2017 Programmatic Review:
Models of Care

Environmental Scan
June 2017

The Cancer Quality Council of Ontario

Report prepared by the Cancer Quality Council of Ontario (CQCO) as a backgrounder to inform the joint CQCO-
Cancer Care Ontario (CCO) Programmatic Review on CCO’s Models of Care Program.
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Acronyms

ACA – Affordable Care Act
AFP – Alternate Funding Plans
ASCO – American Society of Clinical Oncology
CCO – Cancer Care Ontario
CFHI – Canadian Foundation for Healthcare Improvement
CMMI – Centre for Medicare and Medicaid Innovation
CPAC – Canadian Partnership Against Cancer
CQCO – Cancer Quality Council of Ontario
CSQI – Cancer System Quality Index
ED – Emergency Department
ICCI – Institute for Cancer Care Innovation
IHI – Institute for Healthcare Improvement
IS – Implementation science
IT – Information technology
ISAEC – Interprofessional Spinal Assessment and Education Clinics
MOC – Models of care
MOHLTC – Ministry of Health and Long-Term Care
NDFP – New Drug Funding Program
NHS – National Health Service
NZ – New Zealand
OCP – Ontario Cancer Plan
OECD – Organization for Economic Co-operation and Development
PCOP - Patient Centered Oncology Payment model
PDSA – Plan Do Study Act (an iterative quality improvement framework)
QI – Quality Improvement
SWOT – Strengths, Weaknesses, Opportunities and Threats analysis
WA – Western Australia
WHO – World Health Organization
1. Background

Cancer Quality Council of Ontario

The Cancer Quality Council of Ontario (CQCO) is an advisory group that was established in 2002 by the Ministry of Health and Long-Term Care (MOHLTC) and is quasi-independent to Cancer Care Ontario (CCO). It was set up to provide advice to CCO and the MOHLTC in their efforts to improve the quality of cancer care in the province. The CQCO is supported by a Secretariat housed within CCO.

The CQCO is a multidisciplinary group of healthcare providers, cancer survivors, family members and experts in the areas of oncology, health system policy, performance measurement, health services research and health care governance.

The CQCO has a mandate to monitor and report publicly on the performance of the Ontario cancer system and to motivate improvement by bringing national and international expertise to bear on quality improvement initiatives in Ontario. The CQCO works with CCO’s Board of Directors to assess cancer system performance and quality, identifying areas for improvement and advising on planning and strategic priorities. In 2010, the CQCO expanded its mandate to include international benchmarking of cancer system performance.

The CQCO Programmatic Review is one of four key tools used to achieve our mandate. The Programmatic Review typically brings CQCO members, CCO’s Executive Team, senior staff, Ontario clinical leads, patients, family members, and caregivers together with experts from other jurisdictions to review an existing or emerging cancer system program, analyze its effectiveness and make recommendations to CCO regarding strategic directions and improvements.

More information about the CQCO, the Programmatic Review and the other three tools used by the CQCO can be found at: http://www.cqco.ca

CQCO 2017 Programmatic Review: Main components

The 2017 Programmatic Review is on CCO’s Models of Care Program. The Programmatic Review process has four main components:

- **Environmental scan** – literature/best practice search to identify key themes and topics. Sets the foundation and backdrop for the Programmatic Review event.
Current statement assessment – detailed description of current operations and functions.

Critical appraisal – via key informant interviews and Strengths, Weaknesses, Opportunities and Threats (SWOT) analysis.

International input – experts to participate in the discussion and advise CCO on future recommendations. Due to the nature of this year’s event and based on the input from the Steering Committee, this year’s Programmatic Review is more focused within Ontario than usual.

Programmatic Reviews culminate in a one-day event where stakeholders are brought together to share knowledge and discuss recommendations moving forward for the CCO program under review. This year’s Programmatic Review event will be held on June 15, 2017. Objectives of this programmatic review are to:

