HARC
Better hospitals through better research

HARC eBulletin

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In this edition of the HARC eBulletin we highlight new evidence that can help clinicians, policy makers and health services managers consider ways to improve the quality of our health system. The topics covered include: *how to reduce hospital acquired infections*; *innovations to reduce costs without compromising quality*; *disinvesting healthcare interventions that no longer work;* and *public reporting of health system performance*. The reviews, studies and reports covered have been produced by researchers with skills in monitoring and evaluating healthcare – who also have an interest in providing new and important evidence to support system redesign. We hope that this eBulletin provokes ideas in our research community for new lines of enquiry that will provide new Australian evidence to support our reform processes.

One aspect of the recent healthcare reforms in the United States that has not received a great deal attention in the popular press, but has huge implications for increasing knowledge about how to improve quality of care, is the new Center for Medicare and Medicaid Innovation (see story below). This new center is charged with harnessing the combined contributions of managers, clinicians, policy makers and researchers to develop and rigorously trial innovations in a systematic and sustainable way.

HARC will be keeping a close eye on how this new model for embedding research within health system reform evolves and the evidence that is produced.

Mary Haines,
Health Services Research Director

This eBulletin is produced by the HARC Office at the Sax Institute.

Review Round-up

Trends in publications regarding evidence-practice gaps – more studies with clinician engagement needed

Despite widespread acceptance of evidence-based recommendations by the medical community, there remains an evidence-practice gap in the sense that many clinical guidelines have not been fully implemented in clinical practice. Well-designed trials of strategies to improve adherence to clinical practice guidelines are needed to close these persistent evidence-practice gaps.

This systematic review, published in *Implementation Science*, examined trends in evidence-practice gap publications over a 10 year period from January 1998 to December 2007. A total of 1,151 publications were identified covering nine selected evidence-based guidelines. Articles were categorised as intervention or non-intervention studies. Intervention studies were further sub-divided depending on whether they were patient or clinician targeted.

169 intervention trials designed to improve adherence to well established clinical guidelines comprised 15% of the total number of evidence-practice gap studies, averaging 1.9 studies per topic area per year. The number of studies did not increase significantly over time. The split between intervention trials intended for patients and those intended for clinicians was roughly equal (51% vs. 49%). Only 28 of the 82 interventions targeting clinicians met the Effective Practice and Organization of Care (EPOC) criteria for adequate design. The median consent-rate for well-designed studies targeting clinician adherence to best practice was lower than hypothesised at 60%. The authors conclude that there are *"small numbers of well-designed intervention trials and low rates of physician participation in these trials"*.

Evensen AE, Sanson-Fisher R, D'Este C & Fitzgerald M. Trends in publications regarding evidence-practice gaps: A literature review. Implementation Science 2010; 5: 11. Click here for the full review

The views of patients and carers in treatment decision making for chronic kidney disease

Clinical guidelines widely recommend that treatment options for patients with chronic kidney disease should include the preference of a fully informed patient. Thousands of patients each year progress to end stage kidney disease requiring transplantation, dialysis or palliative care. In most cases this progression can be anticipated allowing patients' preferences for treatment to be incorporated into their care yet data suggests that patients are not given sufficient information or time to adequately consider treatment options.

Published in the *British Medical* Journal, this systematic review of qualitative studies of decision making and choice for dialysis, transplantation and palliative care thematically synthesised the views of patients and carers to determine which factors influence treatment decisions. 18 studies reporting the experiences of 375 patients and 87 carers were included, of which 14 focused on preferences for dialysis modality, three focused on transplantation and one focused on palliative management. Treatment choices were made according to four major themes: confronting mortality; lack of choice; gaining knowledge of options; and weighing alternatives. In addition, the synthesis revealed three major factors that influenced decision making over and above the findings from the primary studies, namely: the impact of peers on decision making; problematic timing of information presented (when patients were too sick to make sense of it); and the desire to maintain the status quo.

