



May 2-5, 2010 – New York

## **Theme 4: Working together - Team-based Models of Primary Medical Care: What's working in Complex Care Management?**

### **Case Studies from Four Countries**

**Lead Country:** Australia

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**Background:** All of the IMWC member countries are in the process of health care system reform due to: escalating costs of healthcare in part due to increasing demands from an ageing population; patients increasingly presenting within the primary care setting with chronic, complex and multi-morbidity, an increasingly complex and fragmented health system; an increasing expectation to support and engage people in their own care; and inadequate access to primary care, due to workforce shortages and maldistribution. Team-based models of primary care workforce have emerged across the IMWC member countries to address these challenges.

**Approach:** A multi-country, comparative health systems research approach was chosen, as the variation in context would allow a better understanding of how similar reforms to facilitate team-based models, have been implemented in different contexts, and using different approaches, thus providing opportunities to understand factors influencing the success of reforms. This rationale concurs with a 'realist' approach to evaluation which guided the preparation of four country (Australia, Canada, United Kingdom, United States) specific case studies to illustrate what's working and in what circumstances to support team-based models for patients with complex care within the primary medical care setting. The case studies provide rich insights into policy and programmatic investments aimed at preparing and supporting the workforce to work together to care for patients with complex care needs.

**Session:** The conference session will: provide the opportunity for each country author to summarise key points; provide an analysis and commentary on emerging themes; and an opportunity for all conference participants to discuss key learnings, and potential joint actions among IMWC member countries to optimise policy options.

## Australia: A Case study

### Preparing and Supporting the Workforce to Work Together in Complex Care Management

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#### Abstract

**Aim:** This paper presents findings from a review of Australian evidence of what's working to inform policy reforms to support multidisciplinary team-based models for patients with complex chronic care needs within the primary medical care setting. This paper was prepared specifically for the 2010 International Medical Workforce Collaborative conference.

**Method:** Australia specific evidence was reviewed and synthesised about: team-based chronic care management (CCM) policy and programmatic investments, contextual factors influencing CCM; and policy levers to facilitate team-based models within the primary medical care setting. A realist evaluation approach guided the analysis and structure of the reviews and synthesis of existing evidence and subsequent policy levers.

**Results:** For over a decade Australia has initiated significant health system reforms at the Commonwealth and state levels via strategies/programs that contain many features consistent with the elements of the Wagner Chronic Care Model. However, current evidence on the management of chronic diseases in Australian primary health care (PHC) indicates that the quality of care provided is poor. Contextual factors at the micro, meso and macro level are impeding effective CCM (e.g., policy & program duplication; dominant GP FFS payments system, cumbersome administrative systems; and a focus on process and not patient outcomes). Effective team-based CCM requires: multiple systemic level reforms, of which 'coordinated, team-based multidisciplinary care' is only one element. Others include: governance, management, partnerships structures, practice guidelines; care pathways, information systems and payment models. Delivery systems designs that support multidisciplinary team approaches are needed and require: enhanced staff training and extending financial support to nurses. Coordination of policy and programs at national, state and local levels is needed, as is investment to develop practice capacity to support team roles, team climate, information systems and business development processes.

**Discussion:** This review and synthesis of evidence about what's working in Australian team-based CCM has consistently revealed that three interdependent contextual factors and subsequent policy levers influence how the primary medical care workforce can be supported to work in team-based CCM, namely: the current GP payment system; the role, value and contribution of an expanded workforce (practice nurses) to CCM; and the practice organisational capacity to support team-based CCM. These policy levers are discussed, as are research priorities.

**Conclusion:** The Australian based review and synthesis has revealed that policy and programmatic efforts have the potential to work in CCM if: coordination of team-based CCM policy and programs occur at national, state and local levels; if three interdependent policy levers are enacted, namely: implement practice level team based payment systems; strengthen an expanded CCM workforce roles and skills mix; and strengthen practice organisational capacity to support team-based CCM; and if future policy reforms/initiatives have funded evaluation plans that utilise evidence and team based care evaluative frameworks, methodologies and tools.

## Introduction

Health systems with strong primary care orientations are associated with improved equity, increased access and appropriate services at lower costs, and improved population health (Starfield, 1994; Atun, 2004). However, health systems are facing and responding to: increasing demands from an ageing population and workforce; patients increasingly presenting within the primary care setting with chronic, complex and multi-morbidity, an increasingly complex and fragmented health system; and shortages of primary care physicians (Commonwealth of Australia, 2005). Within Australia, a spectrum of team-based models have emerged to address these challenges using terms and concepts such as multidisciplinary care, interdisciplinary care, interprofessional care, multi-professional care, collaborative care and integrated care that are often used interchangeably within policy documents. However they are not synonymous, and have implications for primary care workforce planning, education/training, governance, infrastructure, funding, sustainability, and evaluation. Similarly, the terms and concepts, primary care, primary health care and primary medical care are also often used interchangeably. However they too are not synonymous. Thus, we discuss next, how we have conceptualised and used the terms: team-based models and primary medical care in this paper.

**Team-based models:** Existing definitions of teams and team work share the concepts of interdependence, shared goals and responsibility, and mutual accountability (Mickan and Rodger, 2000; Lemiux-Charles and McGuire, 2006; Oandasan, Baker et al., 2006). However, there is no agreed upon definition of the concept of a 'team in primary care'. For the purposes of this paper the definition and conceptualisation of teamwork used in a recent narrative literature review of incentives for primary health care (PHC) team service provision to inform Australian policy reforms (Naccarella et al 2010) will be used, namely:

*A group of professionals associated with treating a particular patient that includes a GP, who are interdependent in their tasks, share responsibility for outcomes, and who work together to meet the changing needs of patients.*

There is wide recognition within the literature that there are many factors that can influence teamwork, including the: extent to which organisational context supports team working; types and levels of leadership available to the team; team composition including the mix of skills, knowledge and experience; extent to which members have shared objectives, communicate, make decisions jointly, support innovation and review working progress; extent to which funding arrangements reward teamwork; the available practice infrastructure and support; attitudes to teams/team work within the team; extent to which team members have had inter-professional education, learning and training opportunities; and extent to which regulatory mechanisms support/value/reward teamwork (Adapted from Naccarella et al (2010) - based upon key references: Grumbach & Bodenheimer, 2004; Lemieux-Charles and McGuire, 2006; McNair, Stone et al., 2005; Mickan, 2000; Oandasan, Baker et al. 2006; Sicotte, D'Amour et al. 2002)

**Primary medical care:** Within the health care arena, the terms and concept, primary care, primary health care and primary medical care are also often used interchangeably. However as noted above, they are not synonymous, and have implications for workforce support, development and planning. In this paper, the term '*primary medical care*' will be used, and will refer to:

*“the system of health care workers (predominantly general practice, nursing and allied health professionals) which provide locally-based first contact care in the community setting<sup>1</sup>.*

We considered team-based models where General Practice was an included element.

It is also important to briefly define how the phrase ‘complex chronic care management’ is used in Australia and hence in this paper. Complex chronic care or disease management is an umbrella phrase used to describe a diverse array of medical conditions. The National Chronic Disease Strategy<sup>2</sup> defined chronic diseases as being: complex and multi-factorial in causation; gradual in onset with variation in symptoms experienced: from acute or sudden onset of symptoms through to symptom-free periods; persistent and long-term in nature, leading to a gradual deterioration of health; more prevalent with older age, but can occur throughout the life cycle; compromising to an individual’s quality of life through physical limitations and disability; and not immediately life threatening but eventually leading to premature mortality. These include, but are not limited to, coronary heart disease, Stroke, Lung cancer, Colorectal cancer, Depression, Type 2 diabetes, Arthritis, Osteoporosis, Asthma, Chronic obstructive pulmonary disease (COPD), Chronic kidney disease and Oral disease.

## **Method**

We reviewed and synthesised Australia specific evidence about contextual factors and subsequent policy options to facilitate team-based models within the primary medical care setting. This paper has drawn upon three key recent Australian based literature reviews including: Swerissen & Taylor (2008); Zwar, Harris., et al (2009); and Naccarella, Scott et al., 2010<sup>3</sup>) and one Australian-based practice capacity study of chronic disease management<sup>4</sup>. A realist evaluation approach guided the analysis and structure of the reviews and synthesis of existing evidence and subsequent policy levers (Pawson and Tilley, 1997).