- Determine key enablers and barriers to successfully enabling changes in models of cancer care, including:
  - how to share knowledge about models of care;
  - how to decide which models to implement;
  - how to implement models of care;
  - how to evaluate the impact of models of care, and
  - how to sustain and spread models of care.
- Inform CCO’s optimal role in enabling models of cancer care.
- Develop a set of recommendations for CCO to improve the organization’s ability to successfully catalyze and support models of cancer care that maximize desired outcomes.
2. Introduction
The conventional models of cancer care were developed decades ago as a provider-centric model and are currently too often not meeting the needs and expectations of the patients and families they are meant to serve. The reality now is the availability of treatments and patients’ expectations are dramatically different than they were a century ago (Davidson, Halcomb, Hickman, Phillips, & Graham, 2006). The models of care of today must protect the health and well-being of patients by ensuring they are getting the best evidence-based care available. Moreover, access to this care should be seamless. Changes to the models of care are needed if patients are to receive the care that best suits their needs, which may involve accessing care across different modalities, in different settings, or provided by different healthcare professionals. The need for change has been highlighted by Ontario’s MOHLTC, when in 2016 the Ministry passed The Patients First Act, meant to help create a more patient-centred healthcare system by improving access to primary care, providing better connections between care providers and care settings, streamlining care where appropriate, and ensuring patients have a voice in local healthcare planning (Ministry of Health and Long-Term Care, 2016).

The healthcare system is facing multiple pressures that threaten its sustainability. The number of new cancer cases diagnosed each in Ontario has been steadily increasing since the 1980s, driven by an aging and growing population (Figure 2). Results from the Cancer System Quality Index (CSQI) report the projected number of new cancer cases in 2017 (88,045) is a 197% increase compared to the number of cases in 1981 (Cancer Quality Council of Ontario, 2017). Meanwhile, a shortage in human health resources has been reported for many years now, with many reports warning of a shortfall (Canadian Institute for Healthcare Information, 2002; The Standing Senate Committee on Social Affairs, Science and Technology, 2002; High-Level Commission on Health Employment and Economic Growth, 2016). Moreover, as new technology and treatments become more sophisticated, they can also become more costly. The cost of oncology drugs funded by Ontario’s New Drug Funding Program (NDFP) has increased steadily over the past two decades. In fiscal year 2016/17, there will be an estimated 10 new drug indications compared to the previous fiscal year, with the drugs funded under the NDFP costing approximately 315 million CAD. Canada is spending more on healthcare compared to its Organisation for Economic Co-operation and Development (OECD) counterparts. Ontario’s cost per capita on
healthcare spending in 2016 was slightly less than the Canadian cost per capital ($6,144 versus $6,299 respectively), but it also accounted for a greater percentage of the budget (41% versus 38%) (Canadian Institute for Healthcare Information, 2016).

In 2009, the CQCO held complementary signature events focused on models of care, *Why are we using 19th century medical models for 21st century patients?*, and *Using Technology to Improve the Patient Experience in Cancer Care* (Cancer Quality Council of Ontario, 2009). The two events examined the need for models of care to address challenges in the healthcare system, as well as technology’s role in doing so. The resulting proceedings report including a number of recommendations to enable changes to models of care, which has notably led to CCO’s Models of Care (MOC) Program within the Cancer Programs and Quality Initiatives portfolio, as well as the inclusion of models of care work under both the Ontario Cancer Plans III and IV.

Since 2011, the Models of Care program has had a number of accomplishments, which are outlined in the pre-reading document, *Models of Care Current State Assessment*, but there is also significant work ahead to achieve a sustainable cancer care system. Given the ongoing realities of the costs and expectations for our population and our healthcare system, the vision of CCO’s Models of Care program is now more relevant than ever.

**Objective**
The objective of the environmental scan is to identify programs and initiatives from other jurisdictions on changing models of care, and from these, to identify themes that address the objectives of the Programmatic Review (page 5). This report is intended to be a piece of foundational information for the 2017 Programmatic Review event to be held on June 15, 2017 where stakeholders will come together to share knowledge and discuss the critical success factors and barriers to enabling models of care cancer care at a systems level.

**Scope**
The focus of this scan is on initiatives that enable changes to models of care at the system level, across the cancer continuum, rather than specific models of care, or strategies at the institutional- or provider-level. That being said, case studies on specific models of care were included if they helped inform or exemplify the broader issues identified in the review objectives. This report should not be considered a scan of specific models of care, but it will provide an overview of knowledge-sharing, implementation, evaluation and sustainability of changes to models of care.

