A SELECTION OF TEN CURRENT READINGS ON TOPICS RELATED TO CLINICAL QUALITY AS AVAILABLE AS FULL-TEXT (SOME FREE SOME REQUIRING PAYMENT)

Selection of readings made by A/Prof Goh Lee Gan

CAPACITY BUILDING

Reading 1 : New doctors need new 'tricks"

Sheri D Pruitt[1], JoAnne E Epping-Jordan[2], Preparing the 21st century global healthcare workforce. BMJ 2005;330:637-639 (19 March)

URL: http://bmj.bmjjournals.com/cgi/content/full/330/7492/637 (payment required)
[1] Behavioural Science Integration, Kaiser Permanente, Sacramento, CA, USA, [2] Health Care, Department of Chronic Diseases and Health Promotion, World Health Organization, Geneva, Switzerland

SUMMARY

To meet the growing global demands of caring for the increasing numbers of patients with chronic conditions, we need to develop a new approach to training Chronic conditions currently account for more than half of the global disease burden and are a primary challenge for 21st century healthcare systems. This is a dramatic shift from the health concerns of the 20th century, when acute infectious diseases were the primary focus in every country. While the world is experiencing a rapid transition from acute diseases to chronic health problems, training of the healthcare workforce, however, relies on early 20th century models that emphasise diagnosis and treatment of acute diseases. Educational leaders, health professional bodies, and the World Health Organization recognise such models as inadequate for health workers caring for a growing population of patients with health problems that persist across decades or lifetimes. Training should be restructured to include a new set of core competencies (knowledge, skills, abilities, personal qualities, experience, or other characteristics) — new "tricks" that prepare 21st century health workers to manage today's most prevalent health problems. The five basic competencies for the future workforce to acquire in depth are: (1) patient centred care, (2) partnering, (3) quality improvement, (4) information and communication technology, and (5) a public health perspective

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QUALITY IMPROVEMENT PROJECTS & PROGRAMMES

Reading 2 : Cardiovascular risk factor control

Smith NL, Chen L, Au DH, McDonell M, Fihn SD. Cardiovascular risk factor control among veterans with diabetes: the ambulatory care quality improvement project. Diabetes Care. 2004 May;27 Suppl 2:B33-8.

URL: http://care.diabetesjournals.org/cgi/content/full/27/suppl_2/b33 (free fulltext)

Seattle Epidemiologic Research and Information Center, VA Puget Sound Health Care System, Seattle, Washington, USA. nlsmith@u.washington.edu

ABSTRACT

OBJECTIVE: To describe the extent to which hyperglycemia, hypertension, and dyslipidemia are currently detected, treated, and controlled in U.S. veterans with diabetes with and without ischemic heart disease (IHD).

RESEARCH DESIGN AND METHODS: A cohort of 3,769 veterans who self-reported diabetes and who received all health care from the Veterans Administration (VA) medical centers were selected from subjects enrolled in the Ambulatory Care Quality Improvement Project, a randomized health services intervention at seven VA primary care clinics. IHD was defined by a self-reported history of myocardial ischemia, infarction, or revascularization. Mean values of HbA(1c), blood pressure, and cholesterol subfractions were collected from computerized laboratory databases. Medication data were collected from computerized pharmacy databases.

RESULTS: Mean HbA(1c) and optimal control (HbA(1c) <7%) did not differ for those without and with IHD: 8.1 vs. 8.0%, and 26 vs. 24%, respectively. Veterans with IHD were more likely to have hypertension (73 vs. 64%), to be treated (88 vs. 78%), and to have optimal blood pressure control (19 vs. 10%) compared with veterans without IHD (all P values <0.01). Veterans with IHD were more likely to have dyslipidemia (81 vs. 53%), were equally likely to be treated (54 vs. 50%), and were more likely to have optimal LDL levels (30 vs. 16%) compared with veterans without IHD, all P values <0.01.

CONCLUSIONS: Optimal cardiovascular risk factor control was the exception in this cohort of diabetic veterans attending primary care clinics. More aggressive management of cardiovascular risk factors in veterans with diabetes may be warranted, especially among those without prevalent IHD.

Reading 3 : Nurse led secondary preventive clinics for coronary heart disease

Raftery JP, Yao GL, Murchie P, Campbell NC, Ritchie LD. Cost effectiveness of nurse led secondary prevention clinics for coronary heart disease in primary care: follow up of a randomised controlled trial. BMJ. 2005 Mar 26;330(7493):707. Epub 2005 Feb 16.

URL: http://bmj.bmjjournals.com/cgi/content/full/330/7493/707 (free full text)

Health Economics Facility, Health Services Management Centre, University of Birmingham, Birmingham B15 2RT. j.p.raftery@bham.ac.uk

OBJECTIVE: To establish the cost effectiveness of nurse led secondary prevention clinics for coronary heart disease based on four years' follow up of a randomised controlled trial.