## **Results**

This section provides an overview of Australian evidence about: chronic care management (CCM) policy and programmatic efforts; contextual factors influencing team-based CCM; effective CCM; and incentives for PHC team service provision for patients with complex and chronic conditions.

## **Australian Chronic Care Management – Programs and Context**

A review of chronic disease management within Australia (Swerissen et al, 2008) stated that the current evidence on the management of chronic diseases in Australian PHC indicate that the quality of care provided is poor. Similarly, a more

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<sup>1</sup> This is based on a definition of primary medical care used in a narrative literature review and synthesis of evidence about models of primary care from four English-speaking comparator countries. Naccarella et al (2006). Primary care funding and organisational policy options and implications: a narrative review of evidence from five comparator countries. MJA 2008; 188 (8 Suppl): S73-S76

<sup>2</sup> <http://www.health.gov.au/internet/main/publishing.nsf/Content/pg-ncds>

<sup>3</sup> [http://www.anu.edu.au/aphcri/Spokes\\_Research\\_Program/Stream\\_Thirteen.php](http://www.anu.edu.au/aphcri/Spokes_Research_Program/Stream_Thirteen.php)

<sup>4</sup> Cross Sectional Study of the Capacity of General Practices to Provide Quality Chronic Disease Care (2002–2005) - see<sup>4</sup> [http://www.health.vic.gov.au/pccps/downloads/careplanning/practice\\_capacity\\_research.pdf](http://www.health.vic.gov.au/pccps/downloads/careplanning/practice_capacity_research.pdf)

recent systematic review of chronic disease management in 2009 found that in Australia many chronic diseases are predominantly managed in PHC and there is a need to understand how to do this more effectively (Zwar, Harris., et al, 2009).

The context of the Australian Health Care System is an important consideration when reviewing and synthesizing evidence to facilitate team-based models for (CDM). In Australia primary care services are a complex mixture of State and Commonwealth responsibilities with public and private providers. Primary care services in Australia include general practice, State funded generalist community health services, private allied health services, pharmacies and complimentary therapists. The largest group providing PHC services are general practitioners. More than 90% of the population see a GP at least once a year and on an average people attend 6.5 times per year. GPs and private allied health professionals, such as, physiotherapists and dieticians, largely work in a small business model while most primary health nurses work in the state funded community health services. The divide between State and Commonwealth in terms of responsibilities, funding structures, organisation and service delivery is an important feature of the Australian health system and has been cited as a barrier to reform. Australia's capacity to develop its future clinical workforce in traditional training settings is resulting in both an expansion of training settings and the pilot of concepts such as student led chronic disease clinics to meet regional workforce development and clinical placement demands (Frakes, 2010<sup>5</sup>).

In December 2008, the Council of Australian Governments (COAG) signed a National Partnership Agreement on Hospital and Health Workforce Reform<sup>6</sup>, with a significant focus on workforce enablers. It is expected that this will enable an expansion of training for a broad range of disciplines, including a significant expansion of traditional and innovative clinical placements in primary care settings.

Since 2005 Australia has had a National Chronic Disease Strategy (NCDS)<sup>7</sup> which seeks to provide an overarching policy framework for action on chronic disease. The NCDS does not contain an implementation strategy as these are the responsibility of individual jurisdictions. The NCDS identifies four action areas: Prevention across the continuum; Early detection and early treatment; Integration and continuity of prevention and care; and Self Management. Commonwealth and State level programs exist that provide the PHC sector with the mechanisms to facilitate chronic care management.

As long ago as 1999, the Australian Government funded the Enhanced Primary Care (EPC) Program, which introduced Medicare Benefits Schedule (MBS) payment items for care planning and case conferencing - an example of financial incentives for GPs to develop structured management plans and set up team care arrangements for patients with chronic care needs. The EPC care planning items were found to not be well understood by patients, nor well received by doctors (Shortus, 2005).

Acting on evidence that multidisciplinary care in teams was the most appropriate method of managing chronic and complex conditions, in 2007 the Australian Government announced new MBS item numbers for Chronic Disease Management (CDM); the General Practice Management Plans (GPMPs) and Team Care Arrangements (TCAs). The Medicare programs for chronic care management were

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<sup>5</sup> Frakes presentation at - Innovate and Educate, Conference – see <http://www.iamevents.com.au/gh/innovate/presentations>

<sup>6</sup>

<http://www.nhwt.gov.au/documents/COAG/National%20Partnership%20Agreement%20on%20Hospital%20and%20Health%20Workforce%20Reform.pdf>

<sup>7</sup> <http://www.health.gov.au/internet/main/publishing.nsf/Content/pg-ncds>

designed to contain many features that were consistent with the elements of the Wagner Chronic Care Model (Bodenheimer et al, 2002). To date, there has been no rigorous evaluation of the extent to which the CDM MBS item numbers have encouraged GPs to work as part of multidisciplinary teams to improve patient care. Anecdotal evidence suggests there is no indication that the EPC items have impacted on communication between PHC professionals or improved team work (Harris et al 2009; Mitchell et al 2008). There are many systemic contextual factors that impede CCM. Barriers have included: paperwork, workload issues, time delays, change in treatment goals; disparities between referral processes (Hartigan, Soo et al 2009; Mitchell et al, 2008) the appropriateness of a 'one size fits all' approach; and the lack of reimbursements for allied health and nursing professionals. . In Australia the dominance of the fee-for-service payments system is also a key factor contributing to the poor quality of chronic care as it encourages reactive, rather than systematic care (Naccarella et al., 2006; Harris & Zwar, 2007). The EPC and CDM items also assume that the GP retains the lead and coordinating role within a team even when this may not act in the patient's best interests or be desired by the team. While the GPMP and TCAs allow other professionals to develop and organise the plans, GPs are still required to sign off on the plans and it is the GP that is reimbursed. Thus this payment system may also act as a barrier to team work. Furthermore, the Medicare programs' incentives for the provision of quality chronic care management are also based on the attainment of process (e.g., adherence to evidence-based best practice), rather than on improvements in clinical outcomes for patients.

As well as initiatives at a national level there have been notable State level programs to better manage the increasing numbers of hospital admissions for complex and chronic conditions that should have been avoided, and to coordinate the existing primary and community care services. State-based programs usually focus on the development of primary care networks, systems development for referral, care coordination and communication between providers and the management of hospital demand (e.g., HARP). This has led to considerable overlap between State-based systems innovations and Commonwealth-funded initiatives (e.g., Divisions of General Practice). Examples include: in New South Wales the NSW Chronic Care Program<sup>8</sup> has targeted the care of people with chronic and complex problems who are frequent users of the hospital system.

#### **Summary Box 1: Chronic Care Management in Australia**

- Quality of chronic care management provided in Australia is poor.
- Commonwealth and state level programmatic efforts exist based on elements of the Wagner Chronic Care Model.
- Contextual factors at the micro, meso and macro level are still impeding effective CCM (e.g., policy & program duplication; dominant GP FFS payments system, cumbersome administrative systems; focus on process and not patient outcomes).

## **Effective Chronic Care Management**

A review of chronic disease management within Australia (Swerissen, & Taylor (2008) reported that effective chronic disease management required *coordinated*,

<sup>8</sup> [http://www.health.nsw.gov.au/pubs/2006/chroniccare\\_3.html](http://www.health.nsw.gov.au/pubs/2006/chroniccare_3.html)

*team based, multidisciplinary care across a service continuum ranging from risk prevention to complex care, as one of an array of systemic factors including:*

- health care organisation that ensures governance and management of health care providers around the needs of consumers for enrolled or catchment populations;
- Partnerships between consumers and providers to ensure consumers are able to effectively self manage risks and chronic disease
- Consistent application of practice guidelines and decision support for the prevention and management of specific conditions such as diabetes, chronic obstructive pulmonary disease and renal disease
- Care pathways for prevention and management of chronic disease where consumers access programs and services on the basis of systematic assessment and care planning
- Integrated information systems for the transfer of client/patient information across providers, the provision of practice guidance and the coordination of care
- Payment models that promote best practice and effective outcomes for consumers.

The systematic literature review of chronic disease management by Zwar et al (2009) found that the delivery system design (DSD), in particular, a multidisciplinary team-approach was effective in improving physiological measures of disease and health care professional's adherence to disease management guidelines, particularly for diabetes, hypertension and lipid disorders. Zwar's review highlighted that the development of multidisciplinary team care, especially the role of practice nurses, reminders and proactive follow up were important in the management of chronic conditions. The main barriers to effective DSD interventions tended to occur at the organisational level. In order to be effective there had to be a change from a reactive system of health care to a system that was proactive. Furthermore the roles of the multi-disciplinary care team members needed to be clearly defined and where there was no reimbursement for delivering patient reminders for follow up the process was less effective. These findings are supported by current research on the role of practice nurses in the general practice setting (Phillips, Pearce et al, 2008).