**Search methodology**
The scan was undertaken from January to April 2017. Academic literature was gathered using search keywords and using the following databases: PubMED and Google Scholar. Grey literature was gathered using the same key words using Google. Documents were included/excluded based on the scope of the environmental scan. Targeted searches were conducted on publically available resources for select organizations of interest. Additional articles and organizations of interest were identified from within the articles found, and also from the
members for the Programmatic Review Steering Committee, Working Group and key informant interviews (See Appendix A and B for members and interviewees).

Searching the academic literature resulted in many articles that were focused on testing the effectiveness of a specific model of care and not the process of supporting the model – these articles were thus out of scope. There were however some articles that, while focused on describing a specific new model, also discussed lessons learned from a systems perspective, and these articles are included in this report.

There were a few articles, from the academic and grey literature that were particularly valuable in addressing the objectives of this programmatic review, most notably the implementation, evaluation and spread of new models of care. These include: Greenhalgh et al. is a systematic review of literature examining the factors influencing the diffusion of healthcare innovations at the system and individual level (Greenhalgh, Robert, MacFarlane, Bate, & Kyriakidou, 2004); a report by McCarthy et al. released by the Commonwealth Fund in 2015, examining the barriers and enablers to models of care developed for high-need, high-cost patients (McCarthy, Ryan, & Klein, 2015); and a 2011 report by Denis et al. released by the Canadian Health Services Research Foundation (now the Canadian Foundation for Healthcare Improvement) discussing healthcare transformation in Canada (Denis, Davies, Ferlie, & Fitzgerald, 2011).

Key experts for interviews were identified primarily via by the Steering Committee and Working Group, and a snowballing approach was used to identify additional experts. The CQCO Secretariat contacted administrators, academics, clinicians, program managers and patients in Ontario as well as Manitoba, Nova Scotia, Sweden, the United Kingdom, New Zealand and the United States. The CQCO Secretariat conducted a total of 36 interviews to inform this environmental scan (Appendix B).

3. Findings
The results from the scan are grouped in themes of knowledge-sharing, implementation, evaluation & sustainability and the role of a central body. Results from this scan should be not be considered a comprehensive in these areas, but a snap shot based on the literature reviewed and the key informants interviewed.

3.a. Models of care as a program and a philosophy
There is considerable variation in defining ‘models of care’, which can refer to a defined program, or as a philosophy that can be encompassed by any individual or group working in healthcare. A literature review done by the Queensland government in Australia did not find a clear definition of ‘models of care’ (Queensland Health, 2000). Below are the definitions for models of care used by CCO and other select organizations:

<table>
<thead>
<tr>
<th>Organization or citation</th>
<th>Definition of “model of care”</th>
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<tbody>
<tr>
<td>CCO</td>
<td>The way health services are designed and delivered for a person as they progress through the stages of a condition, injury, or event.</td>
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</table>
New South Wales Agency for Clinical Innovation
(NSW Agency for Clinical Innovation, 2013)
Broadly defines the way health services are delivered. It outlines best practice care and services for a person, population group or patient cohort as they progress through the stages of a condition, injury or event. It aims to ensure people get the right care, at the right time, by the right team and in the right place.

Queensland government
(Queensland Health, 2000)
A multidimensional concept that defines the way in which health care services are delivered.

Waikato Health Board, New Zealand
(Waikato Health Board, 2004)
A model of care outlines the best practice patient care delivery through the application of a set of service principles across identified clinical streams and patient flow continuums.

There was general agreement amongst the interviewees that CCO’s definition of ‘models of care’ was appropriate, although some noted that patient and provider experience should be more explicitly mentioned. Some interviewees offered the definition that models of care referred to three things – the people who are providing care, the place where care is provided, and the processes of how care is provided. Others referred to the quadruple aim – that is that models of care should be improving the population health outcomes, the patient experience, the cost-effectiveness of the system, with the fourth component being improving the provider experience (Bodenheimer & Sinsky, From Triple to Quadruple Aim: Care of the Patient Requires Care of the Provider, 2014).

Other terms such as ‘healthcare innovation’ or ‘reform’ were commonly found to align with the definition of models of care. For example, some definitions of healthcare innovation in the table below show the considerable overlap between these concepts. There was notably less found in the literature in terms of a succinct definition for ‘healthcare reform’, but colloquial use of the term in news articles and blogs includes the idea of increasing the quality of care, ensuring healthcare financial coverage for patients, and reducing costs for the system (Medical Mutual, 2017; Reinhardt, 2009).