DESIGN: Cost effectiveness analysis.

SETTING: 19 general practices in north east Scotland.

PARTICIPANTS: 1343 patients (673 in intervention group and 670 in control group, as originally randomised) aged under 80 years with a diagnosis of coronary heart disease but without terminal illness or dementia and not housebound.

INTERVENTION: Nurse led clinics to promote medical and lifestyle components of secondary prevention.

MAIN OUTCOME MEASURES: Costs of clinics; overall costs to health service; and cost per life year and per quality adjusted life year (QALY) gained, expressed as incremental gain in intervention group compared with control group.

RESULTS: The cost of the intervention (clinics and drugs) was 136 pounds sterling (254 dollars; 195 euros) per patient higher (1998-9 prices) in the intervention group, but the difference in other NHS costs, although lower for the intervention group, was not statistically significant. Overall, 28 fewer deaths occurred in the intervention group leading to a gain in mean life years per patient of 0.110 and of 0.124 QALYs. The incremental cost per life year saved was 1236 pounds sterling and that per QALY was 1097 pounds sterling.

CONCLUSION: Nurse led clinics for the secondary prevention of coronary heart disease in primary care seem to be cost effective compared with most interventions in health care, with the main gains in life years saved.

Reading 4 : Care of children with asthma

Homer CJ, Forbes P, Horvitz L. Peterson LE, Wypij D, Heinrich P. Impact of a quality improvement program on care and outcomes for children with asthma.
Arch Pediatr Adolesc Med. 2005 May;159(5):464-9.

URL: http://archpedi.ama-assn.org.libproxy1.nus.edu.sg/cgi/content/full/159/5/464 (payment required)

National Initiative for Children's Health Care Quality, 375 Longwood Avenue, 3rd Floor, Boston, MA 02215, USA. chomer@nichq.org

OBJECTIVE: To test a quality improvement intervention, a learning collaborative based on the Institute for Healthcare Improvement's Breakthrough Series methodology, specifically intended to improve care and outcomes for patients with childhood asthma.

DESIGN: Randomized trial in primary care practices.

SETTING: Practices in greater Boston, Mass, and greater Detroit, Mich.

PARTICIPANTS: Forty-three practices, with 13 878 pediatric patients with asthma, randomized to intervention and control groups. Intervention Participation in a learning collaborative project based on the Breakthrough Series methodology of continuous quality improvement.

MAIN OUTCOME MEASURES: Change from baseline in the proportion of children with persistent asthma who received appropriate medication therapy for asthma, and in the proportion of children whose parent received a written management plan for their child's asthma, as determined by telephone interviews with parents of 631 children.

RESULTS: After adjusting for state, practice size, child age, sex, and within-practice clustering, no overall effect of the intervention was found.

CONCLUSIONS: This methodologically rigorous assessment of a widely used quality improvement technique did not demonstrate a significant effect on processes or outcomes of care for children with asthma. Potential deficiencies in program implementation, project duration, sample selection, and data sources preclude making the general inference that this type of improvement program is ineffective. Additional rigorous studies should be undertaken.

PATIENT SAFETY

Reading 5 : Safety through open communications

Stryer D, Clancy C. Patients' safety. (Editorial) BMJ. 2005 Mar 12;330(7491):553-4.

URL: http://bmj.bmjjournals.com/cgi/content/full/330/7491/553 (payment required)

Center for Quality Improvement and Patient Safety, US Agency for Healthcare Research and Quality, Department of Health and Human Services, 540 Gaither Road, Rockville, MD 20850

SUMMARY

Doctors are taught the professional value of: Primum non nocere — above all, do no harm. In recent years, healthcare professionals have awoken to the harm patients are experiencing despite the best professional intentions. Through the work of many researchers worldwide, the understanding of the epidemic of adverse events has increased tremendously and is beginning to pay dividends. More substantial and sustainable improvements, however, will occur only when healthcare organisations truly commit to safety through open communication that does not blame individuals but identifies and addresses flaws in systems.

Reading 6 : Safety of Australian healthcare 10 years on

Wilson RM, Van Der Weyden MB. The safety of Australian healthcare: 10 years after QAHCS. We need a patient safety initiative that captures the imagination of politicians, professionals and the public. Med J Aust. 2005 Mar 21;182(6):260-1.

URL: http://www.mja.com.au/public/issues/182_06_210305/wil10087_fm.html (free full text)

Northern Centre for Healthcare Improvement, and Australian Council for Safety and Quality in Health Care; Medical Journal of Australia.