Morton RL, Tong A, Howard K, et al. The views of patients and carers in treatment decision making for chronic kidney disease: a systematic review and thematic synthesis of qualitative studies. BMJ 2010; 340: c112. Click here for the full review

Home-based versus centre-based cardiac rehabilitation – equally effective

Heart disease is one of the most common causes of premature death and ill-health and is a burden on the health care system. Traditionally, centre-based cardiac rehabilitation programs are offered to patients after cardiac events to aid recovery and prevent further cardiac illness. More recently, home-based cardiac rehabilitation programs have been introduced to try and increase access and participation.

The aim of this Cochrane review was to determine the effectiveness of home-based cardiac rehabilitation programmes compared with supervised centre-based cardiac rehabilitation on mortality and morbidity, health-related quality of life and modifiable cardiac risk factors. Twelve randomised controlled trials (1,938 participants) met the inclusion criteria, the majority of which recruited lower risk patients. Patient outcomes did not differ between the two types of programs which offered similar benefits on mortality, cardiac events, health related quality of life and modifiable risk factors. Furthermore, there was no consistent difference in costs between home-based verses centre-based rehabilitation. There was weak evidence to suggest that home-based interventions were associated with a higher level of adherence leading the authors to conclude that *"home and centre-based rehabilitation appear to be equally effective in improving clinical and health-related quality of life"* and that they *"...may have an impact on uptake of cardiac rehabilitation in the individual case"*.

Taylor RS, Dalal H, Jolly K et al. Home-based versus centre-based cardiac rehabilitation (Review). The Cochrane Collaboration 2010. Published by John Wiley & Sons Ltd. Click here for the full review

Health system report cards – a scoping review

Health system quality reporting in the form of report cards is an increasingly common tool in the efforts to increase accountability, improve efficiency, attract consumers and even determine funding. As such it is important that report cards are valid and accurately reflect the quality of healthcare being provided. This has led to an extensive body of literature that has not yet been characterised.

This review, published in *Implementation Science*, used a scoping methodology to systematically asses the breadth of the literature on health system quality reporting from 1980 to November 2008. A total of 10,102 articles were identified, of which 1,222 met the inclusion criteria. The majority of the literature pertained to four broad levels of health care:

system (n=328); facility (n=443); group (n=159); or individual (n=167). The most common theme concerned methodological issues in the development of report cards (n=815) with other studies focussing on: effectiveness (n=194); stakeholder views (n=144) and ethical issues (n=69). There was considerable variation in the number of article published across different clinical areas with the majority of studies conducted in the US (65%). A further 15% of studies originated in the UK and Europe, 7% in Canada and only 2% in Australia and New Zealand. The authors conclude that the scoping review methodology enabled them to *"characterize and catalogue the extensive body of literature pertaining to health system report cards"* and develop a *"literature repository that can be of use to researchers and health system stakeholders interested in the topic of health system quality and reporting"*.

Brien SE, Lorenzetti DL, Lewis S et al. Overview of a formal scoping review on health system report cards. Implementation Science 2010; 5: 2. Click here for the full review

Research Round-up

MRSA spread by patients moving between hospitals

Staphylococcus aureus (S. aureus) is one of the most important human pathogens: between 25 – 35% of healthy humans carry *S. aureus* on the skin and any injury that breaks the surface of the skin, including trauma, medical or surgical interventions, as well as viral infections, can lead to tissue invasion. *S. aureus* may be methicillin-susceptible (MSSA) thus treatable with antibiotics or methicillin-resistant (MRSA). MRSA is a major cause of hospital and community-acquired infection. MRSAs can cause both local and disseminated infection and can potentially be lethal.

The purpose of this study, published in *PLoS Medicine*, was to find out more about the distribution of different strains of *S. aureus* to determine how MRSA spreads. Data were collected from 357 laboratories serving 450 hospitals in 26 European countries between September 2006 and February 2007 from a total of 2,890 patients with invasive *S. aureus* infection. *Spa* gene typing revealed that the genetic diversity of MRSA differed considerably between countries and dominant MRSA strains were geographically concentrated: 13 of the 15 major MRSA *spa* types occurred in geographical clusters, and were typically hospital acquired, in comparison with only 5 of the 27 major MSSA *spa* types. The authors conclude that *'MRSA, rather than spreading freely in the community, diffuses through regional health care networks'* and that 'M*RSA appears to be spread by patients who ping-pong around between hospitals... often frail or elderly people with on-going health problems'.* The findings indicate that doctors should try to identify people who often move between hospitals or other health care institutions and they should be screened for MRSA.

