General Practice Services Committee

GPSC Literature Review

What are the characteristics of an effective primary health care system for the future?

Question 2:

How do we best implement team-based care and the patient medical home?

Prepared for the GPSC Workplan & Budget Working Group

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Medical Home Overview

Definition

- Patient Centred Medical Homes (PCMH) were first introduced by the American Academy of Pediatrics in 1967. The PCMH model was an extension of the Chronic Care Model: the Chronic Care Model was developed to address the increasing rate of patients with chronic conditions using team-based care (Green, Wendland, Carver, Hughes Rinker, & Mun, 2012). Since its inception, various definitions of a PCMH have been developed:

  The Agency for Healthcare Research and Quality describes a PCMH as "a model structure for primary health care that is patient-centered, comprehensive, and coordinated, with accessible services and a commitment to quality and safety; the goals of improved care quality, patient experience, and reduced healthcare costs" (Fontaine et al., 2014, pg.1)

  The National Committee for Quality Assurance describes a PCMH as "a health care setting that facilitates partnerships between individual patients and their personal physicians, and when appropriate, the patient's family. Care is facilitated by registries, information technology, health information exchange, and other means to assure that patients get the indicated care when and where they need and want it in a culturally and linguistically appropriate manner" (Mitka, 2012, pg. 770)

  American College of Physicians describes a PCMH as "a team-based model of care led by a personal physician who provides continuous and coordinated care throughout a patient's lifetime to maximize health outcomes. The PCMH practice is responsible for providing for all of a patient's health care needs or appropriately arranging care with other qualified professionals. This includes the provision of preventive services, treatment of acute and chronic illness, and assistance with end-of-life issues. It is a model of practice in which a team of health professionals, coordinated by a personal physician, works collaboratively to provide high levels of care, access and communication, care coordination and integration, and care quality and safety" (Primary Care Progress, 2014).

The College of Family Physicians of Canada defines a Canadian medical home as:

"a medical office or clinic where each patient would have: her or his own family doctor; other health professionals working together as a team with the patient's own family doctor; timely appointments for all visits with the family doctor and with other primary care team members; arrangement and coordination of all other medical services, including referrals to consulting specialists; an electronic medical record; and ongoing evaluation and quality improvement programs" (College of Family Physicians of Canada, [CFPC], 2009, pg.7)

The College of Family Physicians of Canada further outline the system supports that are required for the medical home, including (CFPC, 2009):

- Sufficient health human resources;
- Adequate funding and clearly defined liability protection for all team members;
- System support for electronic health record systems;
- Agreements from each health care profession about the clinical, and organizational roles and responsibilities for all team members, and;
- Establishment of links/networks with other health professionals and hospitals in the community.

The patient medical home aims to ensure that:

1. Every person in Canada will have the opportunity to be part of a family practice that serves as a patient medical home for themselves and their families;
2. The patient medical home will produce the best possible health outcomes for the patients, the practice populations, and the communities they serve; and
3. The patient medical home will reinforce the importance of the Four Principles of Family Medicine for both family physicians and their patients.

The goals of the medical home state that the patient's medical home will (CPFC, 2009):

1. ??Be patient centred;
2. Ensure that every patient has a personal family physician who will be the most responsible provider of his or her medical care;
3. Offer its patients a broad scope of services carried out by teams or networks of providers, including each patient's personal family physician working together with peer physicians, nurses, and others;
4. Ensure i) timely access to appointments in the practice and ii) advocacy for and coordination of timely appointments with other health and medical services needed outside the practice;
5. Provide each of its patients with a comprehensive scope of family practice services that also meets population and public health needs;
6. Provide continuity of care, relationships, and information for its patients.
7. Maintain electronic medical records for its patients;
8. Serve as ideal sites for training medical students, family medicine residents, and those in other health professions, as well as for carrying out family practice and primary care research;
9. Carry out ongoing evaluation of the effectiveness of its services as part of its commitment to continuous quality improvement; and
10. Be strongly supported i) internally, through governance and management structures defined by each practice and ii) externally by all stakeholders, including governments, the public, and other medical and health professions and their organizations across Canada.

- In 2007, the Statement of Joint Principles were established by the **Patient-Centered Primary Care Collaborative** to describe the PCMH:
  - The Patient-Centred Primary Care Collaborative is a group of large organizations, primary care societies, national health plans, patient groups, and others who support the PCMH concept, including by the American Academy of Family Physicians, American Academy of Pediatrics, American College of Physicians, and the American Osteopathic Association (Backer, 2009; Janamian, Jackson, Glasson, & Nicholson, 2014)
  - They were further endorsed by various other organizations and associations (e.g. American Medical Association) (Backer, 2009). However, many others found the principles to be physician-centric (Manion, 2012).
  - The Joint Principles emphasize patients' ongoing relationship with a personal physician; team approaches to care; a whole-person orientation; mechanisms to support care integration, quality, safety and access; and payment for added value.

The Joint Principles for Patient-Centred Medical Homes

(1) Access to a personal physician: each patient has an ongoing relationship with a personal physician. The personal physician provides first contact, continuous, and comprehensive care.

(2) Physician-directed medical practice: the personal physician leads a team of individuals who collectively take responsibility for the ongoing care of patients.

(3) Whole-person orientation: the personal physician is responsible for providing for all the patient's healthcare needs and for appropriately arranging care with other qualified professionals. The personal physician is responsible for providing care throughout all stages of life, as well as for acute care, chronic care, preventive services, and end of life care.

(4) Care coordination and/or integration: the PCMH will provide continuous and comprehensive care across all elements of the complex health care system and within the patient's community. In PCMH, coordinated care is supported by patient registries, information technology, health information exchange, use of interpreters, etc.

(5) Quality and safety benchmarking: quality and safety are key factors in the PCMH. Specific activities related to quality and safety could include individualized care plans, evidence-based decision support tools, collection and reporting of quality improvement data, use of information technology.

(6) Enhanced care availability: enhanced care is available through systems such as open access scheduling, expanded hours, and new options for communication.

(7) Practice payment reform: payment is derived from a blended funding model that combines capitation, fees for services, and bonuses. Reimbursement strategy provides incentives for patient-centered care as well as population-oriented preventive care.

(Carney et al., 2009; Crabtree et al., 2010; Green et al., 2012; Janamian et al., 2014; Kirschner & Barr, 2010; Meyer, 2010; Rosser, Colwill, Kasperski, & Wilson, 2011)

- **The Agency for Healthcare Research and Quality** describes five functions and attributes of the PCMH. These attributes are similar to the Joint Principles described by the Patient-Centred Primary Care Collaboration. They five functions and attributes include (Agency for Healthcare Research and Quality, [AHRQ], n.d.; Nielsen, Olayiwola, Grundy, Grumbach, & Shaljian, 2014; Wexler, Hefner, Welker, & McAlearney, 2014):

    1. **Comprehensive Care**: continuous and comprehensive care is provided by teams who are collectively responsible for delivering care. PCMH team members may include physicians, advanced practice nurses, physician assistants, nurses, pharmacists, nutritionists, social workers, educators, care coordinators, etc.
    2. **Patient-Centered**: patient-centred care is when providers understand and respect each patient's unique needs, culture, values, and preferences. Practices that deliver patient-centred care engage patients as partners in their care (e.g. in establishing care plans).
    3. **Coordinated Care**: a team of care providers coordinates care across all elements of the broader health care system, including specialty care, hospitals, home health care, and community services and supports. Particularly critical during transitions between sites of care.
    4. **Accessible Services**: delivers accessible services with shorter waiting times for urgent needs, enhanced in-person hours, around-the-clock telephone or electronic access to a member of the care team, and alternative methods of communication, such as email and telephone care.
    5. **Quality and Safety**: demonstrates a commitment to quality and quality improvement by:
        - Using evidence-based medicine and clinical decision-support tools to guide shared decision making with patients and families;
        - Engaging in performance measurement and improvement;
        - Measuring and responding to patient experiences and patient satisfaction; and
        - Practicing population health management.

- Additional functions and attributes include: access and communication processes; patient tracking and registry functions; care management guidelines; patient self-management support; diagnostic test tracking; referral tracking; performance reporting and improvement; advanced electronic communications; payment reform; etc. (Primary Care Progress, 2014)

Additional Messages About The Patient-Centred Medical Home:

- The PCMH model is a systematic approach to coordinating and integrating primary health care services that ensures optimal value and health outcomes (Bidassie, Davies, Stark, & Boushon, 2014).
- The PCMH is described by the seven Joint Principles identified by the Patient-Centred Primary Care Collaborative; all of the seven principles are highly interdependent (Nutting et al., 2009).
- The PCMH is made up of four "pillars": practice organization; health information technology; quality measures; and patient experience (Markova, Mateo, & Roth, 2012).
- The PCMH emphasizes care that is (Grant & Greene, 2012; Martin, 2014; Tuepker et al., 2014):

- Highly accessible, quality and safe;
- Continuous, comprehensive, coordinated, compassionate;
- Patient and family centered, and culturally and linguistically appropriate;
- Team-based; and
- Data-informed

- The PCMH improves access to care; incorporates electronic health records; facilitates access to specialty care, integration of specialty care services (e.g., mental health and oral health care in the primary care setting), transportation and case management to enhance care coordination (Grant & Greene, 2012).