SUMMARY

Is healthcare in Australia is safer for patients compared to ten years ago? Unfortunately, the answer is no, so think the authors. They noted that the frequency of adverse events has not been measured in a way that allows assessment on how the country had fared since 1995; how Australia compares with other countries; and whether initiatives put into action have been effective in reducing patient harm. A thorough understanding of the strengths and weaknesses of data derived from medical record audits, voluntary reporting systems, clinical indicators, and existing large datasets is needed to determine whether a particular intervention or program has been successful in improving safety. The authors note that in the context of governance arrangements for safety and quality of healthcare, there are four areas that require more action and greater urgency. These are: (1) leadership to provide clarity of vision and the will to change; (2) transparency and open discussion on errors and safety issues; (3) measurement — to provide information about where to direct our improvement efforts and whether our interventions have been effective; and (4) Improvement tools — there is a body of evidence on methodology for improvement projects at the local level, from the pioneering contributions of W Edwards Deming and Walter A Shewhart to the more recent Institute for Healthcare Improvement's Breakthrough Collaborative methodology.

Reading 7 : A clinician-based approach to patient safety in the ambulatory care setting

Plews-Ogan, Margaret L, Nadkarni, Mohan M, Forren, Sue, Leon, Darlene, White, Donna, Marineau, Don, Schorling, John B & Schectman, Joel M (2004).
Patient Safety in the Ambulatory Setting.
Journal of General Internal Medicine 19 (7), 719-725.

URL: http://www.blackwell-synergy.com.libproxy1.nus.edu.sg/doi/abs/10.1111/j.1525-1497.2004.30386.x (payment required)

University of Virginia Health Systems, Charlottesville, VA 22908, USA. mp5k@virginia.edu

ABSTRACT

BACKGROUND: Voluntary reporting of near misses/adverse events is an important but underutilized source of information on errors in medicine. To date, there is very little information on errors in the ambulatory setting and physicians have not traditionally participated actively in their reporting or analysis.

OBJECTIVES: To determine the feasibility and effectiveness of clinician-based near miss/adverse event voluntary reporting coupled with systems analysis and redesign as a model for continuous quality improvement in the ambulatory setting.

DESIGN: We report the initial 1-year experience of voluntary reporting by clinicians in the ambulatory setting, coupled with root cause analysis and system redesign by a patient safety committee made up of clinicians from the practice.

SETTING: Internal medicine practice site of a large teaching hospital with 25,000 visits per year.

MEASUREMENTS AND MAIN RESULTS: There were 100 reports in the 1-year period, increased from 5 in the previous year. Faculty physicians reported 44% of the events versus 22% by residents, 31% by nurses, and 3% by managers. Eighty-three percent were near misses and 17% were adverse events. Errors involved medication (47%), lab or x-rays (22%), office administration (21%), and communication (10%) processes. Seventy-two interventions were recommended with 75% implemented during the study period.

CONCLUSION: This model of clinician-based voluntary reporting, systems analysis, and redesign was effective in increasing error reporting, particularly among physicians, and in promoting system changes to improve care and prevent errors. This process can be a powerful tool for incorporating error reporting and analysis into the culture of medicine.

Reading 8: Cascade analysis of medical errors

Woolf SH, Kuzel AJ, Dovey SM, Phillips RL Jr. A string of mistakes: the importance of cascade analysis in describing, counting, and preventing medical errors. Ann Fam Med. 2004 Jul-Aug;2(4):317-26.

URL: http://www.annfammed.org/cgi/content/full/2/4/317 (free full text)

Department of Family Medicine, Virginia Commonwealth University, Richmond, VA, USA. swoolf@vcu.edu

ABSTRACT

BACKGROUND: Notions about the most common errors in medicine currently rest on conjecture and weak epidemiologic evidence. We sought to determine whether cascade analysis is of value in clarifying the epidemiology and causes of errors and whether physician reports are sensitive to the impact of errors on patients.

METHODS: Eighteen US family physicians participating in a 6-country international study filed 75 anonymous error reports. The narratives were examined to identify the chain of events and the predominant proximal errors. We tabulated the consequences to patients, both reported by physicians and inferred by investigators.

RESULTS: A chain of errors was documented in 77% of incidents. Although 83% of the errors that ultimately occurred were mistakes in treatment or diagnosis, 2 of 3 were set in motion by errors in communication. Fully 80% of the errors that initiated cascades involved informational or personal miscommunication. Examples of informational miscommunication included communication breakdowns among colleagues and with patients (44%), misinformation in the medical record (21%), mishandling of patients' requests and messages (18%), inaccessible medical records (12%), and inadequate reminder systems (5%). When asked whether the patient was harmed, physicians answered affirmatively in 43% of cases in which their narratives described harms. Psychological and emotional effects accounted for 17% of physician-reported consequences but 69% of investigator-inferred consequences.