Grundmann H, Aanensen DM, van den Wijngaard CC et al. Geographic Distribution of *Staphylococcus auerus* Causing Invasive infections in Europe: a Molecular-Epidemiological Analysis. PLoS Medicine 2010; 7 (1): 1-15. Please click here for the full article [cited 2010 March 25]

Intervention produces sustainable reductions in catheter related blood stream infections

There are an estimated 82,000 catheter related bloodstream infections and up to 28,000 attributable deaths in Intensive Care Units (ICUs) annually at an approximate cost of US$45,000 per infection. An ongoing US quality improvement project, known as the Michigan Health & Hospital Association (MHA) Keystone ICU project, substantially reduced these infections in 103 participating ICUs by using a conceptual model to increase the use of five evidence based interventions and improve safety culture. Four recommendations related to insertion of the catheter: hand washing; using full barrier precautions; cleaning the skin with chlorhexidine; and avoiding the femoral site when possible. The fifth recommendation was to remove unnecessary catheters. Eighteen months after implementation, infections rates had decreased by 66% from baseline.

The aim of this observational, collaborative cohort study, published in the *British Medical Journal*, was to evaluate the extent to which intensive care units participating in the initial Keystone ICU project sustained reductions in rates of catheter related bloodstream infections

from 19-36 months after the intervention. The main outcome measure was the quarterly rate of catheter related bloodstream infections per 1000 catheter days. Ninety of the initial 103 original intensive care units (87%) participated in the follow-up study reporting on over 300,000 catheter days. Mean rates of catheter related bloodstream infection decreased from 7.7 at baseline to 1.3 at 16-18 months and continued to fall to 1.1 at 24-36 months post-intervention demonstrating that the reduced rates of bloodstream infection achieved in the initial evaluation period of the Keystone ICU project were sustained for an additional 18 months. The authors conclude that '*Broad use of this intervention with achievement of similar results could substantially reduce the morbidity and costs associated with catheter related bloodstream infections.'*

Pronovost PJ, Goeschel CA, Colantuoni E et al. Sustaining reductions in catheter related bloodstream infections in Michigan intensive care units: observational study. BMJ 2010; 340: c309. Please click here for the full article [cited 2010 March 25]

Public reporting of discharge planning does not reduce unnecessary readmissions

The call to improve quality of care whilst at the same time reducing costs is a common healthcare theme. Reducing unnecessary hospital readmissions is one opportunity where both goals can be achieved simultaneously. However, previous studies have reported large variations in readmission rates among hospitals and noted problems with the transition from hospital to ambulatory care including: poor communication of discharge instructions; failure to reconcile hospital and ambulatory care records; and failure to arrange for appropriate ambulatory care follow-up. In the US, the Centers for Medicare and Medicaid Services (CMS) has initiated a national effort to measure and publicly report on the conduct of hospital discharge planning.

This study, published in *The New England Journal of Medicine*, examined hospital performance using data from 2222 hospitals that reported performance using both chart-based and patient-reported discharge measures. The association between performance on these measures and rates of readmission for congestive heart failure (CHF) and pneumonia was examined. No association was found between performance on the chart-based method and readmission rates for patients with CHF for hospitals in the highest vs. the lowest quartile (23.7% vs. 23.5%). A very modest association was found between the patient-reported measure and readmission rates for CHF (22.4% vs. 24.7%) and pneumonia (17.5% vs. 19.5%) for highest versus lowest performing hospitals. The authors conclude that *'current efforts to collect and publicly report data on discharge planning are unlikely to yield large reductions in unnecessary readmissions'*.

Jha AK, Orav EJ & Epstein AM. Public Reporting of Discharge Planning and Rates of Readmissions. NEJM 2009; 361 (27): 2637-2645. Please click here for the full article [cited 2010 March 25]

Low hospital cost of care does not result in low quality of care

Some experts are concerned that the increasing pressure on hospitals to lower the cost of care will adversely affect quality of care. They suggest that this approach is 'penny-wise and pound-foolish' and that low-cost hospitals discharge patients sooner resulting in increased readmission rates and higher hospital cost of care over time.

