The research domains were enhancing care practices (61%), collaborative research between departments (13%), health economics (16%), and human resources management (10%). The perspectives identified were mainly researchers training in methodology, focusing health services research on health economics especially in cost-analysis, improving health services organization in order to increase service performance.
Conclusions This original initiative in Benin Health services has shown the features of research in health services especially in a referral hospital. As training in health services research methodology and health economics are objectives to be attained, future planning will take into account a better overview of Benin Armed Forces Health Services and serve as a gold standard for the National Health Services in Benin.