CONCLUSIONS: Cascade analysis of physicians' error reports is helpful in understanding the precipitant chain of events, but physicians provide incomplete information about how patients are affected. Miscommunication appears to play an important role in propagating diagnostic and treatment mistakes.

PRESCRIBING SAFELY

Reading 9: Potentially harmful drug-drug and drug disease combinations to avoid in the elderly

Zhan C, Correa-de-Araujo R, Bierman AS, Sangl J, Miller MR, Wickizer SW, Stryer D. Suboptimal prescribing in elderly outpatients: potentially harmful drug-drug and drug-disease combinations. J Am Geriatr Soc. 2005 Feb;53(2):262-7.

URL: http://www.blackwell-synergy.com/doi/full/10.1111/j.1532-5415.2005.53112.x (payment required)

Agency for Healthcare Research and Quality, Department of Health and Human Services, Rockville, Maryland 20850, USA. czhan@ahrq.gov czhan@ahrq.gov

ABSTRACT

OBJECTIVES: To assess the prevalence and correlates of potentially harmful drug-drug combinations and drug-disease combinations prescribed for elderly patients at outpatient settings.

DESIGN: Retrospective analysis of the 1995-2000 National Ambulatory Medical Care Survey (NAMCS) and the National Hospital Ambulatory Medical Care Survey (NHAMCS).

SETTING: Physician offices and hospital outpatient departments.

PARTICIPANTS: Outpatient visits by patients aged 65 and older in the NAMCS and NHAMCS (n=70,203).

MEASUREMENTS: Incidences of six drug-drug combinations and 50 drug-disease combinations that can place elderly patients at risk for adverse events according to expert consensus panels.

RESULTS: Overall, 0.74% (95% confidence interval (CI)=0.65-0.83) of visits with two or more prescriptions had at least one inappropriate drug-drug combination, and 2.58% (95% CI=2.44-2.72) of visits with at least one prescription had one or more inappropriate drug-disease combinations. Of visits with a prescription of warfarin, 6.60% (95% CI=5.46-7.74) were prescribed a drug with potentially harmful interaction. Of patients with benign prostatic hypertrophy, 4.06% (95% CI=3.06-5.06) had at least one of six drugs that should be avoided. The number of drugs prescribed is most predictive of inappropriate drug-drug and drug-disease combinations.

CONCLUSION: Potentially harmful drug-drug and drug-disease combinations occur in various degrees in outpatient care in the elderly population. Targeting combinations such as those involving warfarin that are high in prevalence and potential harm offers a practical approach to improving prescribing and patient safety.

SYSTEM TOOLS FOR IMPROVEMENT OF QUALITY

Reading 10: Effect of electronic health records on use and quality of ambulatory care

Garrido T, Jamieson L, Zhou Y, Wiesenthal A, Liang L. Effect of electronic health records in ambulatory care: retrospective, serial, cross sectional study. BMJ. 2005 Mar 12;330(7491):581

URL: http://bmj.bmjjournals.com/cgi/content/full/330/7491/581 (payment required)

Clinical Systems Planning and Consulting, Kaiser Permanente, 2101 Webster Street, Oakland, CA 94612, USA. terhilda.garrido@kp.org

ABSTRACT

OBJECTIVE: To evaluate the effect of implementing comprehensive, integrated electronic health record systems on use and quality of ambulatory care DESIGN: Retrospective, serial, cross sectional study.

SETTING: Colorado and Northwest regions of Kaiser Permanente, a US integrated healthcare delivery system.

POPULATION: 367,795 members in the Colorado region and 449,728 members in the Northwest region.

INTERVENTION: Implementation of electronic health record systems.

MAIN OUTCOME MEASURES: Total number of office visits and use of primary care, specialty care, clinical laboratory, radiology services, and telephone contact. Health Plan Employer Data and Information Set to assess quality.

RESULTS: Two years after electronic health records were fully implemented, age adjusted rates of office visits fell by 9% in both regions. Age adjusted primary care visits decreased by 11% in both regions and specialty care visits decreased by 5% in Colorado and 6% in the Northwest. All these decreases were significant ($P < 0.0001$). The percentage of members making > or = 3 visits a year decreased by 10% in Colorado and 11% in the Northwest, and the percentage of members with < or = 2 visits a year increased. In the Northwest, scheduled telephone contact increased from a baseline of 1.26 per member per year to 2.09 after two years. Use of clinical laboratory and radiology services did not change conclusively. Intermediate measures of quality of health care remained unchanged or improved slightly.

CONCLUSIONS: Readily available, comprehensive, integrated clinical information reduced use of ambulatory care while maintaining quality and allowed doctors to replace some office visits with telephone contacts. Shifting patterns of use suggest reduced numbers of ambulatory care visits that are inappropriate or marginally productive.