- PCMH studies continue to demonstrate impressive improvements across a broad range of categories, including: cost; utilization; population health; prevention; access to care; and patient satisfaction. A gap still exists in reporting impact on clinician satisfaction (Nielsen et al., 2014).

- The PCMH model holds a great deal of potential in addressing the broken healthcare system, but at the same time, it also faces many obstacles in terms of payment reform, professional support, and patient participation (Green et al., 2012).
- Main concerns about the PCMH model include: possible unrealistic expectations; the potential inability of small practices to successfully implement the model; and the problem of obtaining adequate physician reimbursement (Kirschner & Barr, 2010).

- Resources for PCMH include (Schram, 2012):
  - Agency for Healthcare Research and Quality Patient Centered Medical Home Resource Center
  - National Committee for Quality Assurance Patient- Centered Medical Home
  - National Committee for Quality Assurance Recognition Training PCMH
  - American Academy of Family Physician Medical Home Legislation by State
  - The Joint Commission Patient Centered Medical Home Self-Assessment Tool
  - Utilization Review Accreditation Commission Patient Centered Health Care Home Program

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Recognition and Accreditation Programs

- Recognition and accreditation programs provide a useful roadmap for quality improvement and practice transformation (Nielsen et al., 2014).
- There are various US-based organizations that focus on PCMH certification and accreditation:

The National Committee for Quality Assurance

The National Committee for Quality Assurance has a three-tiered recognition process that is to be accomplished over a 3-year time period. To achieve recognition, PCMH must meet the

requirements that are categorized under nine standards (Backer, 2009; Fifield et al., 2013; Kirschner & Barr, 2010; Nielsen et al., 2014):

(1) Access and communication
(2) Patient tracking and registry functions
(3) Care management
(4) Patient self-management support
(5) Electronic prescribing
(6) Test tracking
(7) Referral tracking
(8) Performance reporting and improvement
(9) Advanced electronic communications

Other recognition and accreditation bodies include: Accreditation Association for Ambulatory Health Care, The Joint Commission, and URAC (formerly the Utilization Review Accreditation Commission).

- In addition to these national programs, states (e.g. Minnesota Departments of Health and Human Services, and several commercial health plans (e.g. Blue Cross Blue Shield Michigan) have developed their own standards (Nielsen et al., 2014).
- The specific elements, processes, administrative burden, and costs for undergoing recognition differ significantly across programs (Nielsen et al., 2014).

- These recognition and accreditation processes do not offer instructions on *how* to transition to a patient-centred medical home. This is due to the fact that each practice is unique and therefore requires personalized implementation plans. Consequently, each practice must create their own implementation plan that adheres to the PCMH principles (Green et al., 2012).

Examples of Medical Homes

- There are many different variations of the PCMH across the US and Canada. Some examples of the different models are:

    - The National Committee for Quality Assurance (NCQA)
    - The Commonwealth Fund
    - Veterans Health Administration - Patient Aligned Care Teams
    - Geisinger Health System – ProvenHealth Navigator (PHN)

Implementation

> **"PCMH demonstration projects suggest organizational and individual readiness for change are often overestimated, that the magnitude and time frame for PCMH changes are often underestimated, and that many are seriously undercapitalized" (Quinn et al., 2013, pg. 358)**

- Specific implementation plans and/or guides for transforming into a patient-centred medical home have not been identified due to the need to consider local needs, preferences, culture, infrastructure, etc. (Quinn et al., 2013; Wagner et al., 2012).
- Therefore, the practices wishing to transform to a PCMH must develop a coherent implementation strategy that includes ways to ensure practices are capable of making and sustaining change and able to prioritize the order in which components are adopted (Crabtree et al., 2010).

- Stout & Weeg (2014) identified various approaches for successful implementation and sustainment of the patient-centred medical home (Stout & Weeg, 2014):

    - Harness the power of meaning;
    - Approach PCMH implementation as a large-scale cultural transformation;
    - Engage frontline staff and patients in the change process;
    - Encourage staff to participate in creating a vision for the transformation effort;
    - Develop leadership's capacity to manage and support the change process; and
    - Consider sustainability from the beginning.

- The Patient-Centred Primary Care Collaborative identified five factors that contribute towards the successfully implementing the PCMH (Patient-Centred Primary Care Collaborative, [PCPCC], 2014):

    1. An effective leadership team to oversee the change from start to finish; the leadership team will be comprised of a physician champion, a practice administrator, as well as both clinical and clerical leads.
    2. Staff engagement and empowerment leads to active, engaged and creative members of the change management team.
    3. Integration and management of change takes constant and active monitoring, building on what is working well, changing and modifying what is not working well.
    4. Agree on and establish a common framework of measuring the impact of the transformation.
    5. Actively solicit honest feedback to learn about how things are progressing.

Core Elements for Practice Implementation to a Patient-Centred Medical Home

1. Transformative Change: leadership support; **engaged leadership**
2. Quality Improvement: **quality improvement strategy**
3. **Empanelment**: linking patients to specific providers
4. Continuous and **Team-Based Care**: interdisciplinary teams
5. Practice Redesign: **organized evidence-based care, enhanced access, care coordination, patient-centred care**
6. **Payment Reform**: new reimbursement models
7. **Health Information Technology**: electronic health records, electronic medical records

(Coleman et al., 2014; Fontaine et al., 2014; Grant & Greene, 2012; Quinn et al., 2013; Rosser et al., 2011; Wagner, Gupta, & Coleman, 2014)

- Wagner et al. (2012) identified eight change concepts that should be viewed as *general guidance* for transforming to a patient-centred medical home. Wagner et al. (2012) further linked to the Chronic Care Model (CCM), one of the models in which the PCMH model was derived from. The eight change concepts include:

  Engaged (and active) leadership (CCM element = health care organization): visible leadership (clinical, administrative, and clerical) that can help staff envision a better organization and improved care, establish a quality improvement apparatus and culture, and ensure that staff have the time and training to work on system change.

  Quality improvement strategy (CCM element = health care organization and information system): an effective QI strategy relies on routine performance measurement to identify opportunities for improvement and uses rapid-cycle change methods to test ideas for change.

  Empanelment (CCM element – information system and proactive care): a process to link each patient or family with a specific provider; facilitates continuity of relationship; allows practice teams to monitor their panel to identify and reach out to patients needing more attention and services

  Continuous and team-based healing relationships (CCM element = practice redesign – team care): physician-led interdisciplinary teams are collectively responsible for the care of the patient; each member of the team function to their full practice scope.

  Organized, evidence-based care (CCM element = practice redesign – planned care, decision support, and information systems): using information system tools like registries enables practices to identify gaps in care for patients before they visit, so practice teams can plan and organize care to ensure all patient needs are met; decision support systems improve care by alerting providers when services are needed and helping them make evidence-based choices.

Patient-centred interactions (CCM element = activate patients and self-management support): patient-centered practices endeavor to increase their patients' involvement in decision- making, care, and self-management.

Enhances access: enhanced access is a key component of the PCMH; this can be achieved by providing care during and after office hours.

Care coordination (CCM element = community resources, practice redesign – care management): effective care coordination involves helping patients find and access high-quality service providers, ensuring that appropriate information flows between the PCMH and the outside providers, and tracking and supporting patients through the process.

- These eight change concepts were subsequently translated into three steps that practices can apply when transforming to a patient-centred medical homes (Wagner et al., 2014):

    (1) Lay the foundation: **engage leadership,** develop a **quality improvement strategy**
    (2) Build Relationships: establish **empanelment**, foster **continuous and team-based healing relationships**
    (3) Change Care Delivery: **organize evidence-based care**, create **patient-centered** interactions
    (4) Reduce Barriers to Change: **enhance access**, **care coordination**

- To support the successful implementation of the PCMH, practices must undergo substantial practice restructuring that requires additional investment / resources to cover the initial and ongoing costs (Fontaine et al., 2014; Homer & Baron, 2010; Kirschner & Barr 2010; Tuepker et al., 2014).

- In addition to additional investment / resources, practices also requires substantial amount of time to implement the PCMH. To date, many of the pilot / demonstration projects have sought to establish PCMH within a 2-3 year timeline; evidence now shows that it will take much more time then this to transform into a PCMH (Crabtree et al., 2010).

- One challenge is paying attention to implementing components while also ensuring that patients' experiences are not negatively affected (Crabtree et al., 2010).

Transformation and Change

- The transformation to a patient-centred medical home requires significant paradigm shifts in infrastructure, culture, and practice to support the change process (Fontaine et al., 2014; Wagner et al., 2014). For example, for practices to successfully transform into a PCMH, they must consider the following shifts in mental models (Crabtree et al., 2010; Nutting, Crabtree & McDaniel, 2012):

    1. Physician centric model of care to team-based care that respects all disciplines as equal members of the team.

2. Authoritative / authoritarian leadership to facilitative leadership that mobilizes and empowers all staff.
3. Episodic care of 1 patient to proactive, population-based care that considers the health of a defined population/community.
4. Physician-centred care to patient-centred care where the patient is a key partner in their care.
5. Fee for service to blended payment model that rewards based on proactive prevention and population-based care.