With regard to the delivery system design, Zwar et al (2009) recommended *supporting training of primary care staff in a multidisciplinary team approach to the management of chronic disease*, and that training should focus on clear roles and responsibilities of the team members, as one of several team-based related recommendations, including

- extending the financial support for practice nurses to become more involved in self-management especially group programs for patients in general practice, including self-management education.
- extending the financial support for practice nurses to provide group clinics and outreach visits for patients with chronic disease, including self-management support.
- linking the referral to allied health providers under Medicare arrangements to facilitate multidisciplinary self-management support in general practice.

The Practice Capacity Research Study<sup>9</sup> was designed to measure the degree to which four aspects of practice capacity was associated with the quality of care for patients with any of the following chronic conditions: type 2 diabetes, moderate-to-severe asthma, hypertension and/or ischaemic heart disease. The four aspects of practice capacity studied were: *Multi-disciplinary team working* within the practice (involving GPs, nurses, practice managers, receptionists and allied health professionals); *Practice-based clinical linkages* with other providers and services; *Information management systems* and the extent to which the practice uses information technology to maintain these systems effectively (IM/IT maturity); and *Business and financial management* in the practice.

With regard to team-based care, the study found: that:

- the quality of chronic disease care in general practice was related to the level of teamwork among staff, the use of computers to enable effective medical record management and patient follow-up, and attention to business planning
- the quality of clinical linkages with other providers beyond the practice was correlated with overall quality of chronic disease care and patients' assessment of the care received;
- smaller practices tended to achieve better clinical care (other factors being equal), but larger practices can overcome this by better organisational systems; and
- practice nurses could make an effective contribution to chronic disease management.

Harris et al (2006) concluded that the Australian health system would benefit from an investment in supporting practices to develop:

- team roles, information systems and business development processes to achieve evidence-based care;
- team climate within the practice;
- effective links with outside providers and services, to ensure that patients with chronic diseases can access the services they need over time; and
- coordination of policy and programs at national, state and local levels.

#### **Summary Box 2: Effective Chronic Care Management in Australia**

Effective CCM requires:

- Multiple systemic level reforms, of which 'Coordinated, team-based multidisciplinary care' is only one element. Others include: governance, management, partnerships structures, practice guidelines; care pathways, information systems and payment models
- Delivery systems designs that support multidisciplinary team approaches – which require: strengthening the training of staff and extending financial support to nurses
- Coordination of policy and programs at national, state and local levels, and investment to develop practice capacity to supports team roles, team climate, information systems and business development processes

An Australian example of a team-based model for CCM which illustrates much of the evidence about what works and what impedes CCM is the **GP Partners – Team Care Coordination model**<sup>10</sup>. Team Care Coordination aims to improve the health and wellbeing of patients with chronic and complex conditions through a coordinated team approach. Community nurses (*Team Care Coordinators- TCCs*) work closely with GPs and other providers to plan and manage the services required by patients.

<sup>9</sup> [http://www.health.vic.gov.au/pcps/downloads/careplanning/practice\\_capacity\\_research.pdf](http://www.health.vic.gov.au/pcps/downloads/careplanning/practice_capacity_research.pdf)

<sup>10</sup> [http://www.gppartners.com.au/page/Programs/team\\_care](http://www.gppartners.com.au/page/Programs/team_care).

A trial of the Team Care Coordination model revealed that having a TCC was useful and overall improved care. However, the GP should not necessarily be the “Lead” coordinator in each case. Similarly the system of capitation and protocol in the model re-enforced the concept of the GP having the lead role instead of the service coordinator. This was further impeded by professional regulations, legislation and insurance issues that caused concern over professional accountability for patients. E- Health systems were found to also be vital in the sharing of information and implementing the TCC.

Another example of a team-based model for CCM in Australia is the **Australian Primary Care Collaboratives (APCC) program**<sup>11</sup> ([apcc@improve.org.au](mailto:apcc@improve.org.au)). The APCC was introduced in 2003-2004 to find better ways to provide services to patients through shared learning, peer support, training, education and support systems. The APCC is a promising initiative that understands the importance of team work, and has created resources and made significant efforts to assist practices in achieving and improving teamwork processes in primary care. Feedback to date indicates that there have been impressive improvements in quality of care for patient with chronic and complex conditions. However, to date, evaluative efforts have focused on APCC program clinical outcomes and not on the extent to which the APCC methodology has facilitated team-based care to improve patient clinical outcomes.

### **Incentives for PHC Team Service Provision**

A systematic narrative literature review of incentives for PHC team service provision for patients with complex and chronic conditions (Naccarella, Scott., et al, 2010) found:

- Limited empirical evaluative evidence exists on incentives to promote team working within PHC, or on how policy changes influence team working in PHC
- Team work is not an end, but a means, to achieving better quality, coordination and continuity of care, particularly for patients with complex and chronic conditions
- Inter-professional education and learning (IPE/L) initiatives can encourage team work, but does not automatically result in team work as it is a means to an end not an end in itself
- Fee-For-Service payment systems are a barrier to team work within PHC as it reinforces professional autonomy and independence
- Blended payments systems are being used to reward team work, however, limited evidence exists on their effects on team working and on outcomes
- Practice level payments can enhance approaches for team work, however they do not guarantee that team work will be provided, and limited evidence exists as to the effect on specific funding parameters on team work.
- Regional level PHC organisations can enable and support team work however, funding, organisational and regulatory systems need to align
- Practice level support and e-health infrastructure systems can support team work for patients with chronic and complex illness
- Workforce reforms need to facilitate teamwork, by providing PHC team members (e.g., PNs, PAs) with opportunities for career development, IPE/L, autonomy, leadership and financial rewards
- Patient feedback can act as an incentive for team work if it is linked to performance management systems or quality improvement cycles

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<sup>11</sup> [apcc@improve.org.au](mailto:apcc@improve.org.au)

- Regulations exist that can promote or hinder team work in PHC including regulations on scope of practice; however, limited evidence exists regarding the impact of such regulations

The Naccarella et al (2010) review also suggested three themes of policy options to establish supportive environments to enable effective team work for patients with complex and chronic conditions, namely:

**1. Preparing the future PHC workforce to learn and work together** - embed IPE/L into university curricula; and increase practice level infrastructure to support IPE/L placements.

**2. Supporting the existing PHC workforce to learn and work together** - embed practice level infrastructure support into general practice; build upon the national registration scheme; build upon accreditation schemes; build upon workforce reform to expand the PHC workforce roles & skills mix; implement organisational and clinical governance structures that support; team based care; and implement practice level team based performance management and payment systems.

**3. Sustaining an evidence based PHC workforce to learn and work together**- establish a national policy mandate for teamwork; develop an evaluation strategy specific for teamwork initiatives; develop team focused evaluative tools and indicator sets; investigate relationship between team work in PHC and patient outcomes; and facilitate the translation of evaluative evidence into policy making.

## Discussion

Overall the Australian review and synthesis of evidence about what's working in team-based CCM reveals that National and state level policy and programmatic investment has and is occurring based on key features of the evidence-based Wagner CCM. The evidence consistently suggests that three interdependent contextual factors (and subsequent policy levers) need to be addressed as they influence the way the primary care medical workforce is being supported to work in team-based CCM, including:

- the current GP payment system;
- the role, value and contribution of an expanded workforce (practice nurses) to CCM; and
- the practice organisational capacity to support team-based CCM.