This observational cross-sectional study of more than 3000 US hospitals discharging Medicare patients for congestive heart failure (CHF) or pneumonia in 2006 examined the association between hospital cost of care and four variables: process quality of care; 30 day mortality rates; readmission rates; and 6 month inpatient cost of care.

The results, published in the *Archives of Internal Medicine*, demonstrated large variations in hospitals' cost of care for patients with CHF or pneumonia and these costs remained stable over time. The relationship between hospitals' cost of care, quality of care and patient outcomes were small and inconsistent. For CHF high-costs correlated with higher quality of care scores (89.9% vs. 85.5%) and lower mortality (9.8% vs. 10.8%). The opposite result was found for pneumonia namely that: high-cost hospitals had lower quality of care scores compared with low-cost hospitals (85.7% vs. 86.6%). The authors conclude that there is *'limited evidence to support the penny-wise and pound foolish hypothesis'*.

Chen LM, Jha AK, Guterman S et al. Hospital Cost of Care, Quality of Care and Readmission Rates: Penny-Wise and Pound-Foolish? Arch Intern Med 2010; 170 (4): 340 – 346. Please click here for the full article [cited 2010 March 25]

Surgery admission unit improves bed management for major elective surgery

The provision of inpatient beds is central to the acute hospital service and effective bed management is critical if hospitals are to meet demand for inpatient admissions whether from the Emergency Department or for elective surgery.

The aim of this study, published in *BMC Health Services Research*, was to evaluate the effectiveness of a Surgery Admission Unit for major elective surgery patients. The unit was comprised of 10 treatment chairs located in three hospital wards coordinated and organised by nurses who conducted preoperative preparation. In general, patients were admitted two hours prior to surgery. Global length of stay, pre-surgery length of stay, proportion of patients admitted on the same day as surgery and number of cancellations was assessed for 6,053 patients admitted to a 900 bed university tertiary hospital in Barcelona, Spain: 3,003 admissions between 1 September and 31 December 2006 prior to the implementation of the Surgery Admission Unit and 3,050 admissions between 1 September and 31 December 2008 post-implementation.

The Surgery Admission Unit resulted in a significant reduction in both global (6.2 days vs. 5.5 days) and pre-surgery (0.46 days vs. 0.29 days) length of stay. The proportion of patients admitted for same-day surgery increased from 67% to 76%. Additionally, the number of cancelled interventions due to insufficient preparation fell from 31 patients in 2006 to 7 patients in 2008. The authors conclude that '*the implementation of a Surgery Admission Unit for patients undergoing major elective surgery has proved to be an efficient strategy for improving bed management. It has enabled an improvement in the proportion of patients admitted on the same day as surgery and a shortened length of stay'*.

Ortiga B, Capdevila C, Salazar A et al. Effectiveness of a Surgery Admission Unit for patients undergoing major elective surgery in a tertiary university hospital. BMC Health Service Research 2010; 10: 23. Please click here for the full article [cited 2010 March 25]

Report Round-up

Windows into Safety and Quality in Health Care 2009

This is the second in a series of reports by The Australian Commission on Safety and Quality in Healthcare. The report is guided by the principal that safe, high quality health care should be patient focused, driven by information and organised for safety. As well as a brief update on topics considered in the 2008 report, there is a focus on the role of measuring and reporting in improving healthcare safety and quality covering various issues such as: recognising and responding to clinical deterioration; and sentinel event data from both public and private sector hospitals.

The full report is available here

The 2010 Intergenerational Report

The third intergenerational report, published in February provides updated projections of how much the ageing of our population will escalate healthcare costs. The proportion of people aged 65 years or over is projected to increase from 13 per cent in 2010 to 23 per cent by June 2050. Escalating health costs associated with technological enhancements, such as new medicines, and increasing demand for higher quality services, will add to fiscal pressures from ageing. Total spending directed to health, age-related pensions and aged care will rise from around a quarter in 2010 to around by 2049-50. From 2009-10 to 2049-50, real health spending on those aged over 65 years is expected to increase around seven-fold. Over the same period, real spending on those aged over 85 years is expected to increase around twelve-fold. With regard to healthcare this report recommends "Health reform is required so

that every dollar will buy more and better quality health services".