Initial Lessons from the National Demonstration Project

The National Demonstration Project for patient-centred medical homes was launched in 2006 by the American Academy of Family Physicians (Nutting et al., 2009). Initial lessons learned from the National Demonstration Project are as follows:

1. Becoming a PCMH requires transformation
2. Technology needed for the PCMH is not plug and play
3. Transformation to the PCMH requires personal transformation of physicians
4. Change fatigue Is a serious concern even within capable and highly motivated practices
5. Transformation to a PCMH Is a developmental process
6. Transformation is a local process

- Transformation implies a radical change. Therefore, transformation to a PCMH requires more than just a sequence of discrete, incremental structural and process changes that could be checked off a list (CFPC, 2009; Crabtree et al., 2010). It requires an iterative, developmental, and continuous process (Cronholm et al., 2013; Nutting et al., 2009; Nutting et al., 2010).

- Successful transformation to a PCMH requires long term and tangible commitment to transformational change that focuses on leadership, teamwork, high-quality communication, staff development, and ongoing support for a culture of change (Janamian et al., 2014). More specifically, key elements that are critical to the change and transformation process include (Bleser et al., 2014; Crabtree et al., 2010; Cronholm et al., 2013; Fontaine et al., 2014; Green et al., 2012; Highsmith & Berenson, 2011; Homer & Baron, 2010; Janamian et al., 2014; Long, Dann, Wolff, & Brienza, 2014; Nutting et al., 2009; Nutting et al., 2010; Tuepker et al., 2014; Wagner et al., 2014):

    - Organizational commitment and approach to process change and transformation;

- Share values, vision, and goals for change process;
- Culture of change, including external and internal motivators for change:
  - **Internal motivations:** derive from anticipated enhancements in patient, provider, and staff satisfaction with care.
  - **External motivations:** derive from efforts that can make a practice's transformation financially viable.
- Strong desire to change;
- Buy-in at all levels of the organization, including physician buy-in;
- Committed, engaged, and active leadership that has a systems perspective, can envision change, and is an expert in (or at least receptive to) change management;
- A supportive organizational culture;
- A high degree of support, motivation, communication (e.g. communication plan);
- Considerable time and resources (financial and human);
- A strong core (e.g. material and human resources, organizational structure, clinical process);
- Early involvement of staff, patients and families;
- **Adaptive reserve** (healthy relationship infrastructure, aligned management model, and facilitative leadership);
- Shifts in roles and **mental models** of members of the practice team:
  - Mental models are the internal representations that result from one's perception of the external culture and individual experience (Cronholm et al., 2013);
- Outside expert and facilitative assistance to support the transformation process;
- Continuous quality improvement;
- Health information technology; and,
- Attention to the local environment.

Key Barriers to the Transformation Process

Transformation efforts were slowed or ceased by (Fontaine et al., 2014; Janamian et al., 2014; Quinn et al., 2013; Tuepker et al., 2014; Wagner et al., 2014):

- Top-down approach without clinical buy-in
- Ineffective change management processes
- Lack of leadership needed to guide the practice through the change
- Lack of an infrastructure and culture to support change
- Lack of readiness for change or change fatigue
- Lack of communication and trust
- Unresponsive management

- Staff skepticism and/or resistance to change (e.g. new roles, work flow)

- Engaged leadership is one of the most important contributing factor towards the successful transformation to a patient-centred medical home (Fontaine et al., 2014; Wagner et al., 2014). The "engaged" descriptor indicates that leaders not only need to make the transformation an organizational priority, but they must also visibly drive change themselves, promote a supportive culture, secure resources (financial, and human), build internal capacity, and help staff address barriers (Wagner et al., 2012; Wagner et al., 2014).

- It is therefore important that effective leaders have knowledge and skills in three important domains (Wagner et al., 2014):
    (1) **Systems thinking**, or the capacity to understand the practice as a series of interrelated processes that determine performance;
    (2) **Envisioning change**, or recognizing the gap between current and optimal practice and promising changes to close the gap; and
    (3) **Change management**, or implementing proven strategies for quality improvement and engaging staff in the process.

- It has been recommended that additional support and resources be provided to drive the transformation to a patient-centred medical home. For example addition resources are required to help practices develop their adaptive reserve, hire additional staff, and implement electronic health record system (Coleman et al., 2014; Crabtree et al., 2010; Cronholm et al., 2013; Nielsen et al., 2014).

- External experts, such as practice facilitator, coaches, medical home facilitators, QI experts, change management consultants, etc. may also help support the transformation process (Coleman et al., 2014; Homer & Baron, 2010). **Practice facilitators** are health care professionals who work with practice staff over a sustained period of time to help initiate, implement, and sustain redesign activities. Applying their expertise in change management, quality improvement, including plan- do-study-act cycles, and health information technology, practice facilitators assess a practice's needs and its capacity to reorganize and restructure (Highsmith & Berenson, 2011). In particular they can enhance adaptive reserve, facilitate implementation of new primary care practice models, improve quality and appropriateness of care, and reduce costs. They also can help with advanced-access scheduling, group medical visits, self-management education, and team-based care. Frequent in-person contact between practice facilitators and staff helps to build the relationships required to sustain change (Highsmith & Berenson, 2011).

- Involvement of staff, patients and families is also an essential factor in the transformation process (Fontaine et al., 2014; Homer & Baron, 2010; Kirschner & Barr, 2010). For example, early involvement of all staff in the planning and transformation process may reduce some resistance to change (Quinn et al., 2013). Patient engagement may lead to an enhanced understanding of

the patient-centred medical model, which may result in increased acceptance of this model (Backer, 2009).

Adaptive Reserve

Promoting adaptive reserve, local control of the developmental pathway, and ownership of the process is critical for the practice transformation process (Crabtree et al., 2010; Homer & Baron, 2010; Nutting et al., 2010).

> **Adaptive reserve** is defined as the practice's capacity for organizational learning and development. It seems to be a function of unified leadership that can envision a future, facilitate staff involvement in a strategy for getting there, and devote time to plan, make and evaluate changes (Wagner et al., 2014). Adaptive reserve includes a healthy relationship infrastructure, an aligned management model, and facilitative leadership.
>
> Adaptive reserve is the practice's most precious resources during the transformation process and therefore the practice's adaptive reserve should be assessed and steps to support and strengthen it should be identified and implemented (Crabtree et al., 2010; Nutting et al., 2010).
>
> Janamian et al. found that practices without adaptive reserve, that is the capacity for organizational learning and development, were more likely to experience "change fatigue" and less likely to successfully implement the PCMH model (Janamian et al., 2014).
>
> **Aligned management model** is when clinical care, practice operations, and financial functions share and reflect a consistent vision (Nutting et al., 2010).
>
> **Facilitative leadership** entails establishing and articulating a vision, building the relationships required to accomplish it, and allocating and prioritizing resources to enable it (Homer & Baron, 2010).
>
> **Adaptive capacity** is the ability of a practice to undertake rapid and ongoing change (Homer & Baron, 2010).

- For the PCMH model to be integrated into the larger and complex health care system, changes cannot be made just in the primary care model, but must also be made in specialty care models and hospitals (Crabtree et al., 2010)

Practice Redesign

- Transforming primary care practices into patient-centred medical homes will require substantial changes in workflow (Patel et al., 2013).

Organized, Evidence-Based Care

- To routinely deliver organized evidence-based care, PCMH should (Wagner et al., 2012; Wagner et al., 2014):

    - Use planned care according to patient need
    - Identify high-risk patients and ensure they are receiving appropriate care and case management services
    - Use point-of-care reminders based on clinical guidelines
    - Enable planned interactions with patients by making up-to-date information available to providers and the care team before the visit

Enhanced Access

- Accessibility is defined as the ability to receive medical care whenever one needs it. It is a defining element of primary care (Wagner et al., 2012).

- To support enhanced access, a PCMH should (CFPC, 2011; Wagner et al., 2014):
    - Promote and expand access by ensuring that patients have 24/7/365 continuous access to their care teams via phone, e-mail, or in-person visits;
    - Provide scheduling options that are patient and family-centered and accessible to all patients;
    - Make an appointment with another physician, nurse, or other qualified health professional member of the PCMH when the patient's personal family physician is unavailable.

Strategies to Enhance Access

1. Advanced access or "open" scheduling that permits same day appointments.
2. Expanded hours, including before and after the normal workday, through evening and weekend walk-in clinics, after hours on-call system, etc.
3. Innovative communication methods that support enhanced access, such as e-health, telehealth, secure e-mail, and interactive websites.

(CFPC, 2011; Janamian et al., 2014; Martin, 2014; Meyer, 2010; Rosser et al., 2011)

- Evidence suggest that increasing panel size may then in turn impact the accessibility of services; therefore, patient-centred medical homes are cautioned to assess multiple factors to determine the appropriate panel size, including the number of physicians and other team members in the practice, the practice's obligations and commitment to teaching and research, and the demographics of the patient population being served (e.g. the age of the patients and the complexity of their medical problems) (CFPC, 2011).

Coordination and/or Integration of Care

- A main principle for the PCMH is to provide care coordination and/or integration across the health care system and the patient's community. To support these activities, the PCMH operates as the central hub for all patient information and care coordination (Kirschner & Barr, 2010).