Indicative evidence also exists that more generic mechanisms such as: interprofessional education & training and regulatory strategies (e.g., national registration scheme) can also facilitate team-based CCM. A promising advent is the growing number of rurally-based, longitudinal, immersive clinical placements for medical students. Placements such as this contribute to the development of deeper medical student understanding of issues associated with CCM. However, the existing Australian medical training model post university graduation is a significant barrier to interdisciplinary practice in a primary care setting. Prior to obtaining general medical registration, graduates in Australia must complete twelve months in an accredited intern training program. The majority or all of this internship is spent in secondary and tertiary care environments. New medical registrants generally complete a further period of prevocational training in a similar setting before entering specialty training, including general practice. Exposure to the primary care setting is not mandated. This entry path to professional practice often results in a medical workforce acculturated to healthcare teams dominated by the medical profession. In

Australia as in other countries evidence is accumulating that inter-professional education and learning (IPE/L) is not simply an end in itself by providing students with an opportunity to understand the perspectives of other professions, but can be a means to assisting health professionals learn to work together in teams in an ongoing and sustainable way. However, a lack of understanding about IPE/L still exists and IPE/L is often not being formalised in higher education with numerous institutions teaching professions in professional silo's. Furthermore, a lack of evidence exists about what models of IPE/L work, for whom and in what circumstances, due to a lack of rigorous and systematic evaluation of existing models of IPE/L. A national research and evaluation strategy is needed that informs IPE/L as a means to enabling students to learn together and hence work together in multidisciplinary team based PHC.

The next sections discuss briefly the three interdependent policy levers.

### **Policy Levers 1: Implement practice level team based payment systems**

Evidence exists that current GP FFS payment system reinforces professional autonomy, independence and thus act as a barrier to team work in CCM. The Australian EPC/CDM items do not adequately respond to the complexities associated with developing, implementing and sustaining team based care for people with chronic and complex conditions. The EPC/CDM model also suffers from complex paperwork, organisational and legislative barriers. Thus there is a need to refocus financial, organisation and structural systems that underpin the way that team work is funded and supported. Sufficient evidence exists that there is a need to reinvest funding from the EPC/CDM items into the development of a limited capitation payment based on a voluntary enrolled population of patients with chronic and complex conditions. This would ensure that professionals are able to develop appropriate interventions according to patient need while maintaining appropriate levels of communication, management support and autonomy in decision making with other team members.

### **Policy Levers 2: Strengthen an expanded CCM workforce roles and skills mix**

Evidence exists that an expanded primary medical care workforce, such as practice nurses have a key role in CCM, however, they need to be supported to work together as teams via funding mechanisms. Possible payment mechanisms may include practice level capitation payments based on an enrolled patient population and/or collaborative contractual agreements or grant or outcomes payments for chronic conditions, as well as governance arrangements such as practice-based shared clinical governance.

### **Policy Levers 3: Strengthen practice organisational capacity to support team-based CCM**

Evidence exists that the delivery system design and organisational practice capacity are key to enable team-based CCM. The Australian Primary Care Collaboratives (APCC) being implemented via Divisions of General Practice program have resulted in better health outcomes for patients with chronic disease and anecdotally improved working relationships.

However, to date, evaluative efforts have focused on APCC program clinical outcomes and not on the extent to which the APCC methodology has facilitated the process for GPs and other PHC providers to work together to improve patient clinical outcomes. Process and health systems level evaluation of the APCC program is required about how it is facilitating multidisciplinary team work within PHC.

Overall to date a lack of systematic and coordinated research and evaluation exists on the use of multiple systems (payment, governance, organisational) to support team-based care in CCM.

### **Conclusion**

The Australian based review and synthesis has revealed that policy and programmatic efforts have the potential to work in CCM if: coordination of team-based CCM policy and programs occur at national, state and local levels; if three interdependent policy levers are enacted: practice level team based payment systems; expanded CCM workforce roles and skills mix; and practice organisational capacity to support team-based CCM; and if future policy reforms/initiatives have funded evaluation plans that utilises evidence and team based care evaluative frameworks, methodologies and tools.

Acknowledgement: This paper was informed by research (Zwar, Harris., et al, 2009); and Naccarella, Scott et al., 2010) funded by the Australian Primary Health Care Research Institute, which is supported by a grant from the Australian Government Department of Health and Ageing under the Primary Health Care Research, Evaluation and Development Strategy. The information and opinions contained within it do not necessarily reflect the views or policies of the Australian Government Department of Health and Ageing.

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## Canada: a Case Study

### Interprofessional Team-based Care for Chronic Complex Illness

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#### *The Burden of Chronic Conditions in Canada*

Chronic health conditions affect every Canadian in terms of their own health, and as caregivers, coworkers, family members, neighbours and friends. Over 40% of Canadian adults reported that they had at least one of seven common chronic conditions (arthritis, cancer, emphysema or chronic obstructive pulmonary disease, diabetes, heart disease, high blood pressure and mood disorders, not including depression), (CIHI, 2009). In 2002, there were over 2 million caregivers aged 45+ years (Hollander, Liu, and Chappell, 2009).

The cost of healthcare in Canada is high and rising. Canada's total expenditures on health for 2007 were estimated to be 10.1% of GDP -- up from 8.8% in 1997, and surpassed only by France (11%), Germany (10.4%), Switzerland (10.8%), and the US (16%). In per person terms, total expenditure is \$3,895 US, up from \$2,152 in 1997 (OECD, 2009).

Beyond the impact on the healthcare system, chronic illness affects productivity, for both those with health conditions and their caregivers. In 2007, nearly one in four Canadians reported caring for a family or friend with a serious health problem in the previous year. Many have taken leave from work or have left jobs, often with serious repercussions for their personal health. A reasonably conservative estimate of the imputed economic contribution of unpaid caregivers for Canada, for 2009, is \$25-\$26 billion. This does not include the opportunity costs (lost wages) of clients and caregivers, the cost of health impacts on caregivers due to the stress of care giving, the implications of tax and social welfare costs and other such factors. (Hollander, et al, 2009)

The health system is the largest economic investment in Canada. If spending continues as it is, it risks eroding other publicly funded programs. The increase in the provincial health care budgets is at the expense of other ministries – many of which contribute to the health of the population. Projections have shown that without any new actions to promote health and prevent disease (i.e., by maintaining the status quo), by 2017, the BC Ministry of Health would require 71.3% of the total budget of the government, an increase from 41.6% in 2005-06. Canadians have long held as a core value, a strong, equitable health system. However, increased spending at this rate would be intolerable, since Canadians' top priorities for quality of life are: primary and secondary education, health care access, a healthy environment, clean air and water, social programs, responsible taxation, public safety and security, job security, employment opportunities, a living wage, balanced time use, and civic participation. These common themes cut across regions, social backgrounds and various demographic characteristics. (Canadian Institute of Wellbeing, 2009).

## ***Canada's Performance***

Although there is recognition that for effective management of chronic conditions a strong primary care system is needed and in spite of the fact that 50% of its medical workforce is made up of family physicians, Canada is falling behind other countries in performance and infrastructure to support primary care for people living with multiple chronic conditions. In a review of primary care experience in Canada, McMurchy argued that: "Canada's primary care sector lags behind other countries with similar wealth and health systems, most notably in after-hours care, wait times, chronic disease management, mental health, quality improvement and electronic medical records. Moreover, Canada's primary care sectors are characterized by fragmentation, ineffective use of providers, and inefficient use of resources (e.g., redundant testing, overlap of care, a lack of health promotion, poor information sharing and a misalignment of incentives)" (McMurchy, 2009).

People with chronic conditions rely on primary care that is well-connected to other aspects of the health system, particularly people with a high need for support, such as seniors. A recent study suggested that seniors in Ontario have about 70 points contact with the health system every year -- i.e. family physician visits, specialist physician visits, emergency department visits, drugs, lab claims, X-rays, inpatient admissions, CT scans and MRI scans (Nie, Wang, Tracy, Moineddin and Upshur, 2008). This translates into some form of health services every five days, and does not account for the number of contacts they may need to make to arrange for these points of contacts (e.g. phone calls to schedule, prescription drop off and pick ups). As McMurchy notes, while people living with chronic conditions need frequent access to healthcare, Canadians face **limited access** to primary care:

- A recent Statistics Canada report revealed that in 2007, 15% of Canadians aged 12 or older did not have a regular medical doctor (Scobie 2009).
- 16% of the adult population reported going to the emergency department for a condition that could have been treated by their regular physician if he/she were available, and 45% of those with a chronic illness reported visiting the emergency department in the past two years, the highest rates among eight study countries, the others being France, Australia, United States, United Kingdom, Germany, New Zealand and the Netherlands (Commonwealth Fund, 2008).
- Among the eight Commonwealth Fund countries, wait times for accessing specialists was longest in Canada, NZ and UK (Schoen et al, 2009), and 22% of Canadians reported that they got an appointment to see their regular doctor on the same day they called, the lowest rate among the countries studied. (Schoen, 2009).