The full report is available online

Health at a Glance 2009: OECD indicators

The fifth edition of Health at a Glance from the Organisation for Economic Co-operation and Development (OECD) provides the latest comparable data on aspects of health system performance in OECD countries. Key indicators provide information on: health status; determinants of health; health care activities; quality of care for a range of conditions; and health expenditure and financing, and demonstrate striking evidence of large variations across countries. New in this edition are chapters on the health workforce and access to care.

The full report can be downloaded as a free web book

Measurement Framework: Evaluating Efficiency Across Patient-Focused Episodes of Care

Health care spending per capita in the United States is more than double that of other industrialised nations, yet the US ranks comparatively low on key indicators of quality of care and population health status. Inefficiencies and widespread regional practice variations plague the system. Performance measurement is essential to system transformation. To provide guidance to key stakeholder groups in accelerating toward a high-performing, high-value healthcare system, the National Quality Forum (NQF) convened a Steering Committee to develop a framework for evaluating the efficiency of patient-focused episodes of care. This report presents the NQF-endorsed measurement framework for assessing efficiency, and ultimately value, associated with the care over the course of an episode of illness.

The full report is available from the Commonwealth Fund here

Unmet Needs Teaching Physicians to Provide Safe Patient Care

Issued by the US National Patient Safety Foundation, this report of the Lucien Leape Institute Expert Roundtable on Medical Education Reform suggests that substantive improvements in patient safety will be difficult to achieve without major medical education reform at the medical school and residency training program levels. The report makes 12 recommendations as to how this reform can be achieved under three key categories: setting the right organization context; strategies for teaching patient safety; and leveraging change.

Click here for the full report

What Are People Talking About?

Medicare's opportunity to encourage innovation in health care delivery

With Medicare payments in the US cut by 21% on March 1 2010 and predictions that the US Hospital Insurance Trust Fund will become insolvent by 2017 there is a need for a new structure to support innovation within the healthcare system. This perspective piece in the *New England Journal of Medicine* outlines one Congressional reform proposal to establish a new Center for Medicare and Medicaid Innovation (CMI), the aim of which is to facilitate beneficial delivery-system changes by testing innovative payment and service-delivery models designed to reduce Medicare and Medicaid expenditures while preserving quality of care. The authors argue that the CMI with its focus on developing and trialling innovations that will yield benefits over a longer time horizon will strengthen both the health system and the evidence base to support future developments.

The full article can be read here

Disinvesting healthcare services that no longer work

A recent Editor's Choice in the British Medical Journal touches on the difficult subject of how we

can stop providing unnecessary services and interventions in order to save money and improve care. Suggestions for disinvestment come from numerous medical specialties regarding services that could be trimmed. Examples include stopping procedures such as: endoscopy in people with trivial gastrointestinal bleeds; caesarean sections without medical indication; or routine panels of laboratory tests. On the flip side there are also ideas that could be categorised as "investing to disinvest" including wider provision of some services to cut costs further down the line and restructuring of available resources to improve access to care. Readers are invited to send accounts of money saving and quality improving efforts to the BMJ.

Click here for the full editorial

Reducing avoidable hospital readmissions: an action guide

Reducing avoidable hospital readmissions is an opportunity to improve quality and reduce costs in the health care system. The new Health Care Leader Action Guide to Reduce Avoidable Readmissions, funded and produced by The Commonwealth Fund, the John A. Hartford Foundation, and the Health Research & Educational Trust (HRET) of the American Hospital Association, is designed to serve as a starting point for hospital leaders to assess, prioritize, implement, and monitor strategies to reduce unplanned readmissions. The guide outlines four key steps for hospital leaders: 1) examine your hospital's current state of readmissions; 2) assess and prioritize your improvement opportunities; 3) develop an action plan of strategies to implement; and 4) monitor your hospital's progress. In addition, it synthesizes the underlying strategies of interventions that have been successful in reducing unplanned readmissions, and evaluates the level of effort required to implement these strategies.