The **Commonwealth Fund** describes care coordination as:

"… a patient and family-centered, assessment driven, team-based activity designed to meet the needs of patients ... Care coordination addresses interrelated medical, social, developmental, behavioral, educational and financial needs in order to achieve optimal health and wellness outcomes" (McAllister et al., 2009, pg. 495)

- To better coordinate and/or integrate care, the patient-centred medical should (Green et al., 2012; Kirschner & Barr, 2010; Meyers, 2010; Wagner et al., 2012; Wagner et al., 2014):
    - Appropriately train clinicians and staff for team-based models of care coordination
        - It is critical to understand the appropriate health professional skill required for this activity, and the training and requisite support (Homer & Baron, 2010)
    - Integrate health information systems that support care coordination (e.g. patient registries, health information exchange options)
    - Establish care managers or care coordinator positions within the PCMH
    - Integrate behavioral health and specialty care into care delivery through co-location or referral agreements
    - Incorporate payment models that compensate for the effort devoted to care coordination
    - Track and support patients when they obtain services outside the practice
    - Follow up with patients within a few days of an emergency room visit or hospital discharge
    - Link patients with community resources to facilitate referrals and respond to social service needs

- For the success of the PCMH, it is important to maintain productive relationships with the community and its resources, and with the medical neighborhood of specialists, hospitals, plans and agencies (Homer & Baron, 2010).

- Additional resources there are required to support care coordination and/or integration within the patient-centred medical home (Meyers, 2010).

Patient-Centred Care

- Patient-centred care is a key principle of the patient-centred medical home. The PCMH places a high priority on patient involvement and recognition of patient needs and preferences, and includes patients in their own care (Kirschner & Barr, 2010; McAllister et al., 2009).

- There are various definitions of patient-centred care.

Patient-centred care is "the experience (to the extent the informed, individual patient desires it) of transparency, individualization, recognition, respect, dignity, and choice in all matters, without exception, related to one's person, circumstances, and relationships in health care" (Berwick, 2009, pg. 560).

The Institute of Medicine defines patient-centred care as care that is respectful of and responsive to the preferences, needs, and values of an individual patient. It ensures that patient values guide all clinical decisions (CFPC, 2014).

- Three useful maxims for patient-centred care (Berwick, 2009):

  (1) "The needs of the patient come first"
  (2) "Nothing about me without me"
  (3) "Every patient is the only patient"

Five Key Changes to Facilitate Patient-Centered Interactions

1. Respect patient and family values and expressed needs
2. Encourage patients to expand their role in decision-making, health-related behaviours, and self-management
3. Communicate with patients in a culturally appropriate manner, in a language and at a level that the patient understands
4. Provide self-management support at every visit through goal setting and action planning
5. Obtain feedback from patients/families about their health care experience and use this information for quality improvement

(Wagner et al., 2012; Wagner et al., 2014)

- Patient-centred care builds relationships between providers and patients that meet all of a patient's needs and treat the patient with dignity and respect by including them in the decision making process (Primary Care Progress, 2014).
- Patient-centered care involves patients in decisions about their care and in the process of care to ensure that it is consistent with the patient's preferences, values, and culture (Wagner et al., 2014).

- In accordance with patient-centred care principles, it is important to ensure that patients understand the purpose and vision for the PCMH (Backer, 2009; Green et al., 2012).
- A key strategy to support the delivery of patient-centred care is to involve patients and families in the beginning of the transformation process (Fontaine et al., 2014; Homer & Baron, 2010; Kirschner & Barr, 2010). This can be achieved through surveys, focus groups, patient advisory

groups, or by including a patient representative on other practice committees (McAllister et al., 2009).

- Patient-centred care is also associated with other key elements of the PCMH. For example, effective interdisciplinary primary care team approaches are a critical component of advancing patient-centered care (Rodriguez et al., 2014). Patient-centered care is a quality dimension (Berwick, 2009).

- Note: Scholle et al. (2010) provides a further description on how the patient-centred medical homes can become more patient-centred from the "consumer" perspective (Scholle et al., 2010).

Empanelment

- Empanelment (patient rostering or paneling) is the act of assigning individual patients to individual primary care providers and care teams with sensitivity to patient and family preference (California Association of Public Hospitals and Health Systems, [CAPH], 2014). It is formalized linkage and long-term, ongoing relationship between a patient and his/her primary care provider based on a mutual commitment. Empanelment is a foundational building block of the PCMH (Health Quality Council of Alberta, [HQCA], 2014).
- Empanelment must be an *early change* on the journey to becoming a patient-centred medical home as other key features, such as continuous, team-based healing relationships, enhanced access, population-based care, and continuity of care, depend on its existence (CAPH, 2014; Wagner et al., 2012). In fact, practices that created patient panels found that it paved the way for other PCMH changes (Wagner et al., 2014).

- Rostering can enable the practice to more readily define its panel size (CFPC, 2011; CFPC, 2012a; CFPC, 2012b). Panel size is the number of individual patients under the care of a specific provider or the number of patients that can be accepted and registered with each practice. PCMH are cautioned to assess multiple factors to determine the appropriate panel size, including the number of physicians and other team members in the practice, the practice's obligations and commitment to teaching and research, and the demographics of the patient population being served (e.g. the age of the patients and the complexity of their medical problems) (CFPC, 2011). As such, the actual panel size for each practice will vary depending (CFPC, 2011).

- A key benefit to the team-based approach to care within the PCMH, is that some of the activities that were once completed by the physician can be assigned to other members of the team, including the nurse practitioner and/or physician assistant; this may enable many PCMH to consider increasing their panel sizes (CFPC, 2011).

- To achieve successful patient panels, patient-centred medical homes should (Wagner et al., 2012; Wagner et al., 2014):

    - Assess practice supply and demand, and balance patient load accordingly
    - Assign all patients to a provider panel and confirm assignments with providers and patients

- Review and update panel assignments on a regular basis
- Use panel data and registries to proactively contact and track patients according to disease status, risk status, self-management status, and community and family needs

- The decision to form a patient–provider relationship should have input from both the patient and the practice (Wagner et al., 2012).
- Patient panels and information systems with registry functionality enable staff to identify and reach out to patients with unmet needs (Wagner et al., 2014).

- One of the concerns regarding patient-to-physician rostering is that if/when a physician decide to leave the PCMH, the patient may lose access to the team in which they were receiving comprehensive care from (The Conference of Canada, 2013).

Team-Based Healing Relationships

- A main facet of the PCMH is the transformation from physician-centric to team-based care, where the team collectively takes responsibility for the ongoing care of patients (Markova et al., 2012; Rosser et al., 2011). In fact, many studies concluded that well-functioning teams were perceived as key to successful implementation of the PCMH (Bleser et al., 2014; Tuepker et al., 2014; Rodriguez et al., 2014; Wagner et al., 2014).
- Team-based care is essential for establishing continuous, team-based healing relationships. To provide continuous team-based healing relationships, effective PCMH should (Wagner et al., 2012; Wagner et al., 2014):

    - Establish and provide organizational support for care delivery teams that are accountable for the patient population/panel
    - Link patients to a provider and care team so both patients and provider/care teams recognize each other as partners in care
    - Assure that patients are able to see their provider or care team whenever possible
    - Define roles and distribute tasks among care team members to reflect the skills, abilities, and credentials of team members

- Evidence suggest that to support the development of effective, high functioning teams, that roles and identities need to change if a practice is to get beyond incremental change and actually transform (Crabtree et al., 2010). However, there are significant challenges related to role expansion that may hinder team development, including the cultural trappings of traditional, clinician-centric power and reimbursement structures, issues related to gender and class, frustration with increased responsibilities, resentment of other team members' roles, and fear of losing control (Cronholm et al., 2013). To accomplish and sustain organizational culture change, all team members need to be empowered to speak freely and initiate a process of improvement (Markova et al., 2012). Therefore, it is important to consider existing power structures and how they can support or impede the development of effective, healthy teams (Cronholm et al., 2013).

- To establish a well-functioning team, it is essential there be adequate staffing. Therefore, it is critical that additional staffing be hired to implement the patient-centred medical home (Patel, 2003; Tuepker et al., 2014). There are various formulas used to identify the amount of additional staff required per physician FTE however, the exact mix of new personnel will vary by each individual practice (Patel et al., 2013).
- There isn't specific evidence on the optimal team ratio, the efficiencies of the allied health professionals, the team composition's effect on panel size, and what the team's skill mix should look like, as much depends on the panel and its needs (CFPC, 2011).
- Research shows that if the PCMH does account for a larger portion of primary care in the future, its average panel sizes will become a key issue in assessing future workforce adequacy (Auerbach et al., 2013).

Inadequate staffing posed an insurmountable barrier to solid team function (Tuepker et al., 2014)

- The goal of team-based care is to have *every* member of a practice team working "at the top of their license" by providing all the care their license or certification allows (Wagner et al., 2014). Therefore, team-based care begins with defining the critical roles and tasks involved in the PCMH, assigning them to the most appropriate members of the team, and ensuring the team members are appropriately trained to perform them well (Wagner et al., 2012).

