

## A SELECTION OF TEN CURRENT READINGS ON TOPICS RELATED TO INTEGRATED ELDERCARE COURSE –

some available as free full-text and some requiring payment

Selection of readings made by A/Prof Goh Lee Gan

### READING 1 – Medication therapy management

**Ramalho de Oliveira D, Brummel AR, Miller DB. Medication therapy management: 10 years of experience in a large integrated health care system. J Manag Care Pharm. 2010 Apr;16(3):185-95. PubMed PMID: 20331323.**

URL: <http://www.amcp.org/data/jmcp/185-195.pdf> (free full text)

Ramalho de Oliveira D, Brummel AR, Miller DB. Fairview Pharmacy Services, 711 Kasota Ave. SE, Minneapolis, MN 55414, USA. dolivei1@fairview.org

**BACKGROUND:** Medication therapy management (MTM) was officially recognized by the federal government in the Medicare Prescription Drug, Improvement, and Modernization Act of 2003, which requires Medicare Part D plans that offer prescription drug coverage to establish MTM programs (MTMPs) for eligible beneficiaries. Even though the term “MTM” was first used in 2003, pharmacists have provided similar services since the term “pharmaceutical care” was introduced in 1990. Fairview Health Services, a large integrated health care system, implemented a standardized pharmaceutical care service system in 1998, naming it a pharmaceutical care-based MTM practice in 2006.

**OBJECTIVE:** To present the clinical, economic, and humanistic outcomes of 10 years of delivering MTM services to patients in a health care delivery system.

**METHODS:** Data from MTM services provided to 9,068 patients and documented in electronic therapeutic records were retrospectively analyzed over the 10-year period from September 1998 to September 2008 in 1 health system with 48 primary care clinics. Patients eligible for MTM services were aged 21 years or older and either paid for MTM out of pocket or met their health care payer’s criteria for MTM reimbursement; the criteria varied for Medicaid, Medicare, and commercially insured enrollees. All MTM was delivered face to face. Health data extracted from the electronic therapeutic record by the present study’s investigators included patient demographics, medication list, medical conditions, drug therapy problems identified and addressed, change in clinical status, and pharmacist-estimated cost savings. The clinical status assessment was a comparison of the first and most recent MTM visit to measure whether the patient achieved the goals of therapy for each medical condition (e.g., the blood pressure of a patient with diabetes and hypertension will be less than 130/80 millimeters mercury [mmHg] in 1 month; the patient with allergic rhinitis will be relieved of his complaints of nasal congestion, runny nose, and eye itching within 5 days). Goals were set according to evidence-based literature and patient-specific targets determined cooperatively by pharmacists, patients, and physicians. Cost-savings calculations represented MTM pharmacists’ estimates of medical services (e.g., office visits, laboratory services, urgent care visits, emergency room visits) and lost work time avoided by the intervention. All short-term (3-month) estimated health care savings that resulted from addressing drug therapy problems were analyzed. The expenses of these avoided services were calculated using the health system’s contracted rates for services provided in the last quarter of 2008. The return on investment (ROI) was calculated by dividing the pharmacist-estimated savings by the cost of MTM services in 2008 (number of MTM encounters times the average cost of an MTM visit). The humanistic impact of MTM services was assessed using the results from the second patient satisfaction survey administered in 2008 (new patients seen from January through December 2008) for the health system’s MTM program.

**RESULTS:** A total of 9,068 patient records were in the documentation system as of September 30, 2008. During the 10-year period, there were 33,706 documented encounters (mean 3.7 encounters per patient). Of 38,631 drug therapy problems identified and addressed by MTM pharmacists, the most frequent were a need for additional drug

therapy (n = 10,870, 28.1%) and subtherapeutic dosage (n = 10,100, 26.1%). In the clinical status assessment of the 12,851 medical conditions in 4,849 patients who were not at goal when they enrolled in the program, 7,068 conditions (55.0%) improved, 2,956 (23.0%) were unchanged, and 2,827 (22.0%) worsened during the course of MTM services. Pharmacist-estimated cost savings to the health system over the 10-year period were \$2,913,850 (\$86 per encounter) and the total cost of MTM was \$2,258,302 (\$67 per encounter), for an estimated ROI of \$1.29 per \$1 in MTM administrative costs. In the patient satisfaction survey, 95.3% of respondents agreed or strongly agreed that their

overall health and wellbeing had improved because of MTM.