## ***Canadian Investments in Team-Based Primary Care***

Canadians deeply value the publicly funded healthcare system, and they expect it to meet their needs. Repeatedly, Canadians have reinforced a commitment to a healthcare system that reflects our values of equity, compassion, collective responsibility, individual responsibility, respect for others, efficiency and effectiveness (National Forum on Health, 1997). At the same time, there are growing concerns about the sustainability of our health system, and a recognition that we need to preserve and enhance it for our families, their children and their children's children. Canadians have consistently called for changes through three reviews of the Canadian Health System initiated by the federal government in the past fifteen years: the National Forum on Health (1994-1997), the Commission on the Future of Health Care (Romanow Report, 2002) and the Report of the Standing Senate Committee on

Social Affairs, Science and Technology (Kirby Report, 2002). Common themes in these reports included: better integrated primary care and home care, enhanced technology, and improved coverage for prescription drugs. As a result, additional funding has been provided, including a 2004 commitment for a \$41-billion federal infusion into the system over 10 years, a sum that was trumpeted by the federal government as closing the "Romanow Gap". (First Ministers' Accord, 2003)

In 2003, the First Ministers' Accord vowed that "by 2011, 50% of Canadians will have access to primary care teams." British Columbia, Alberta, Ontario and Quebec, the largest provinces, have invested in substantial provincial initiatives aimed at integrated, population-based, person-focused team-based primary care, but these are not the mainstream for the population. For example, 25% of the target population in BC is now served by teams, and 19% of primary care physicians in ON work in interdisciplinary models of care (Health Council of Canada, 2009). Primary care teams are being introduced across the country but with limited penetration as is evident in Table 1.

Table 1

Province/Territory	Model	Uptake
Nfld & Lab	Primary Health Care Teams	27% pop
PEI	Family Health Centres	25% pop
Nova Scotia	Primary Care Teams	10% FPs
New Brunswick	Community health Centres	7% pop
Quebec	Groupe de Medecins de Famille	Target 300
Ontario	Family Health Teams	16% pop
Manitoba	Physician Integrated Networks	9 FPs
Saskatchewan	Primary Care Teams	29% pop
Alberta	Primary Care Networks	60% FPs
BC	Integrated Health Networks	25% pop
Nunavut	Teams are model	
NWT	Integrated Service Delivery Model	
Yukon	Chronic Conditions Support Program	

Based on Health Council of Canada, 2009

Across Canada, there are multiple “islands of innovation” that move in the direction of integrated, comprehensive primary care teams. These include: new models for team-based primary care; new roles for health professionals, in terms of interprofessional practice, expanded scope of practice and novel forms of delivery like telemedicine; learning networks; population-based planning; self-management; and improving interfaces between parts of the care continuum. In the next section, a few of the most promising initiatives are described.

### Case Study: Alberta

The most comprehensive approach to chronic disease care in Canada to date has been in Alberta, where a system-wide approach to chronic disease management was undertaken in 1998 when chronic disease was recognized as representing 75% of health care cost (Sargious, 2007). Capital Health in Edmonton first adopted an extended chronic care model to redesign services for patients with diabetes, then entered into an agreement with other regions to create primary care networks (PCNs) to improve access to and focus on care for patients with chronic disease (Every, 2007). Subsequently, the Calgary Health Region introduced the Chronic Care Model within primary care and within community-based programs called “living well,” which focused on exercise, education, self-management, support from chronic disease nurses and distributed IT support. Over a 12 month period, the comprehensive approach in Calgary significantly improved control of diabetes, emergency department admissions and in-patient admissions. The reduction of 19,735 fewer bed days in the province represents \$16.9M in hospital costs (Sargious, 2007).

The Alberta approach has included practice redesign, skills development for practitioners, community linkages, information system enhancement and patient self-management programs. The current vision is to have every primary care physician in the province involved, with changing physician practice, including: multidisciplinary team leadership; integrated care planning (including new fee code); motivational interviewing; group visits; revisiting traditional referral patterns (central triage and phone consultations), and public health advocacy.

### **Family Health Teams and other Models in Ontario**

In Ontario, the government has initiated a central transformation strategy of Family Health Teams (FHTs). The explicit aim is to provide more Ontarians with access to primary health care, and in the process, FHTs have created opportunities to develop innovative interprofessional care models, as well as creating the infrastructure that enables population-health approaches to primary care, through remunerating physicians based on rostered patients rather than per visit. FHTs are the most comprehensive of Ontario's blended and specialized models of primary care, which also include family health networks and organizations, community health centres, and rural physician group agreements. As of January 1, 2010, there were 7,547 family physicians in Ontario practicing through one of the Primary Health Care models providing care to over 9.2 million enrolled patients.

One of the most noteworthy models in Ontario is the Sault Ste. Marie Group Health Association Clinic, a community-based primary care organization with more than 60 physicians and 300 other staff. Cooperatively run by a community board and the Algoma District Medical Group, the group provides primary health care to more than 80% of the municipality's residences, structured on comprehensive population level coverage. The group has had a comprehensive medical record since 1997, with access to EMR that allows triaging of high risk patients. The Sault's Clinic has been considered a national leader in health-care innovation for decades.

Another innovation of note in Ontario is the Interprofessional Model of Practice for Aging and Complex Treatments (**IMPACT**) at Sunnybrook Hospital in Toronto. This Family Practice provides weekly clinics that bring together a pharmacist, social worker, nurse, occupational therapist with residents and staff physicians to solve complex patient problems in a teaching environment.

### **BC's Integrated Health Networks**

Similarly to Ontario, British Columbia's government has made "promoting integrated health teams and networks to provide a more integrated, patient-centred experience" a priority. Some of the elements behind this strategy have included primary care enhancements using an expanded chronic care model, focused on integrating services to meet the needs of complex populations. Early findings suggest that quality of care and patient outcomes are improving (Tregillus, 2008). Like Ontario, BC is also expanding traditional roles for health professionals through expanding scope of authority and practice. In 2009, BC announced it was expanding the scope of practice of pharmacists, registered nurses, midwives and naturopathic physicians. Among other new roles, this enables RNs to independently provide a broader range of health services, including dispensing and administering prescription medications in urgent situations.

## **Quebec: Groupes de Médecins de Famille (GMF)**

Aligned with the movement toward team-based care, Québec was the first province to undertake an assertive effort to set up family medicine groups that would cover everyone within the province, and would provide links to community health centres (CLSCs). The goal is to improve access to physicians and to improve patient follow-up and service continuity to wellness, health promotion and care. Family physicians are expected to group together and work with other health care professionals based on population need. The government has committed to having 300 GMFs across the province by the end of this transformation.

Stronger interfaces across the continuum of care are being created in other aspects of care in Quebec as well. At the Montreal Jewish General Hospital, for example, the Emergency Department (ED) has taken the approach that not every patient needs to be admitted. Relying on its own evidence-based protocols, the ED staff admit only those with the most serious illnesses that require more attention; the rest are stabilized and discharged -- but not before the hospital ensures they will receive follow-up care in the community.

### ***Needed Investments***

Clearly, there are pockets of innovation across Canada that begin to sketch out an infrastructure to move the country toward population-based, person-focused, integrated, interprofessional care for people with chronic conditions. In order to ensure that these become the norm across the country a number of additional investments are needed in information management, performance management and research, infrastructure supports for practice, and education. The “Primary Care Medical Home” described by the College of Family Physicians of Canada, includes many of the critical elements in which Canada needs to invest (CFPC, 2009).

### **Information Management**

Through Canada Infoway, there has been significant investment in Information technology across the country. Regardless, Canada again ranks lowest on the list of countries studied by the Commonwealth Fund, with patient records or information “often or sometimes” unavailable to physicians at the time of a scheduled visit 41% of the time (Commonwealth Fund, 2008). Only 23% of primary care physicians in Canada use electronic medical records, compared to 79% or more of the primary care physicians in Australia, the Netherlands, New Zealand and the U.K. (Schoen 2007). And finally, only 15% of patients in Canada can communicate with their physicians online, again the lowest among the eight countries studied by the Commonwealth Fund in 2008. Although these statistics are a few years old, they reflect a slow trend of adoption.

Canada is now at a point when future investments must target the factors that have shown successful adoption of EHRs by primary care teams, namely: usability by the providers and supports for the implementation of new systems (Keshavjee, et al, 2010). In addition, systems are needed to support patients to access their health care information as well as to play a key role in managing their conditions.