- In a traditional PCMH, the primary care provider is responsible for leading the team. In the Statement of Joint Principles for Patient-Centred Medical Homes developed by the Patient Centred Primary Care Collaborative identifies the physician at the leader of the healthcare team (Glazier & Redelmeier, 2013; Janamian et al., 2014, Meyer, 2010; Rosser et al., 2011).
- However, others would argue that in order to truly be patient-centred, the care team would not necessarily be "physician-led"; rather, the choice of leadership by a physician, nurse practitioner, or other clinician should belong to the patient and family (Scholle, Torda, Peikes, Han, & Genevro, 2010).

The College of Family Physicians of Canada includes the personal family physician and nurse at the core of the teams in the patient's medical home. Other roles, such as physician assistants, pharmacists, psychologists, social workers, physiotherapists, occupational therapists, and dietitians are to be encouraged and supported as needed (CFPC, 2011).

- Furthermore, additional training is required to establish a well-functioning and effective team. Suggested modules include: team development, skill development, communication, issues of power, autonomy and control, etc. (Cronholm et al., 2013; Tuepker et al., 2014). It is also recommended that teams learn through group learning activities, as it allows teams to practice and use the skills they learned together (Bidassie et al., 2014; Fontaine et al., 2014).

For more on information, see Team-Based Care

Quality Improvement

- The quality improvement process could be introduced as a practice self-monitoring improvement program or as an assessment carried out by an external group (CFPC, 2011).
- Within the transformation process to becoming a patient-centred medical home, it is imperative that a formal quality improvement strategy be developed to facilitate and guide the transformation process. An effective quality improvement strategy (Fontaine et al., 2014; Spenceley et al., 2013; Wagner et al., 2012; Wagner et al., 2014):

    - Has strong and engaged leadership and expertise in change management;
    - Uses rapid-cycle change methods to test ideas for change;
    - Relies on routine performance measurement to identify opportunities for improvement;
    - Routinely obtains and uses patient experience data to inform improvement efforts;
    - Involves staff in the development and implementation process:
        - The involvement of staff in improvement activities provides a grounded perspective on current processes and ideas for change, and may make changes more acceptable (Wagner et al., 2014); and,
    - Engages patients and families in efforts to make the practice more responsive to the needs and preferences of their clientele:
        - Strategies to engage patients and families in ongoing quality improvement efforts include: soliciting regular feedback through surveys, gathering additional information on patient perspectives through the formation of patient/family advisory councils, and inviting individual patients and consumer and patient organizations to contribute to quality improvement activities (Peikes, Genevro, Scholle, & Torda, 2011).

- To establish an effective QI Strategy, a practice should (Homer & Baron, 2010; McAllister, Presler, Turchi, & Antonelli, 2009; Wagner et al., 2012; Wagner et al., 2014):

    - Establish a quality improvement team (including patients and families) to support the implementation of the quality improvement strategy
    - Choose and use a formal model for quality improvement that relies on rapid cycles of change, planned and tested small changes, process mapping, and continuous measurement (e.g. model for improvement, lean, six sigma, or a more home grown approach)
        - Little rigorous evaluative or comparative research is available to help practices choose among these approaches (Wagner et al., 2014)
    - Establish and monitor metrics to evaluate routine improvement efforts and outcomes; ensure all staff members understand the metrics for success
    - Ensure that patients, families, providers, care team members, and local champions are involved in quality improvement activities

- Optimize use of health information technology that support critical functions, such as performance measurement, provider alerts and reminders, computerized order entry, and population management

- For the quality improvement strategy to be effective, it is important that clinically meaningful and actionable metrics that are appropriate to each practice and community setting be selected (CFPC, 2011; Coleman et al., 2014; Martin, 2014). Example indicators include clinical quality, patient experience, provider/staff satisfaction, utilization, patient outcomes (CFPC, 2011; Coleman et al., 2014). Using clinical data for quality improvement however, continues to be a challenge for many practices (Coleman et al., 2014).

Payment Reform

- Under current payment structures, there is a misalignment between traditional volume-based payment models and the PCMH goals, including population-based care and proactive prevention (Fontaine et al., 2014; Grant & Greene, 2012; Janamian et al., 2014; Tuepker et al., 2014). For example, traditional fee-for-service reimbursement schemes that pay only for face-to-face visits undermine the provision of care coordination services, especially for complex patients (Meyers, 2010). In fact, payment structures were identified as one of the most significant barriers to implementing the PCMH (The Conference Board of Canada, 2013; Wagner et al., 2012b).

- Evidence demonstrates that successful PCMHs include payment structures that reward based on improving population health rather than paying a fee for each discrete service for each individual patient (Meyer, 2010). Therefore, it is recommended that the payment structures be reformed to reflect (Fontaine et al., 2014; Grant & Greene, 2012; Meyer, 2010; Patel et al., 2013):
    - Comprehensive management of large numbers of patients (patient panels)
    - Value-based care
    - Patient-centred care
    - Population-based care
    - Team-based care

- Capitation and bundling reimbursement schemes and some forms of direct care models create a healthier policy landscape for primary care practice development (Crabtree et al., 2010). Therefore, It is recommended that payment structures be reformed to include a blended funding model that combines capitation, fee for services, and bonuses (Crabtree et al., 2010; Janamian et al., 2014, Meyer, 2010; Rosser et al., 2011).
- Blended funding is also the key recommendation of the **College of Family Physicians of Canada** (CFPC, 2011). The **Canadian Health Services Research Foundation** recommends sessional payments for physicians, or a blended model of capitation, sessional payment, and/or fee-for-service (CFPC, 2011).
- There is concern that adverse risk selection and “cherry picking” may be accentuated with payment structures that only have capitation; therefore, it is important that blended payment

models be utilized, including additional fee for service, bonuses, and incentives (Glazier & Redelmeier, 2013).

- Physicians in alternative payment models (salary, capitation, blended) may be more incentivised to participate in team meetings than physicians in fee-for-service models (The Conference Board of Canada, 2012b).
- Non-physician team members are most often paid on salary (The Conference Board of Canada, 2012b).
- Appropriate remuneration must also be in place not only for family physicians but for all members of the team (CFPC, 2011) however, there is little research on the impact of funding and remuneration schemes for non-physician IPC team members (The Conference Board of Canada, 2012b).

- Majority of PCMH have integrated blended payment models; for example:

  Ontario's Family Health Teams: physicians receive payment based on capitation (by age and sex), additional fees for service, and graded bonuses for achieving prevention targets and special payments to expand the scope of care to incorporate prenatal and intrapartum care, inpatient care, home visits, and palliative care for their patient panel. Fee income provides incentives for physicians to increase desired services; progressive population-based bonuses provide incentives for preventive services (Rosser, Colwill, Kasperski, & Wilson, 2010).

Health Information Technology (HIT)

Four Critical Roles Health Information Technology Plays in Enabling Transformation

1. **Registry functionality and population management**: identifying and managing the population of patients within a practice as a population.
2. **Care planning**: populating and sharing the content of care plans efficiently.
3. **Communication**: effective HIT can facilitate primary care-specialty communication, patient-doctor communication, and in-office team communication.
4. **Monitoring and tracking** change and improvement

(CAPH, 2013; Green et al., 2012; Homer & Baron, 2010)

- The PCMH model includes the use of an electronic medical/health record (EMR/EHR) system. These systems facilitate (CFPC, 2011):

  - Day-to-day patient care
  - Communication between team members
  - The sharing of information needed in the referral-consultation process
  - Teaching

- Carrying out practice-based research
- The evaluation of the effectiveness of the practice

- While many patient-medical homes in the US already had an EMR/HER system, health information technology was cited as a main barrier to PCMH transformation Reasons for this included (CFPC, 2011; Crabtree et al., 2010; Fontaine et al., 2014; Grant & Greene, 2012; Green et al., 2012; Janamian et al., 2014; Nutting et al., 2009; Quinn et al., 2013):

    - Insufficient funds to purchase and integrate EMR/EHR systems
    - Difficult and time consuming implementation of new technology
    - Lack of available and knowledgeable IT staff
    - The EMR/EHR systems were unsuitable in meeting PCMH goals (e.g. population-based care)
    - The EMR/EHR systems were not formatted to document care plans or care coordination notes,
    - The EMR/EHR systems did not provide registry capabilities
    - The EMR/EHR systems did not provide population health metrics
    - There was a lack of interoperability between EMR/EHR systems
    - Issues of privacy and confidentiality

- For successful integration of EMR/EHR systems, practices will require a significant investment of time, effort, and resources (Fontaine et al., 2014; Rosser et al., 2011). Furthermore, the systems must be adequately funded, have standardized language to ensure common data management, and be interoperable with other EMR/EHR systems. There must also be ample training and ongoing technical support for all team members in the practice (CFPC, 2011).

- The College of Family Physicians of Canada state that system supports, including funding to support the transition from paper records, must be in place to enable every patient's medical home to introduce and maintain EMR/EHR (CFPC, 2011). They further state that each practice should be allowed to select its EMR/EHR product and service providers from a list of provincially, territorially, or regionally approved vendors; these EMR and electronic health record systems must be interconnected, user-friendly, and interoperable (CFPC, 2011).

- Practices continue to need support to effectively use EMR/EHR systems for measurement and to redesign workflows (Coleman et al., 2014).