**CONCLUSION:** Pharmacist estimates of the impact of an MTM program in a large integrated health care system suggest that the program was associated with improved clinical outcomes and cost savings. Patient satisfaction with the program was high.

PMID: 20331323 [PubMed - indexed for MEDLINE]

## READING 2 – Primary palliative care

**Mitchell GK. Primary palliative care - facing twin challenges. Aust Fam Physician. 2011 Jul;40(7):517-8. PubMed PMID: 21743860.**

URL: <http://www.racgp.org.au/afp/201107/43060> (free full text)

Mitchell GK. MBBS, PhD, FRACGP, FACHPM, is Professor, Centre for Primary Healthcare Innovation, The University of Queensland.

As Australia's population ages, three things are inevitable: more people will develop chronic illnesses; more will grow very ill and more will die. Blueprints for the future suggest an increasingly important role for general practitioners and primary healthcare in palliative care.

PMID: 21743860 [PubMed - in process]

## READING 3 – Integrated post-discharge transitional care

**Shu CC, Hsu NC, Lin YF, Wang JY, Lin JW, Ko WJ. Integrated post-discharge transitional care in a hospitalist system to improve discharge outcome: An experimental study. BMC Med. 2011 Aug 17;9(1):96. [Epub ahead of print] PubMed PMID: 21849018.**

URL: <http://www.biomedcentral.com.libproxy1.nus.edu.sg/1741-7015/9/96> (free full text)

**ABSTRACT: BACKGROUND:** The post-discharge period is a vulnerable time for patients with high rates of adverse events that may cause unnecessary readmissions, especially in the elderly. Because post-discharge care continuity is easily interrupted after hospitalist care, close follow-up may decrease readmission. This study aimed to investigate the impact of a quality improvement program - integrated post-discharge transitional care (PDTC) - in Taiwan's hospitalist system. **METHODS:** From December 2009 to May 2010, patients admitted to the hospitalist ward of a medical center in Taiwan, and discharged alive to home care were included. Quality improvement intervention in the PDTC program, including disease-specific care plan, telephone monitoring, hotline counseling, and referral to hospitalist-run clinic were performed in the latter four months in the intervention group while the control group was recruited in the first two months of the study period. The primary endpoint was unplanned readmission or death within 30 days after discharge. **RESULTS:** There were 94 and 219 patients in the control and intervention groups, respectively. Both groups had similar characteristics on admission and discharge. In the intervention group, 18 patients with worsening disease-specific indicators by telephone monitoring and 21 with new/worsening symptoms by hotline

counseling were associated with a higher rate of unplanned readmission than those without worsening indicator ( $p=0.031$ ) and symptoms ( $p=0.019$ ), respectively. Those who received PDTC had lower rate of readmission and death within 30 days post-discharge than the control group (15% vs. 25%,  $p=0.021$ ). Non-use of a hospitalist-run clinic and presence of underlying malignancy were other independent factors for 30-day post-discharge readmission and death. **CONCLUSION:** Integrated PDTC using disease-specific care, telephone monitoring, hotline counseling, and a hospitalist-run clinic can reduce post-discharge readmission and death. PMID: 21849018 [PubMed - as supplied by publisher]

#### READING 4 – Integrated health care in Sweden

**Ahgren B, Axelsson R. A decade of integration and collaboration: the development of integrated health care in Sweden 2000-2010. *Int J Integr Care*. 2011 Jan;11 Spec Ed:e007. Epub 2011 Mar 9. PubMed PMID: 21677844; PubMed Central PMCID: PMC3111884.**

URL: <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3111884/?tool=pubmed> (free full text)

Ahgren B, Axelsson R. Nordic School of Public Health, P.O. Box 12133, SE-402 42 Göteborg, Sweden.

**INTRODUCTION:** The recent history of integrated health care in Sweden is explored in this article, focusing on the first decade of the 2000s. In addition, there are some reflections about successes and setbacks in this development and challenges for the next decade.

**DESCRIPTION OF POLICY AND PRACTICE:** The first efforts to integrate health care in Sweden appeared in the beginning of the 1990s. The focus was on integration of intra-organisational processes, aiming at a more cost-effective health care provision. Partly as a reaction to the increasing economism at that time, there was also a growing interest in quality improvement. Out of this work emerged the 'chains of care', integrating all health care providers involved in the care of specific patient groups. During the 2000s, many county councils have also introduced inter-organisational systems of 'local health care'. There has also been increasing collaboration between health professionals and other professional groups in different health and welfare services.