### **Performance Management and Research**

Of eight Commonwealth Fund countries, Canada reported the lowest rates for training in quality improvement methods and tools among primary care physicians

(44%), and were least likely to have set formal targets for clinical performance or to have data available on clinical outcomes (Schoen 2006). Forty-five percent of Canadian primary care physicians had conducted a clinical audit of patient care in the previous two years compared to 76%, 82% and 96% of those in Australia, New Zealand and the U.K., respectively. Eleven percent said they routinely receive data on patient experience and satisfaction, again the lowest rate in the countries studied.

The current trend in Canada is to create “evidence-based” benchmarks or established targets for primary care that are still largely based on single disease indicators. Johnston, Dahrouge and Hogg (2008), for example, give examples of performance indicators for primary care as proportion of diabetics with a primary care provider, with glycosylated haemoglobin (HbA1C) testing in the past 12 months, and HbA1c level at below or target value. Even in this context, however, the need to develop indicators that capture more comprehensive quality is clear, since “there are many aspects of day-to-day primary care that are not accurately captured in billing data” (Johnston, Dahrouge & Hogg, 2008). For example, Rowan, et al (2009) have developed a logic model that provides a more comprehensive approach to measuring care for people with chronic conditions within Primary Care, with the long-term outcomes being: the health of the patient, provider function, population-based outcomes, and cost.

A culture of accountability is needed in practice whereby primary care providers from all health disciplines recognize the importance of measuring their performance, comparing it to their peers and changing their behaviours. However, indicators that reflect the nature of primary care must be developed and tested in order to measure access, attachment, continuity, comprehensiveness and other elements that are tied to improved patient outcomes (Starfield, 2010).

### **Infrastructure for Practice Re-Design**

In order to support new primary care models made up of interprofessional teams that provide person-focused care, there is a need for appropriate remuneration models, investment in team development, and support for patient self-management.

Up until very recently, the predominant remuneration method for family physicians was fee-for-service, which many have argued may not promote collaborative practice (McMurchy, 2010). There has been a steady shift to other forms of remuneration that include capitation-based, sessional rates, salaries, and blended models that may or may not include incentives for achieving various targets (National Physician Survey, 2008). In addition, various methods have been used to remunerate other health professionals who work within these collaborative models. Some are “hired” by the physicians, others are on contract through hospitals, health centers, or health authorities. Unfortunately there have been no studies to examine whether one method is superior to another in what type of setting (Barrett, 2007).

Barrett (2007) also argues that we do not yet understand what types of collaborative models meet what types of needs in particular contexts. As a result it is very difficult to provide the needed education and training for newly formed teams or ones that have been in existence. Clearly on-going professional development on team functioning is required for success (McMurchy, 2010).

A recent survey found that 40% of Canadians with a chronic conditions reported not having made a treatment plan with their provider within the last 12 months, and less than one in four were provided with a written list of instructions to manage their disease (23%). In addition, 40% of patients with three or more chronic conditions reported they were rarely or never counselled in the last 12 months about what to do to improve their health (CIHI, 2009). How to support patients to be actively involved in their care is not well understood in terms of best methods, delivered by the right provider, over what time frame (Kleinder, 2008).

## **Education**

As the health system is renewed to support people with chronic conditions in Canada, a commensurate shift in both pre-and post-licensure education is required. The Romanow Report (2002) stated that “In view of ...changing trends, corresponding changes must be made in the way health care providers are educated and trained. If health care providers are expected to work together and share expertise in a team environment, it makes sense that their education and training should prepare them for this type of working arrangement.”

Health professionals need to be able to practice in an interprofessional way, plan and deliver population-focused care, improve quality from a systemic, holistic view, integrate care with other aspects of the system, support self-management, and counsel clients in a person-, not disease-, focused way.

The government of Canada (First Ministers Accord, 2003) invested \$20 million from 2003-2009 to support interprofessional education (IPE) across the country that resulted in 20 projects based primarily in universities. Further investments have supported a national project, Accrediting Interprofessional Health Education (AIPHE), that brings eight health education accrediting bodies representing six professions to develop standards for IPE (AFMC/AIPHE, 2009). The Association of Faculties of Medicine has led the Future of Medical Education in Canada (AFMC/FMEC, 2010) project that has a clear recommendation on the need to educate medical students in interprofessional collaborative practice.

## **Conclusions**

To create a person-focused, comprehensive care for people living with chronic conditions, the health delivery system needs to enable long-term relationships between patients and providers, accessible and meaningful knowledge about both individuals and population served, guidelines for care that account for multiple conditions and contexts, and adequate time and skills within provider visits to understand the patient's current life context and capacity for self-management. There is a strong argument that a critical factor in enabling these elements is to reshape and strengthen team-based primary care as the hub for person-focused care, with strong interfaces across the continuum of care. Canada is making significant changes in primary tem-based care with pockets of innovation found across the country. However, to become the standard of care there is a need for further investment in appropriate information technology, systems of performance measurement and the research to inform quality improvement in practice, determination of appropriate remuneration models, professional development, supports for patient self-management, and education across the continuum.

Acknowledgment: This paper was informed by an assessment by the Canadian Academy of Health Sciences on “Improving Chronic Disease Outcomes through Health System Transformation”

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## United States: A Case study

### Inter-professional teamwork: The Right Team, The Right Place & The Right Time.

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#### Introduction:

Interdisciplinary group work is ubiquitous at every level of the U.S. health care system, including primary care. Interdisciplinary teamwork, however, in many ways lacks the same level of omnipresence, particularly in primary care. As the nation's incidence of chronic disease and its accompanying costs rapidly outstrip the capacity of the primary care work force, this distinction between "groups" and "teams" becomes increasingly important.

Literature from health care, business and organizational psychology agree: the presence of an interdisciplinary group does not equate to an interdisciplinary team.[1] An interdisciplinary group includes people from different training backgrounds working together on a set of tasks. An interdisciplinary team, however, is committed to a long-term vision of continuous improvement and shared decision-making. It is vital that primary care groups in the U.S. evolve to this vision of teamwork. To do so,

we need to concurrently re-imagine how, where and when primary care is delivered and how to train professionals in leadership and teamwork. We need to cultivate a new culture of inter-professional respect and learn how to leverage technology and tools that can better connect teams to each other and the communities they serve.

### **The Right Team:**

It's well known that the U.S. health care system spends more as a percent of gross domestic product and per capita than any other country on health care[2]. Yet outcomes such as the rate of preventable deaths, infant mortality, and life expectancy are not always better and sometimes worse than most other developed countries. [3] [4] Clearly, the system is not meeting the needs of the population. One step critical to any system redesign that strives to improve population health is rethinking the mix of disciplines working on a team.

It is taken for granted that physicians, physician assistants, nurse practitioners, registered nurses, dietitians, medical interpreters, social workers, health behaviorists and other professionals all contribute to a primary care team. But what is too often overlooked in primary care teamwork is the role of patients, their families and their communities as equal partners on a team. In the United States an estimated thirty-four million family caregivers, the majority of them women, provide 75-80 percent of long-term care in the community. The estimated value of their unpaid labor is \$375 billion a year – an unpaid contribution not calculated in the costs of long-term or health care.[5] According to a 2008 Institute of Medicine report: “The definition of the health care workforce must be expanded to include everyone involved in a patient’s care: health care professionals, direct-care workers, informal caregivers (usually family and friends) and patients themselves. All of these individuals must have the essential data, knowledge and tools to provide high quality care.” The report added: “Exactly when and how providers need to incorporate the family into the health care process is not yet well understood but such incorporation is relevant across the full spectrum of institutional, ambulatory, and residential patient-care settings.[6]

Likewise, teams need to find ways to incorporate and coordinate the supports already existing outside of health care institutions, such as social service agencies, schools and churches, which already have major roles in health care, and with additional resources, could do far more. When care responsibilities are shared by empowered members, teams are able to precisely target care strategies for complex patients who too often end up moving back and forth between office visits, emergency room visits, the hospital and nursing homes.

Key to this expanded model of a primary care team is training professionals to identify and work with partners and respect their many contributions.

The Macy Foundation in a recent conference paper asserted that “Health professionals need to develop attitudes that welcome patients as partners in care, moving beyond the current model of intermittent, facility-based contacts. “ [7]

### **Using the right provider at the right time:**

A keystone of teamwork is empowering team members to execute according to their scope of practice, experience and education. [8] Clay Christianson writes that shifting professionals up to handle tasks at the edge of their license is a positive “disruptive innovation” that expands access and lowers costs for consumers. However, this idea has come with no small amount of strife as professional associations fight the expansion of scope of practice at the state and federal level.