Team-Based Care

Definition

- Teamwork in healthcare is a group of providers and staff with complimentary skills and competencies who cooperate, collaborate, communicate, and integrate services so that healthcare is reliable and available for all those who wish to access services (Martin, 2014).
- Multiple terms are used to describe teams in health care, including multidisciplinary and interprofessional (also known as interdisciplinary). A **multidisciplinary team** is generally understood to mean various health professionals working parallel to each other, but not necessarily collaborating in the care of a patient. For health care teams to be most effective, an **interprofessional mode**l is most successful. In interprofessional teams, each health professional works to his/her full scope of practice, collaborates in the planning and comprehensive care of the patient, and communicates effectively with the team (Alberta Medical Association, [AMA}, 2013).

- The current evidence suggests that an interprofessional integrated and collaborative model performs the best (Sajdak, 2013). An interprofessional collaborative team are teams with 2 or more health care disciplines working **inter**dependently and communicating regularly to meet the needs of a patient population in a primary care setting (Sajdak, 2013; The Conference Board of Canada, 2012a; Virani, 2012). Team members contribute their disciplinary perspective and work to their full scope of practice (Wagner et al., 2012). They also share information and coordinate processes and interventions to provide patient-centred care. Generally, there is an explicit or underlying value for non-hierarchical decision-making in interprofessional collaborative teams (Virani, 2012).

  Health Canada states that the interprofessional collaborative team model is designed to promote the active participation of each discipline in patient care. It enhances patient- and family-centred goals and values, provides mechanisms for continuous communication among caregivers, enhances staff participation in clinical decision-making within and across disciplines and fosters respect for disciplinary contributions of all professionals (The Conference Board of Canada, 2013).

Team Composition

- The composition of a health care team should meet community and patient needs, be designed to improve access while also support continuity of care, and enhance cost effectiveness in the delivery of care (CFPC, 2011).
- There are many different variations of team compositions. Team members may include:

    - Extended group members are pharmacists, psychologists, psychiatrists, social workers, counselors, physiotherapists, occupational therapists, dieticians, midwives, licensed practical nurse, (CFPC, 2009; Rodriguez et al., 2014; Rosser et al., 2011; The Conference Board of Canada, 2012a).

- Other essential members of a team include administrative and clerical / support personnel, such as case managers, data analysts, and clerk or medical support assistants (Patel et al., 2013; Rosser et al., 2011; The Conference Board of Canada, 2013).

- According to the Conference Board of Canada (2012a), current models of interprofessional primary care teams in Canada are physician-led practices, nurse practitioner-led practices, community-led practices, and integrated primary care networks (The Conference Board of Canada, 2012a).

  (1) **Physician-led practices (PLP)**:
  Physician-led practices are managed or led by a physician or group of physicians. Within this model, the family physician or general practitioner is responsible for providing care to the patient. They physicians working within a Physician-led practices are predominately remunerated under a blended payment model, while other team members are often paid on a contract or salary basis (The Conference Board of Canada, 2012a).

  Examples of physician-led practices in Canada: Ontario Family Health Teams, Quebec Integrated Network Clinics, BC Integrated Health Networks, and Alberta Primary Care Networks.

  (2) **Nurse practitioner (NP)-led practices (NPLP)**:
  NP-led practices are led by a nurse practitioner. Within this model, the NP is responsible for providing care to the patient. Evidence has shown that nurse-led models of care provide equal or better care when compared to physician-led models of care (Virani, 2012). Given this, NP-led practices can serve as an alternative model of primary care delivery, especially for patient populations that have difficulties accessing a family physician (The Conference Board of Canada, 2012a).

  It is important to note that there are some differences in the NP's scope of practice compared with that of a physician, which can vary by jurisdiction.

  Examples of nurse practitioner-led practices: Ontario Nurse Practitioner-Led Clinics, Manitoba Quick Care Clinics, and Saskatchewan Health Bus.

- More often than not, however, physicians play the leadership, particularly when the funding for primary care is tied to fee-for-service or capitation models, in contrast to models that are more supportive of team-based care (e.g. models where all team members are salaried) (Virani, 2012)
- Under the PCMH model, the primary care physician, in close collaboration with the patient, would lead the interdisciplinary healthcare team (Janamian et al., 2014, Meyer, 2010; Rosser et al., 2011). However, others argue that to truly be patient-centred, the care team would not necessarily be "physician-led"; rather, the choice of leadership by a physician, nurse practitioner, or other clinician should belong to the patient and family (Scholle et al., 2010).

- It is imperative that the core primary care team is made up of clinical providers whose scopes of practice are fully extended around participating in population management, the delivery of whole person-oriented care for a defined population of patients over time (Spenceley et al., 2013). Optimal team size, composition, skill mix, and roles and responsibilities must be adjusting according to the population needs of the patient panel (CFPC, 2011; The Conference Board of Canada, 2014). Knowledge and understanding of providers' scopes of practice and competencies, and evidence of effectiveness and cost-effectiveness, are important in determining the appropriate provider mix, roles, and responsibilities for the team (The Conference Board of Canada, 2014). As such, there is no one team complement that will serve every population (Spenceley et al., 2013).

- A team based approach involves maximizing the skills of each professional on the primary care / family practice team in a complementary manner; no healthcare professional should be a substitute for the role of another (CFPCC, 2011). **Supplementation** refers to the principle of starting with a core primary care provider (i.e., the provider with the broadest skill set in terms of providing comprehensive whole person-oriented care for a defined population of patients over time), most often a family physician, and then adding complementary team members with the goal of leveraging their full scope of clinical skills to provide whole-person care to a patient population. Supplementation emphasizes everyone working to his/her full scope of practice. **Substitution** refers to the process of substituting one provider for another. This process may lead to increased fragmentation and reduced continuity of primary care. Substitution thinking is also fed by the a priori basket-of-service approach taken in primary care reform initiatives (Spenceley et al., 2013).

- Effective teams also include an office manager and reception staff, as a group practice will require some level of administrative support to reduce the workload of the team. The office manager needs to have responsibility for the day-to-day management of the practice, staffing levels, budget control, staff development and oversight of premises (e.g., facilities and equipment management, overall operations). The office manager would also be responsible for performance reports and support the improvement in quality of clinical practice (Sajdak, 2013). For a group practice there would also need to be a team of receptionists that would provide additional administration support to the practice, such as scheduling and coordinating appointments, filing, photocopying and completing patient registration (Sajdak, 2013).

- Example of PCMH teams include:

  Ontario's Family Health Team (Rosser et al., 2011):
  - The Family Health Team model includes an interprofessional team of professional who work together to provide patient care. The team includes family physicians, nurse practitioners, registered nurses, social workers, dietitians, and other professionals as determined by their patient population. Each of the Family Health Teams are set-up based on local health and community needs.

Veterans Health Administration – Patient Aligned Care Team (Tuepker et al., 2014):

- Veterans Health Administration is the largest integrated US health system to implement patient-centred medical homes. The PCMH were called Patient-Aligned Care Teams. The Patient-Aligned Care Teams includes a primary care provider, nurse care manager (NCM), clinical associate, a clerical associate, and is further supported by social workers, pharmacists, nutritionists, and psychologists

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Team Characteristics

- Teams share a number of different characteristic, including (American Hospital Association, 2013; CFPC, 2011; Markova et al., 2012; Rodriguez et al., 2014; The Conference of Canada, 2014; Tuepker et al., 2014; Wagner et al., 2014; Virani, 2012):

    - An interprofessional team where all members practice to the legislated full scope of his/her practice, respectfully share differing views and collaborating in order to deliver the highest quality care to the patient;
    - A common commitment, vision, and goal;
    - A formal and/or informal team leader who facilitates long-term team processes and fosters relationships to achieve team goals;
    - A shared identity with clearly defined and transparent roles and responsibilities and well-defined cross-coverage policies that are well understood by all team members;
    - Regularly and frequently communicate openly and honestly with each other;
    - Mutual trust and respect for all team members;
    - Willingness to cooperate and collaborate; and,
    - A set of performance goals for which they hold themselves mutually accountable.

- The characteristic most commonly cited as critical for healthy team functioning is having well-defined and clear teamwork processes and supportive policies (Rodriguez et al., 2014). Well-functioning teams also require adequate staffing, training, and dedicated time for team development (Tuepker et al., 2014).

List of Traits for Effective, High Functioning Interprofessional Primary Health Care Teams

- Strong **governance** and **leadership** at the administrative and service provision levels;
- **Appropriate funding**, remuneration, and financial incentives;
- Provision of and equitable access to appropriate health and social services;
- Recruitment and retention of highly skilled personnel who work to their full scopes of practice;
- Existence of and adherence to practice **policies and agreements that pertain to scopes of**

practice, team member roles and responsibilities, shared care and decision-making, and communication within the team and across health sectors, including coordination and continuity of care;

- Clear separation between administrative and patient service provisions;
- **Interprofessional education and training** for service providers where the team learn about, from, and with each other to enable effective collaboration (formative and continuous);
- Supportive infrastructure, including co-location, open design of physical space, opportunities for team communication, and appropriate use of information technology; and,
- Appropriate, standardized, and consistent **monitoring and evaluation** of individual and team performance and of patient outcomes, including SMART **accountability** measures that are linked to performance.