**DISCUSSION AND CONCLUSION:** Local health care meant that the chains of care and other forms of integration and collaboration became embedded in a more integrative context. At the same time, however, policy makers have promoted free patient choice in primary health care and also mergers of hospitals and clinical departments. These policies tend to fragment the provision of health care and have an adverse effect on the development of integrated care. As a counterbalance, more efforts should be put into evaluation of integrated healthcare, in order to replace political convictions with evidence concerning the benefits of such health care provision.

PMCID: PMC3111884 PMID: 21677844 [PubMed]

#### READING 5 – Integrated care in Quebec, Canada

**Vedel I, Monette M, Beland F, Monette J, Bergman H. Ten years of integrated care: backwards and forwards. The case of the province of Québec, Canada. *Int J Integr Care*. 2011 Jan;11 Spec Ed:e004. Epub 2011 Mar 7. PubMed PMID: 21677842; PubMed Central PMCID: PMC3111887.**

URL: <http://www.ncbi.nlm.nih.gov/pmc/articles/pmid/21677842/?tool=pubmed> (free full text)

Vedel I, Monette M, Beland F, Monette J, Bergman H. Solidage-McGill University-Université de Montreal Research Group on Frailty and Aging, Center for Clinical Epidemiology and Community Studies, Lady Davis Institute for Medical Research, Jewish General Hospital, McGill University, Montreal, Quebec, Canada.

**INTRODUCTION:** Québec's rapidly growing elderly and chronically ill population represents a major challenge to its healthcare delivery system, attributable in part to the system's focus on acute care and fragmented delivery.

**DESCRIPTION OF POLICY PRACTICE:** Over the past few years, reforms have been implemented at the provincial policy level to integrate hospital-based, nursing home, homecare and social services in 95 catchment areas. Recent organizational changes in primary care have also resulted in the implementation of family medicine groups and network clinics. Several localized initiatives were also developed to improve integration of care for older persons or persons with chronic diseases.

**CONCLUSION AND DISCUSSION:** Québec has a history of integration of health and social services at the structural level. Recent evaluations of the current reform show that the care provided by various institutions in the healthcare system is becoming better integrated. The Québec health care system nevertheless continues to face three important challenges in its management of chronic diseases: implementing the reorganization of primary care, successfully integrating primary and secondary care at the clinical level, and developing effective governance and change management. Efforts should focus on strengthening primary care by implementing nurse practitioners, developing a shared information system, and achieving better collaboration between primary and secondary care.

PMCID: PMC3111887 PMID: 21677842 [PubMed]

## **READING 6 – Integrated care in Quebec, Canada**

**Berchtold P, Peytremann-Bridevaux I. Integrated care organizations in Switzerland. *Int J Integr Care*. 2011 Jan;11 Spec Ed:e010. Epub 2011 Mar 14. PubMed PMID: 21677845; PubMed Central PMCID: PMC3111889.**

URL: <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3111889/?tool=pubmed> (free full text)

Berchtold P, Peytremann-Bridevaux I. College for Management in Healthcare and Forum Managed Care (FMC), Freiburgstrasse 41, CH-3010 Bern, Switzerland.

**INTRODUCTION:** The Swiss health care system is characterized by its decentralized structure and high degree of local autonomy. Ambulatory care is provided by physicians working mainly independently in individual private practices. However, a growing part of primary care is provided by networks of physicians and health maintenance organizations (HMOs) acting on the principles of gatekeeping.

**TOWARDS INTEGRATED CARE IN SWITZERLAND:** The share of insured choosing an alternative (managed care) type of basic health insurance and therefore restrict their choice of doctors in return for lower premiums increased continuously since 1990. To date, an average of one out of eight insured person in Switzerland, and one out of three in the regions in north-eastern Switzerland, opted for the provision of care by general practitioners in one of the 86 physician networks or HMOs. About 50% of all general practitioners and more than 400 other specialists have joined a physician networks. Seventy-three of the 86 networks (84%) have contracts with the healthcare insurance companies in which they agree to assume budgetary co-responsibility, i.e., to adhere to set cost targets for particular groups of patients. Within and outside the physician networks, at regional and/or cantonal levels, several initiatives targeting chronic diseases have been developed, such as clinical pathways for heart failure and breast cancer patients or chronic disease management programs for patients with diabetes.

**CONCLUSION AND IMPLICATIONS:** Swiss physician networks and HMOs were all established solely by initiatives of physicians and health insurance companies on the sole basis of a healthcare legislation (Swiss Health Insurance Law, KVG) which allows for such initiatives and developments. The relevance of these developments towards more integration of healthcare as well as their implications for the future are discussed.