Practical challenges of introducing the WHO surgical checklist

The World Health Organisation (WHO) surgical checklist to reduce preventable adverse events during surgery was developed as part of an initiative to improve patient safety. The UK National Patient Safety Agency made implementation of the checklist mandatory for all NHS trusts in England and Wales by February 2010. This analysis piece, published in the *British Medical Journal*, outlines the experiences of a UK pilot project to implement the checklist in two operating theatres. The implementation process, initial reactions, benefits, and barriers and challenges are outlined. The authors note that when poorly used the checklist can potentially have a detrimental effect on safety and teamwork in the operating theatre and the findings suggest that developing local champions, organisational leadership and training are all crucial steps necessary for successful implementation.

The full piece can be found here

Quality improvement – the role of clinical-quality registries

A critical element of the National Health and Hospitals Reform Commission report, released in June 2009, is improved monitoring of service delivery and outcomes of care. This editorial from the *Medical Journal of Australia* outlines the role of clinical-quality registries, which systematically and uniformly collect information from patients who undergo a procedure, are diagnosed with a disease or use a health care resource, in providing data needed by clinicians and organisations to improve patient safety and quality of care. Exemplary registries from around the world and associated improvements in practice are presented.

Click here to read the full editorial

News

6th HARC Forum - Building health literacy with Norman Swan and Professor Don Nutbeam 12 April 2010

The 6th HARC Forum will be held on Monday 12 April 2010 at The University of Sydney. The purpose of this forum, chaired by Dr Norman Swan a multi-award winning broadcaster and journalist, is to consider how we can improve health care delivery for people with low health literacy and engage the speakers and the audience in a lively and provoking conversation about what the evidence says we can do to improve care across the system for patients with low

health literacy. Keynote speaker Professor Don Nutbeam, an international thought leader in the field of health literacy, will give an overview of the development of the health literacy concept and present the latest policy and research initiatives focused on improving patient health literacy. RSVPs have now closed for this event, so for those of you who missed out podcasts and presentations will be available on the Sax Institute website.

Forthcoming Events

Health Care Human Factors Seminar: 21 April 2010, Novotel Brighton Beach, Sydney

The Healthcare Human Factors Seminar will showcase the latest research and initiatives in Australia and provide an opportunity for interested parties to contribute to the future directions of research and practice in this important area. This seminar has been designed for: human factors practitioners; patient safety and quality specialists; medico-legal and health administrators; clinicians; and other practitioners.

To register click here

The role of qualitative evidence in evidence-based healthcare: 22 June 2010, 9am to 5pm, The College of Nursing, Burwood, NSW

This workshop is for nursing clinicians, nursing leaders, policy makers, researchers and teachers and offers participants the opportunity to learn about the role of qualitative research in evidence-based healthcare and how to critically appraise, extract and pool data from qualitative research studies, narrative and text.

Click for further details

Academy Health Annual Research Meeting: 27 - 29 June 2010, Hynes Veterans Memorial Convention Center, Boston, US

For 26 years, Academy Health's Annual Research Meeting (ARM) has been the premier forum for health services research, where more than 2,300 attendees gather to discuss health policy implications, sharpen research methods, and network with colleagues from around the world.

Click to read more

Annual Research Showcase - Advances in Public Health and Health Services Research: 7 May 2010, 9am to 5pm, UNSW

The program will include a guest presentation from Professor Simon Chapman, University of Sydney; in addition to research showcases from: the School of Public Health and Community Medicine; the National Centre in HIV Epidemiology and Clinical Research; the National Drug and Alcohol Research Centre; the Centre for Primary Health Care and Equity; and the Australian Institute for Health Innovation.

To register click here

AsPac 2010 International Mental Health Conference; Hope – Recovery - Future: Nov 17 2010 - Nov 19 2010, Hobart, Tasmania

The purpose of this year's theme Hope - Recovery - Future is to explore the range of issues that impinge on the psychosocial well being of everyone. A wide range of issues will be explored in order to encourage effective policy direction designed to enhance and improve the well-being of all concerned, both state-wide and nationally. This entails recognition of the vital roles played by both an individual's sound mental and physical health. The call for abstracts closes May 28 2010.

For further details click here

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