(AMA, 2013; The Conference Board of Canada, 2014)

Barriers to Team-Based Care

- Creating a healthy, functioning health care team can take anywhere from one to three years to become fully functional, depending on the readiness of the team and the level of governance, leadership, and infrastructural support (The Conference Board of Canada, 2012b). In fact, the process of effectively developing and integrating teams into primary care is a challenge that is all too often underestimated in its complexity, and under-supported from a change management perspective.

- The Conference Board of Canada (2012b) identified three levels of interprofessional collaborative team barriers:

  Individual-level barriers:

  - **Lack of role clarity and trust**: attributable to limited knowledge and understanding of other team members' knowledge, skills, and scopes of practice. Overlapping skills can create difficulties in formally establishing defined roles.
  - **Hierarchical roles and relationships**: team effectiveness and collaboration can be compromised when team members perceive and/or project a professional hierarchical order of importance or power.

  Practice-level barriers:

  - **Lack of strong governance and leadership**: lack of strong organizational leadership is an underestimated barrier to the implementation of effective interprofessional collaborative teams.
  - **Difficulties in establishing appropriate skill mix and team size**: there is no one-size-fits-all model in terms of appropriate skill mix and team size; it is highly reliant on the

professional competencies or skills and experience required to address the health needs of the patient population.

- **Insufficient space and time for communication and collaboration:** quantity and quality of interprofessional collaboration is related to the design of the physical space, whether there is co-location of team members, and the amount of time available for team members to formally communicate.
- **Inadequate tools for communication**: inadequate time for mechanisms of communication between IPC team members remain a significant barrier to interprofessional collaboration and team effectiveness.

System-level barriers:

- **Inadequate interprofessional education and training**: lack of competency in interprofessional collaboration due to lack of or inadequate interprofessional education and training.
- **Sub-optimal funding models**: challenge is to determine the appropriate remuneration model and financial incentives to promote increased and improved interprofessional collaboration, optimize individual scopes of practice, and improve recruitment and retention of health human resources/
- **Lack of appropriate monitoring and evaluation**: one of the greatest and most important challenges in the optimization of interprofessional collaborative teams is the lack of consistently collected, reported, and meaningful performance data.

- There are significant challenges that may hinder team development, including the cultural trappings of traditional, clinician-centric power and reimbursement structures, issues related to gender and class, resentment of other team members' roles, and fear of losing control (Cronholm et al., 2013). Therefore, factors that perpetuate hierarchy, such as language and decision-making processes, could be modified in order to reduce their potential negative impact on interprofessional collaboration (The Conference Board of Canada, 2012b).
- Another factor impeding the development of effective team in health care is the use of clinical decision-support tools and guidelines that are constructed around a single disease or a single provider. A key priority must be for evidence-informed and integrated decision-support tools to support continuous and comprehensive team-based care for individuals living with multiple chronic conditions and risk factors (Spenceley et al., 2013).

- Although there is abundant literature on the barriers to interprofessional collaborative team optimization, it remains unclear as to how may of these barriers can be overcome (The Conference Board of Canada, 2012b).

Creating Team-Based Care

- Team-based care is facilitated when extensive effort is made early in the team formation process to develop positive interpersonal and interprofessional relationships (Solimeo et al., 2013). For teams to flourish into effective, high-functioning teams that deliver team-based care, it is important that they have protected time to participate in team meetings and other collaborative activities, opportunities to attend learning session, and access to team-level performance data (Markova et al., 2012; Solimeo et al., 2013).

- Preliminary stages for building a team may focus on building teams and trust; understanding scopes of practice, roles, and responsibilities; fostering communication; and learning how to work together, a process that includes developing shared care protocols (The Conference Board of Canada, 2014).

Five steps to building a health team include:

Step 1: Develop a shared vision, mission, and values for the team
Step 2: Establish roles and responsibilities
Step 3: Develop operating guidelines and policies
Step 4: Create organizational structures, including team meetings
Step 5: Establish a method to evaluate and celebrate progress and outcomes

(The Conference Board of Canada, 2014)

- Elements required for building effective and sustainable teams include developing team leadership, revising job descriptions, cross-training staff, communicating clear goals, setting measurable objectives, and publically praising teams and individuals for accomplished task (Markova et al., 2012; Wagner et al., 2014).

- It is important that teams regular communicate with one another. This can be done via formal or information mechanisms, such as: weekly or monthly staff meetings, clinical operations meetings, practice improvement teams, regular scheduled team meetings, interprofessional conferences, team huddles, education rounds, and engagement in learning collaboratives (Markova et al., 2012; The Conference Board of Canada, 2014).
- EMR/EHR systems can facilitate communication among team members; however, this type of communication does not necessarily support or optimize collaboration (The Conference Board of Canada, 2014).

- A study conducted by Solimeo et al. found that teams with stable membership, particularly members with experience working together, were able to develop and advance more quickly than those teams with new employees (Solimeo et al., 2013).

Key Recommendations for Developing and Optimizing Interprofessional Care teams in Canada:

- Establish a strong and stable governance and leadership structure that includes a management team with appropriate knowledge and skills
- Adopt a funding and remuneration structure that supports interprofessional collaboration and delivery of accessible, high-quality, cost-effective, patient-centred care
- Provide population needs-based services delivered by the right providers, at the right time, in the most cost-effective way
- Establish and implement standardized patient hand-offs, referrals, and care coordination among providers on the team, and across organizations and sectors, to ensure quality and continuity of care
- Mandate high-quality interprofessional education and training for all health professionals to support the development and mastering of the core competencies of interprofessional collaboration
- Optimize the use of communications technology, physical space, and other infrastructural supports to facilitate and improve collaboration
- Engage in regular and consistent monitoring and evaluation of cost-effectiveness, provider and organizational provider performance, and use of data linkage and knowledge sharing within and across teams
- Adopt clear and enforceable accountability processes for the organization, administration, and providers, which are linked to performance

(The Conference of Canada, 2013)

<u>Additional Education and Training</u>

- Additional interprofessional education and training is a critical component to the development of effective, high-functioning teams (Tuepker et al., 2014). In fact, it was identified as one of the main solutions to address individual, practice, and system level barriers to IPC (The Conference of Canada, 2013).

- Additional education and training should focus on six core competencies for interprofessional collaboration (The Conference of Canada, 2014):
    (1) **Interprofessional communication**: the ability to communicate with other professions in a collaborative, responsive, and respectful manner.
    (2) **Client-centred care**: the ability to search for, integrate, and value clients' input and engagement in care/services decision-making and implementation.
    (3) **Role clarification**: the ability to understand one's own role and the roles of others, and to use this knowledge to establish and achieve client populations' goals.
    (4) **Team functioning**: the ability to understand the principles of teamwork and group dynamics in order to be effective in the practice of interprofessional collaboration.
    (5) **Collaborative leadership**: the ability to understand and apply principles of leadership to be effective in the practice of interprofessional collaboration.

(6) **Interprofessional conflict resolution**: the ability to actively engage with others (such as team members and clients) to positively and constructively address conflicts

- Other suggested topics include leadership development, interprofessional collaborative practice competency and skill development, stages of team development, team dynamics, effective communication, shared decision-making (Long et al., 2014; Martin, 2014).

Collaborative learning series / group learning

- Collaborative learning series / group learning allows teams to practice and use the skills they learned together (Bidassie et al., 2014). Collaborative learning series increase participant's knowledge and skills, improves collaborative team practices (e.g. team-led huddles, regular team meetings), and contributed towards a clear understanding of team member roles and responsibilities (Bidassie et al., 2014, Coleman et al., 2014, Fontaine et al., 2014).

- Collaborative learning series are common strategies used by patient-centred medical homes to support continuous team-based healing relationships.

  Veterans Health Administration - Patient Aligned Care Teams Collaborative Modeled after the Institute for Healthcare Improvement's Breakthrough Series Collaborative Model. It includes training seminars, virtual communities of practice, and virtual lectures (Bidassie et al., 2014; Solimeo et al., 2013).

- Implementing collaborative learning series / group learning activities requires additional resources (e.g. facilitators, coaching assistance) (Bidassie et al., 2014).

Physician Extenders

- The impending shortage of primary care physicians combined with convincing evidence that minor illnesses consuming much of a physician's time can be treated effectively and less expensively by nurse practitioners and physician will likely fuel the continued expansion of the use of physician extenders (Auerbach et al., 2013; McKinlay & Marceau, 2012).
- Physician extenders free up the time of physicians by re-allocating the routine and less complex aspects of medical practice to other primary care providers, which allows physicians to use their time and expertise in a more effective way (Stanik-Hutt et al., 2014; Vanstone, Boesveld, & Burrows, 2014).
- Physician extenders are becoming more common due to the shortage of family physicians and the increasing demand on the primary care system (Vanstone et al., 2014). Current forecasts of supply and demand suggest large shortages of physicians and surpluses of nurse practitioners and family physicians in the near future (Auerbach et al., 2013).

- For physician extenders to be truly effective, scope-of-practice laws may need to be revised to allow nurse practitioners and physician assistants to perform expanding roles (Auerbach et al., 2013)

- Barriers to integrating physician extenders (Auerbach et al., 2013; Kellermann, Saultz, Mehrotra, Jones, & Dalal, 2013; Spenceley et al., 2013):

    - Restrictive scope-of-practice laws that require physicians' involvement in certain care processes and patients' perceptions of nurse practitioners and preferences for providers.
    - Remuneration issues for both the physician extender and the supervising physician.
    - Although PAs and NPs require less training than medical doctors, they still require a significant amount of schooling and additional training.