Christianson advises that instead of fighting this trend, professionals should instead “disrupt those above them rather than fight a reactionary and ultimately futile battle with disrupters from below.”[9] The Macy Foundation’s conference summary also recommended that “regulatory and reimbursement policies should be changed to remove barriers that make it difficult for nurse practitioners and physician assistants to serve as primary care providers and leaders of patient-centered medical homes or other models of primary care delivery (7).

This move toward true teamwork requires a cultural shift away from thinking in terms of “low-level”, “mid-level” and “higher level” providers (terms that can be perceived as demeaning to nurse practitioners and physician assistants). To achieve true teamwork, we will need to identify the factors preserving hierarchy and recognize that all team members are integral.

A good example of inter-professional respect and attention to the chronology of when care should be delivered is the state of North Carolina’s Medicaid program. Conceived from the beginning as a series of regional networks that include primary care providers and other local agencies, the program has evolved to Community Care of North Carolina program (CCNC), a coalition of 14 separate networks, each focused on local populations and the providers and agencies who care for them, allowing local experiments in care delivery, within an overarching state framework.. Key to the success of these networks is a heavy reliance on trained, competent care managers who work with patients outside of clinicians’ offices and help coach individuals how to manage their own care and appropriately navigate the system. [10]

At the regional level, CCNC has improved outcomes for Medicaid enrollees and lowered unnecessary or avoidable emergency room usage in multiple counties by collectively identifying outcomes that matter. CCNC pooled the talent and expertise of networked providers from different specialties and disciplines and asked them to come up with the measures most meaningful to their region to evaluate. By doing this – and providing the right incentives -- health care delivery has become more responsive to the specific regional needs of its community.

### **Providing primary care in the right places:**

In the U.S., too often our health care infrastructure has been built around the needs of health providers rather than health care consumers. To move away from disjointed, expensive and inappropriate use of the emergency room and develop a more consumer-centered focus, we need to rethink where primary care is delivered and orient systems around the needs of the patient rather than the needs of health care providers. In particular, we need to think creatively about how best to serve the uninsured and underserved.

Retail clinics led by nurse practitioners or physician assistants are not without controversy. But for many with and without insurance they provide easy access to a limited menu of care including immunizations, school and work physicals, and the diagnosis and treatment of common illnesses. [11] The clinics are oriented around the needs of the communities they serve and are usually attached to retail businesses with hours and locations geared toward customer convenience.

At the local level, the “Just for Us” program in Durham, NC is the result of partnerships among Duke University Medical Center, the Durham Housing Authority and other community entities to offer elderly and disabled residents of public housing with accessible and highly coordinated care. Physician assistants provide home health visits for chronically ill elderly and disabled residents and use information

technology to share information and closely coordinate care among physician specialists, pharmacists, social workers and other members of a resident's care team. [12] Duke and Durham are currently in the process of drilling down even further through a pilot program that is creating "incubators" of university-community partnerships that address the specific disease burdens of the community and integrate research and health care delivery challenges in a way that centers on improvement of community outcomes.[13]

### **Use of information technology that facilitates teamwork:**

Teamwork is greatly enhanced with information technology that strives toward seamless transitions, empowers patients with information and enables cycles of quality improvement. The existing health care system's relationship with information technology has been marked with inefficiency, duplication, waste and medical errors as clinics, hospitals, providers, and vendors have employed multiple information technology systems with differing standards for quality. Medical information at the individual and collective level too often gets trapped in technology silos that lack any ability to coordinate and integrate. An information technology system that captures patient information seamlessly across community-based health systems, hospitals, and provider settings would provide all patients who seek services with timely access, emphasize prevention and chronic care management, organize care around the patient's needs, coordinate care across settings, increase communication and patient safety, enable researchers to identify trends, and empower patients and their families with their own clinical information so care is appropriate, timely, equitable, coordinated, and focused on the patient's needs. [14, 15] A common regional or national database for health information that can be accessed by different EMR interfaces would be ideal, but local data repositories that support local decision support can also be effective. Information technology can also be used to empower patients through patient-facing technology such as home monitoring and decision support systems.

The Office of National Coordinating for Health Information Technology (ONC) has been working at a rapid pace to develop and implement a national interoperable health information technology infrastructure. Established in 2004, it is working toward a goal of every American having an electronic medical record by 2014. Key to these efforts is diverse input at the regional and local level – including surveying patients to identify their preferences for privacy and accessibility. "Our goal, above all else, is to make care better for patients, and to make it patient-centered. Information policy and health IT policy should serve that goal," said director David Blumenthal, MD.[16]

### **Inter-professional respect:**

Finally, for the U.S. to truly improve primary care, a larger cultural shift toward inter-professional respect must occur. Too often primary care teams are conceptualized as hierarchical work groups instead of true teams. Strengthening teamwork requires a cultural shift in language, behavior and strategy.

Professional associations have a large role to play in this shift by ending the "turf wars" that often occur when scope of practice is expanded at the state or payor level. Leadership is needed across professional entities to imagine and advocate for—at the state and national level—laws and regulations that facilitate affordable, high quality and accessible primary care.

Academic medical centers have a role to play in this objective. The hierarchy of health professional education is an important ingredient in the “hidden curriculum,” sending the wrong message to health professions learners. Nurses, physicians, physician assistants and other health professionals must learn together, through hands on activities across the trajectory of their education, in order to enter the workforce ready for teamwork. More opportunities for learners to work both with and within communities also increases the likelihood of students entering the workforce with the knowledge, skills and attitudes needed to include patients, families and communities as part of a primary care team.

### **Conclusion:**

Primary care is at an exciting crossroads in the U.S. National health insurance reform promises to dramatically expand coverage while a concurrent primary care shortage has many wondering if the health care workforce and infrastructure will provide enough access to meet the increased demand. Several structural factors at the national level will continue to facilitate primary care innovation.

- Newly passed federal health reform will not only expand access but also permit local and regional experiments at improving quality and the affordability of health care that are acceptable to patients and providers. Multiples areas of the country will be the site of comparative studies, testing different solutions for different populations.
- Professional support as well as public and private funding for “Medical Home” models of care and Accountable Care Organizations will help bring team based approaches to primary care to fruition as systems and providers are rewarded for high quality, coordinated care.
- Leadership from academic medical centers, hospitals, public health, and other entities with high levels of community engagement and visibility need to play a key role in harmonizing new federal policies with local needs. Health disparities in the U.S. are complex and vary considerably by region and community. “One size fits all models” will not adequately address disparities and local innovation is as crucial and federal support.

	Primary Care Innovations:	Enabling Factors	Obstructing Factors
Example #1, Micro Level	<ul style="list-style-type: none"> <li>• Medical Homes</li> <li>• Micro Clinics</li> <li>• School Clinics</li> </ul> <p>(specific locations)</p>	<p><b>Individual:</b> Convenience</p> <p><b>Local:</b> Community support</p> <p><b>National:</b> Support of NCQA, professional associations</p>	<p><b>Individual:</b> Lack of comfort with EMR on patient and professional level</p> <p><b>Local:</b> Lack of connections between community and clinical entities</p> <p><b>National:</b> Lack of reimbursement support</p>
Example #2 Meso Level	<ul style="list-style-type: none"> <li>• Just for Us</li> <li>• Veteran’s Administration</li> <li>• HRSA Disparities Collaborative</li> <li>• PACE</li> </ul> <p>(specific populations)</p>	<p><b>Individual:</b> Primary care tailored to needs of population</p> <p><b>Local:</b> Enthusiasm for sharing best practices</p> <p><b>National:</b> federal funding</p>	<p><b>Individual:</b> concerns for privacy</p> <p><b>Local:</b> lack of connection between community and clinical entities</p> <p><b>National:</b> federal funding!</p>
Example #3 Macro Level	<ul style="list-style-type: none"> <li>• Accountable Care Organizations,</li> <li>• Durham Health Innovations (infrastructure for the broader populations)</li> </ul>	<p><b>Individual:</b> care delivered more holistically</p> <p><b>Local:</b> communities united by common goals</p> <p><b>National:</b> federal funding</p>	<p><b>Individual:</b> concerns for privacy</p> <p><b>Local:</b> lack of connection between community and clinical entities</p> <p><b>National:</b> federal funding!</p>

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# United Kingdom: A Case study

## Interprofessional Team-based Care for Chronic Complex Illness

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### Institutional background

The National Health Service (NHS) in the UK is financed almost entirely from general taxation. Most patients incur no charges for using NHS care. UK primary medical care is organised on a capitation-based model. Patients register with general practices, which act as the first point of contact and gatekeepers for elective hospital care. General Practices are independent contractors, apart from a small minority who are directly run by their local primary care organisation.