PMCID: PMC3111889 PMID: 21677845 [PubMed]

during a pandemic. PMID: 20505904 [PubMed - indexed for MEDLINE]

**READING 7 – Development Model for Integrated Care**

**Minkman MM, Vermeulen RP, Ahaus KT, Huijsman R. The implementation of integrated care: the empirical validation of the Development Model for Integrated Care. BMC Health Serv Res. 2011 Jul 30;11(1):177. [Epub ahead of print] PubMed PMID: 21801428.**

URL: <http://www.biomedcentral.com/1472-6963/11/177> (free full text)

**ABSTRACT: BACKGROUND:** Integrated care is considered as a strategy to improve the delivery, efficiency, client outcomes and satisfaction rates of health care. To integrate the care from multiple providers into a coherent client-focused service, a large number of activities and agreements have to be implemented like streamlining information flows and patient transfers. The Development Model for Integrated care (DMIC) describes nine clusters containing in total 89 elements that contribute to the integration of care. We have empirically validated this model in practice by assessing the relevance, implementation and plans of the elements in three integrated care service settings in The Netherlands: stroke, acute myocardial infarct (AMI), and dementia. **METHODS:** Based on the DMIC, a survey was developed for integrated care coordinators. We invited all Dutch stroke and AMI-services, as well as the dementia care networks to participate, of which 84 did (response rate 83 %). Data were collected on relevance, presence, and year of implementation of the 89 elements. The data analysis was done by means of descriptive statistics, Chi Square, ANOVA and Kruskal-Wallis H tests.

**RESULTS:** The results indicate that the integrated care practice organizations in all three care settings rated the nine clusters and 89 elements of the DMIC as highly relevant. The average number of elements implemented was 50 +/- 18, 42 +/- 13, and 45 +/- 22 for stroke, acute myocardial infarction, and dementia care services, respectively. Although the dementia networks were significantly younger, their numbers of implemented elements were comparable to those of the other services. The analyses of the implementation timelines showed that the older integrated care services had fewer plans for further implementation than the younger ones. Integrated care coordinators stated that the DMIC helped them to assess their integrated care development in practice and supported them in obtaining ideas for expanding their integrated care activities.

**CONCLUSIONS:** Although the patient composites and the characteristics of the 84 participating integrated care services differed considerably, the results confirm that the clusters and the vast majority of DMIC elements are relevant to all three groups. Therefore, the DMIC can serve as a general quality management tool for integrated care. Applying the model in practice can help in steering further implementations as well as the development of new integrated care practices.

PMID: 21801428 [PubMed - as supplied by publisher]

**READING 8 – Multi-professional and multidimension intervention**

**Wilhelmson K, Duner A, Eklund K, Gosman-Hedström G, Blomberg S, Hasson H, Gustafsson H, Landahl S, Dahlin-Ivanoff S. Design of a randomized controlled study of a multi-professional and multidimensional intervention targeting frail elderly people. BMC Geriatr. 2011 May 14;11(1):24. PubMed PMID: 21569570; PubMed Central PMCID: PMC3118103.**

URL: <http://www.biomedcentral.com/1471-2318/11/24> (free full text)

Wilhelmson K, Duner A, Eklund K, Gosman-Hedström G, Blomberg S, Hasson H, Gustafsson H, Landahl S, Dahlin-Ivanoff S. The Swedish Institute for Health Sciences, University of Gothenburg and Lund, Sweden. katarina.wilhelmson@socmed.gu.se

**BACKGROUND:** Frail elderly people need an integrated and coordinated care. The two-armed study “Continuum of care for frail elderly people” is a multi-professional and multidimensional intervention for frail community-dwelling elderly people. It was designed to evaluate whether the intervention programme for frail elderly people can reduce the number of visits to hospital, increase satisfaction with health and social care and maintain functional abilities. The implementation process is explored and analysed along with the intervention. In this paper we present the study design, the intervention and the outcome measures as well as the baseline characteristics of the study participants.

**METHODS/DESIGN:** The study is a randomised two-armed controlled trial with follow ups at 3, 6 and 12 months. The study group includes elderly people who sought care at the emergency ward and discharged to their own homes in the community. Inclusion criteria were 80 years and older or 65 to 79 years with at least one chronic disease and dependent in at least one activity of daily living. Exclusion criteria were acute severely illness with an immediate need of the assessment and treatment by a physician, severe cognitive impairment and palliative care. The intention was that the study group should comprise a representative sample of frail elderly people at a high risk of future health care consumption. The intervention includes an early geriatric assessment, early family support, a case manager in the community with a multi-professional team and the involvement of the elderly people and their relatives in the planning process.