- Some patient-centred medical homes are already using physician extenders. For example, the VHA-PACT model includes a primary care provider, which can be either a physician, physician's assistant, or a nurse practitioner, as well as a registered nurse (RN) care manager, a licensed practical nurse (LPN), and a clerk or medical support assistant (Rodriguez et al., 2014).
- Many small primary care practices include one or more midlevel clinicians, such as nurse practitioners or physician assistants (Nutting et al., 2012).

Nurses and Nurse Practitioners

- Nurse managed health centres could greatly reduce the need for primary care physicians (Auerbach et al., 2013).

- Nurse practitioners (NP) are considered advanced practice nurses, an umbrella term defined internationally as registered nurses (RNs) who have acquired the expert knowledge base, complex decision-making skills, and clinical competencies for expanded practice (Koren, Mian, & Rukholm, 2010).
- A nurse practitioner's practice activities, roles, and responsibilities are often similar to those of medical doctors (MD), and NPs and MDs often work in the same practices or settings (Kellermann et al., 2013; Stanik-Hutt et al., 2014).
- A NP delivers high quality, safe, and effective care to a large number of patient populations in a variety of settings (Stanik-Hutt et al., 2014). They can practice autonomously and/or in partnership with MDs have a very significant role in promoting health and providing care to diverse populations (Stanik-Hutt et al., 2014). Accumulating evidence over 50 years shows nurses can provide primary care that is as effective and has similar outcomes as that provided by physicians (McKinlay & Marceau, 2012). For example, research confirms the capabilities of nurses and nurse practitioners to provide chronic care management and preventive services at levels at least comparable to that provided by physicians (Homer & Baron, 2010). Evidence indicates that if needs can be met by NPs, then systems should incorporate NPs to the fullest extent possible. This structure would free up MDs to attend to patient needs that demand their scope of capabilities (Stanik-Hutt et al., 2014).

- There have long been challenges to integrating enhanced roles for nurse practitioners in primary care practices in part due to real and perceived resistance from physicians and physician organizations (Auerbach et al., 2013; Crabtree et al., 2010).
- The role of the NP in a patient-medical medical home is often limited by the definition of a PCMH, which states that patients will have access to a personal physician. The role of the NP is not utilized to the fullest if they are unable to be leaders of medical homes for their patients (Manion, 2012). If the PCMH definition insists on using physician-only language in the medical home definition, the ultimate goal of the medical home is lost (Manion, 2012). The National Association of Pediatric Nurse Practitioner's defines the "pediatric" health care/medical home as a model of care that promotes holistic care of children and their families where each patient and their family has continuous relationship with a health care professional (Manion, 2012).

- It is essential that future models of care take full advantage of the growing number of NPs to their full potential and capabilities (Stanik-Hutt et al., 2014).

Physician Assistants

- Physician assistants (PA) are a new health profession (Vanstone et al., 2014). They were proposed as a potential solution to help improve access to health care and reduce wait times (Vanstone et al., 2014).
- PAs are skilled health professionals trained in basic medical sciences who provide care under the direction and supervision of a physician (CFPC, 2011). PAs are trained to take patient histories, conduct physical examinations, order and interpret tests, diagnose and treat illnesses, counsel on preventive health care, and may develop additional specialized skills while working with a supervising physician. They are not autonomous health professionals; their scope of practice is directly defined by their supervising physician, who retains responsibility and liability for acts delegated to the PA (Vanstone et al., 2014).

- The College of Family Physicians of Canada recognizes that physician assistants, under the direction and supervision of a family physician, are among those professionals with the potential to augment access to family practice services and primary care (CFPC, 2011). The College of Family Physicians of Canada supports the role of physician assistants as a resource within family practice and other environments involving family physicians, working collaboratively with family physicians and other health care professionals (CFPC, 2011).
- Both the Canadian Association of Physician Assistants and the Canadian Medical Association recommend that physician assistants within Canada be regulated and registered with their provincial or territorial medical regulatory authority (CFPC, 2011).
- A number of provinces have incorporated physician assistants into primary health care, including Manitoba, where they have been regulated since 1999, as well as Alberta and British Columbia. Regulation and certification requirements are still under consideration (Vanstone et al., 2014).

Patient-Centred Care

Patient Engagement / Involvement

- One of the key principles of patient-centred medical homes is patient-centred care. To support the delivery of patient-centred care, it is important to engage patients and families into the design and functioning of the PCMH (Scholle et al., 2010; Wexler et al., 2014). To do so, it is suggested that a pool of informed and activated patients who can serve as effective participants in practice design be developed (Scholle et al., 2010). The existing evidence based for patient engagement in PCMH design and implementation, and the effectiveness and feasibility of specific approaches however is limited and variable. Efforts to engage patients in their own care, practice improvement, or policy related to the PCMH are not common (Scholle et al., 2010).

Three Levels for Patient Engagement in the Design and Functioning of a Patient-Centred Medical Home

1. **Engagement in their own care**, including communication and information sharing, self-care, decision-making, safety):
    - Learn about how the practice works
    - Discuss roles with team
    - Work with provider(s) to identify and monitor treatment and self-care goals
    - Participate in peer support groups or group visits,
    - Review evidence-based decision aids
    - Review medical information and treatment results
    - Report on adverse events and potential safety problems

2. **Quality improvement in the primary care practice**:
    - Participate in quality improvement teams
    - Participate in patient/ family advisory
    - Councils or other regular committee meetings
    - Provide feedback through surveys
    - Help in development of patient materials
    - Participate in focus groups
    - Do “walk-through” to give staff a patient perspective of practice workflow
    - Conduct peer-to- peer patient surveys

3. **Development and implementation of policy and research**:
    - Serve on policy and quality improvement committees at various levels of private and public sectors

- Gather input from other consumers
- Participate in design of medical home demonstration programs
- Participate in training for clinicians or practice teams

(Peikes et al., 2011; Scholle et al., 2010)

- Key lessons about successful engaging patients and families (Scholle et al., 2010):
  - Asking patients and families what matters most to them is a critical step in engaging them in care;
  - Both providers and patients and families need to develop new skills to facilitate patient and family engagement; this can be achieved through additional training for providers, patients, and families;
  - There is no one-size-fits-all solution; patient engagement will look very different for different practices, patient populations, and individual patient-provider interactions;
  - Need multiple and flexible approaches to gain patient input; and
  - Health information technology has the potential to support patient engagement in the context of thoughtfully designed care systems.

- Decision-makers can promote greater patient engagement by (Peikes et al., 2011):
  - Requiring primary care practices to demonstrate active engagement of patients and families in patient care and quality improvement activities;
  - Using payment strategies to support the active engagement of patients as partners in their own care and in practice-level quality improvement;
  - Supporting practices with technical assistance, tools, and shared resources to engage patients;
  - Requiring health information technology standards to recognize and promote patient engagement;
  - Requiring meaningful patient input in the design, implementation, and evaluation of PCMH; and,
  - Supporting additional research on the feasibility and impact of patient-engagement strategies.

- Engaging and involving patients and families in PCMH design and function is limited by financial and logistical constraints (Scholle et al., 2010). For example, traditional fee-for-service reimbursement does not reward practices for engaging patients. Therefore, payment reform is critical to support patient and family engagement.

Patient Perspective

- According to the "consumer" perspective, a PCMH can become more patient-centred by integrating the following strategies (Scholle et al., 2010):

    - **Care team:** the care team is led by a qualified provider of the patient's choice, and different types of health professionals can serve as team leader.
    - **Whole-person orientation**: the PCMH "knows" its patients and provides care that is whole-person oriented and consistent with patients' unique needs and preferences.
    - **Care coordination**: the PCMH takes responsibility for coordinating its patients' health care across care settings and services over time, in consultation and collaboration with the patient and family.
    - **Self-management support**: patients and their caregivers are supported in managing the patient's health.
    - **Shared decision-making**: patients and clinicians are partners in making treatment decisions.
    - **Quality improvement:** the PCMH seeks out and encourages patient feedback on experience of care, and uses that information to improve the quality of care provided; the PCMH collaborates with patient and family advisors in quality improvement and practice redesign.
    - **Access**: the patient has ready access to care; open communication between patients and the care team is encouraged and supported.
    - **Communication and trust**: the PCMH fosters an environment of trust and respect.

Patient Experience

- According to the Patient Centred Primary Care Collaborative, patient experience seeks to explore what patients did or did not experience in their interactions with providers and the health care system (PCPCC, 2010). It is a key measure of patient-centeredness (PCPCC, 2010).
- Patient experience may be captured by assessing (PCPCC, 2010):

    - Ease of scheduling appointments;
    - Availability of information;
    - Communication with clinicians;
    - Responsiveness of clinic staff;
    - Coordination between care providers;
    - How the provider engages a patient as a whole person and in decision making;
    - Disease management; and,
    - Health promotion.

- There are a number of activities that can enhance the patient experience. For example, in addition to improving decision-making and care for patient, pre-visit team huddles have been shown to result in improved patient satisfaction (Green et al., 2012).

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