The average practice has around 5,200 registered patients and around 25 staff, approximately one-fifth GPs, one-third nurses and allied health professionals, and the remainder administrative staff, including receptionists and practice managers.

Practices are paid under one of two main contracts. The first, General Medical Services (GMS), is a nationally negotiated contract under which they are paid by a mixture of capitation, lump sum allowances, items of service and target incentives. The capitation payments vary with the age of patients and with the deprivation level of the area in which they live. The second, Primary Medical Services (PMS), is negotiated between the practice and their local primary care organisation. PMS practices receive a lump sum in exchange for agreeing to provide the services they would have provided under the GMS contract, plus additional services for particular patient groups. The amount received is typically the amount the practice would have received under GMS, plus an addition intended to cover the cost of the extra services.

Under both contracts, practices have to meet their expenses from their gross income. In 2005/6 PMS GPs earned about 10% more than GMS GPs (NAO, 2008). Morris et al (2010) show that the net incomes of PMS GPs in 2003/4 were greater than GMS GPs by £9000 per GP and, since they do not work longer hours, their wages are also higher (by 11%). Thus, PMS practices seem to have been overcompensated for the additional costs they incur.

### Introduction of a new contract for primary medical care

A new contract was introduced UK-wide from April 2004. This new contract had important implications for team-based care and for the care of individuals with selected chronic illnesses.

The pre-2004 contract was between individual General Practitioners and central government. Most GPs had formed small partnerships. The new contract was between these partnerships (as organisations) and the local Primary Care Organisation (PCO). There were approximately 350 PCOs across the UK in 2004, defined on a geographical basis.

Under the previous contract most General Practitioners received partial reimbursement for employing some types of practice staff. In some cases this reimbursement was 100%, it was generally not lower than 70%. Primary Care Organisations could therefore influence the level and distribution of non-medical staff as well as medical staff. The new contract was no longer intended to provide full or partial retrospective reimbursement for costs but was based largely on weighted capitation and quality payments.

The payment system is blended and contains a substantial (around 25%) pay-for-quality element, over half of which is focused on the management of chronic conditions. The pay-for-quality element, the Quality and Outcomes Framework (QOF), is an elaborate and expensive scheme. Practices are required to report their achievements on approximately 150 quality indicators. The average practice stood to gain around £130,000 in 2005/6 if it achieved all indicators to the maximum extent. Initially, around half of potential QOF revenue was attached to 65 ratio indicators of clinical quality in eleven chronic diseases. These indicators reflect diagnosis, risk factor measurement, treatment (such as prescribing), referral and control of intermediate outcomes. Even if the positive spillovers of quality improvements in non-incentivised areas are taken into account, the level of payment available for each unit of achievement seems high (Sutton et al, 2010).

Thus the new contract created strong financial incentives for primary medical care provider organisations to discover and select an efficient team-based model that meets the pay-for-quality targets at least cost. These strong financial incentives are reinforced by reputational incentives as practice achievements on the QOF are published annually.

#### Impact of the new contract on primary medical care teams

The general trend over the last two decades has been towards larger teams with greater role differentiation among team members. One stimulus for change was the 1990 General Medical Services contract, in which GPs were paid to provide chronic disease clinics and meet population target rates for immunizations, vaccinations and cervical cytology. GPs responded by employing nurses to provide these services. Provider organisations have continued to employ more practice nurses since the introduction of the new contract. Practices could have reduced the employment of nurses, but instead seem to have increased their numbers (Gemmell et al, 2009).

Nurses perform much of the chronic disease management that earns the organisation pay-for-quality payments. Practice nurses have reported taking on work which has previously been the exclusive preserve of medical professionals and that their work is changing to reflect a more medical orientation to service delivery (McDonald et al, 2009). At the same time, nurses have described their work as routine and template driven.

A detailed study in 42 representative practices found no change in the average number of hours worked per week by nursing staff or doctors between 2003 and 2005 (Gemmell et al, 2009). A larger postal survey found that mean reported hours worked by GPs fell from 44.5 hours in 2004 to 40.8 hours in 2005 (Whalley et al, 2008). A recent follow up to this survey found that average hours worked had increased by just over an hour a week by 2008 (Hann et al, 2009).

This latter survey also identified an increase in reported work intensity for GPs. This is consistent with the detailed study of workload by Gemmell et al (2009). The proportion of presenting problems described as chronic or preventative increased for doctors but was unchanged for nursing staff. Nursing staff dealt with more complex visits in 2005 compared to 2003 but there was no change for doctors. Nursing staff took on a higher proportion of the additional clinical workload and doctors seemed to focus more attention on chronic and preventive care. Task delegation from doctors to nursing staff appeared to have increased the hours of work and complexity of work for nursing staff, who took on new responsibilities in addition to pre-existing ones, and for doctors, who were left with a more complex caseload.

A recent study (Griffiths et al, BJGP, 2010) has shown that practices that employ more nurses perform better in a number of clinical domains measured by the Quality and Outcomes Framework. A high level of nurse staffing was significantly associated with better performance in 4 of 8 clinical domains (chronic obstructive pulmonary disease, coronary heart disease, diabetes, and hypertension) and in 4 out of 10 clinical outcome indicators. These authors concluded that there may be real patient benefit associated with using nurses to deliver care to meet QOF targets.

#### What is known about the costs and benefits of team-based care?

Skill mix changes, such as task substitution, have been proposed as one solution to shortages in some elements of the workforce. In addition, the expectation is frequently that nurse-doctor substitution will reduce cost and physician workload while maintaining quality of care.

Members of the primary health care team may work either as 'substitutes' or 'supplements' for general practitioners. They act as substitutes where they reduce cost, increase service capacity, maintain quality and reduce doctor requirements. They act as supplements where they improve both the quality and range of service provision without necessarily reducing doctor requirements or costs.

Several systematic reviews indicate that health care professionals (e.g. pharmacists, nurses) can provide equally effective disease management and/or health promotion in primary care as physicians, but that their introduction rarely reduces cost or doctor requirements.

Dennis et al (2009) systematically reviewed studies for evidence of the effectiveness of task substitution between GPs and pharmacists and GPs and nurses for the care of older people with chronic disease. Based on forty-six articles, they found that task substitution between pharmacists and GPs and nurses and GPs resulted in an improved process of care and patient outcomes, such as improved disease control. The interventions were either health promotion or disease management according to guidelines or use of protocols, or a mixture of both. The results indicate that pharmacists and nurses can effectively provide disease management and/or health promotion for older people with chronic disease in primary care. However, while there were improvements in patient outcomes, no reductions in health service use were evident.

Laurant et al (2005) systematically evaluated the impact of doctor-nurse substitution in primary care on patient outcomes, processes of care, and costs. The authors located only four studies that met their inclusion criteria and considered the case where nurses took responsibility for the ongoing management of patients with particular chronic conditions. There was little consistency in the outcomes

investigated, methodological limitations in most studies and lack of statistical power. No appreciable differences were found between doctors and nurses in health outcomes for patients, care processes, and costs. The potential for savings in cost depend on the magnitude of salary differentials between doctors and nurses, and these may have been offset by the lower productivity of nurses compared to doctors.

### Concluding remarks

Systematic reviews of the research literature on primary medical care teams highlight that skill mix changes need to be organised so that health professionals' roles are complementary. Otherwise they may simply duplicate the task performed by other health professionals. They also highlight that doctor requirements may remain unchanged either because nurses are deployed to meet previously unmet patient needs or demands for new forms of care. There is no evidence that team-based care reduces costs.

Given the lack of evidence base, it may be sensible that the UK payment system for primary medical care providers does not seek to specify the most efficient production function. Providers are rewarded to a significant degree for their outputs, not reimbursed for the costs of their inputs. Thus, the new set of financial incentives for primary care providers in the UK provides a powerful financial and reputational incentive for organisations to find the right team composition and size. Some recent evidence suggests that primary medical care providers have preferred to employ additional nurses rather than additional doctors and that this is associated with better quality of care.

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