**DISCUSSION:** The design of the study, the randomisation procedure and the protocol meetings were intended to ensure the quality of the study. The implementation of the intervention programme is followed and analysed throughout the whole study, which enables us to generate knowledge on the process of implementing complex interventions. The intervention contributes to early recognition of both the elderly peoples’ needs of information, care and rehabilitation and of informal caregivers’ need of support and information. This study is expected to show positive effects on frail elderly peoples’ health care consumption, functional abilities and satisfaction with health and social care.

**TRIAL REGISTRATION:** ClinicalTrials.gov: NCT01260493.

PMCID: PMC3118103 PMID: 21569570 [PubMed - in process]



## READING 9 – Models of home and community services for older persons

**Low LF, Yap M, Brodaty H. A systematic review of different models of home and community care services for older persons. BMC Health Serv Res. 2011 May 9;11:93. PubMed PMID: 21549010; PubMed Central PMCID: PMC3112399.**

URL: <http://www.biomedcentral.com.libproxy1.nus.edu.sg/1472-6963/11/93> (free full text)

Low LF, Yap M, Brodaty H. Dementia Collaborative Research Centre, School of Psychiatry, Faculty of Medicine, AGSM Building, University of NSW, Sydney NSW 2052 Australia. lf.low@unsw.edu.au

**BACKGROUND:** Costs and consumer preference have led to a shift from the long-term institutional care of aged older people to home and community based care. The aim of this review is to evaluate the outcomes of case managed, integrated or consumer directed home and community care services for older persons, including those with dementia.

**METHODS:** A systematic review was conducted of non-medical home and community care services for frail older persons. MEDLINE, PsycINFO, CINAHL, AgeLine, Scopus and PubMed were searched from 1994 to May 2009. Two researchers independently reviewed search results.

**RESULTS:** Thirty five papers were included in this review. Evidence from randomized controlled trials showed that case management improves function and appropriate use of medications, increases use of community services and reduces nursing home admission. Evidence, mostly from non-randomized trials, showed that integrated care increases service use; randomized trials reported that integrated care does not improve clinical outcomes. The lowest quality evidence was for consumer directed care which appears to increase satisfaction with care and community service use but has little effect on clinical outcomes. Studies were heterogeneous in methodology and results were not consistent.

**CONCLUSIONS:** The outcomes of each model of care differ and correspond to the model's focus. Combining key elements of all three models may maximize outcomes.

PMCID: PMC3112399 PMID: 21549010 [PubMed - in process]

## READING 10 – Influence of primary care models

**Pineault R, Provost S, Hamel M, Couture A, Levesque JF. The influence of primary health care organizational models on patients' experience of care in different chronic disease situations. Chronic Dis Inj Can. 2011 Jun;31(3):109-20. PubMed PMID: 21733348.**

URL: <http://www.phac-aspc.gc.ca/publicat/cdic-mcbc/31-3/ar-05-eng.php> (free full text)

Pineault R, Provost S, Hamel M, Couture A, Levesque JF. Direction de santé publique de l'Agence de la santé et des services sociaux de Montréal, Montréal, Quebec, Canada. rpineaul@santepub-mtl.qc.ca

**OBJECTIVES:** To examine the extent to which experience of care varies across chronic diseases, and to analyze the relationship of primary health care (PHC) organizational models with the experience of care reported by patients in different chronic disease situations.

**METHODS:** We linked a population survey and a PHC organizational survey conducted in two regions of Quebec. We identified five groups of chronic diseases and contrasted these with a no-chronic-disease group.

**RESULTS:** Accessibility of care is low for all chronic conditions and shows little variation across diseases. The contact and the coordination-integrated models are the most accessible, whereas the single-provider model is the least. Process and outcome indices of care experience are much higher than accessibility for all conditions and vary across diseases, with the highest being for cardiovascular-risk-factors and the lowest for respiratory diseases (for people aged 44 and under). However, as we move from risk factors to more severe chronic conditions, the coordination-integrated and community models are more likely to generate better process of care, highlighting the greater potential of these two models to meet the needs of more severely chronically ill individuals within the Canadian health care system.

PMID: 21733348 [PubMed - in process]