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<thead>
<tr>
<th>Organization or citation</th>
<th>Definition of “healthcare innovation”</th>
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<tbody>
<tr>
<td>Agency for Healthcare Research and Quality (AHRQ) (Agency for Healthcare Research and Quality, 2017)</td>
<td>The implementation of new or altered products, services, processes, systems, policies, organizational structures or business models that aim to improve one or more domains of health care quality or reduce health care disparities.</td>
</tr>
<tr>
<td>Omachonu and Einspruch, 2010 (Omachonu &amp; Einspruch, 2010)</td>
<td>Innovation in healthcare organizations are typically new services, new ways of working and/or new technologies.</td>
</tr>
<tr>
<td>NHS Scotland Quality Improvement Hub (Jeffcott, 2014)</td>
<td>Refers to the notion of doing something different rather than doing the same thing better.</td>
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The term ‘quality improvement’ (QI) was also at times used interchangeably with models of care. Although some QI changes may be granular and not representative of a change in the model of care, other changes will. The differences between changes that are models of care or not can be illustrated by the following image depicting innovation versus improvement, adapted from the Innovation Learning Network (The Innovation Learning Network, n.d.):

![Innovation versus improvement](image)

Changes that result in big jumps in healthcare are the healthcare innovations, which can change the model of care. The changes that might follow a big healthcare innovation are more granular changes. Nonetheless, as shown by the definitions above, the boundaries between healthcare models of care, innovation, reform and quality improvement are not distinct and often overlap.

3.b. Knowledge-sharing

**Central organizations are needed to support sharing knowledge across disciplines**

Interviewees highlighted a number of common mechanisms for sharing knowledge in the healthcare community, including publishing results and sharing experiences at professional conferences. However, many noted that limiting learning about models of care from these mechanisms can be insufficient since results may not be formally published. Moreover, when limited to these channels, knowledge-sharing can remain intra-disciplinary. Lessons learned from front-line staff, reported both from interviewees and literature, show that in order to spread knowledge of models of care, there needs to be “cross-pollenization” across disciplines. (Tomblin Murphy, Alder, MacKenzie, & Rigby, 2010). Knowledge about models of care should be shared across, and between administrators, physicians, nurses, policymakers, researchers, educators, as well as across settings of care (e.g. acute care, primary care, etc.) (Tomblin Murphy, Alder, MacKenzie, & Rigby, 2010). Moreover, in-person meetings are crucial in the dissemination of knowledge, and face-to-face discussion has been shown to be more effective in sharing knowledge compared to writing (Bevan, 2016).
Interviewees also noted that while individuals are often eager to share information and lessons learned with other groups or regions, a central body is often needed to help facilitate knowledge sharing activities. Mechanisms for sharing information that are currently used by a wide range of central bodies include:

- In-person meetings, e.g. working groups, workshops, conferences
- Webinars and teleconferences
- Providing the space to share knowledge, such as an online community or newsletters
- Formal publications, summary reports, and research publications.

**Spreading innovations across jurisdictions is difficult, but there are facilitators**

Many interviewees noted that often healthcare systems rely on pilots in to test a model of care, and assume that if the model is successful, the change will be brought to scale and spread to other sites. Unfortunately, this is often not the case, as noted by interviewees and also by literature (Ploeg, et al., 2014). Spreading innovation is a complex process, and one source estimates that only about 10-20% of all pilot initiatives ever get spread across an entire system (Bevan, 2016).

While spread of innovations to other jurisdictions is difficult, there have been several factors noted in the literature that can facilitate the process:

- Open innovation is better at facilitating spread than closed innovation (Bevan, 2016). In closed innovation, a pilot site tests and refines an initiative amongst themselves and keeps the results closely guarded until proven successful. In contrast, open innovation encourages continuous sharing of results, and stakeholders across many jurisdictions contribute to the refinement and development of a model. Open innovation encourages multiple sites to have a sense of ownership in an initiative, and also many sites will have already have knowledge of the initiative once it is ready for spread. (Bevan, 2016).
- Leaders who are committed and passionate helps to facilitate the spread of models (Ploeg, et al., 2014). A leader’s passion about a project can spread and influence other people’s interest and commitment to change (Ploeg, et al., 2014). Beyond organizational leaders, champions are needed at all levels and disciplines.
- Seeing the benefits in sites where an initiative was implemented is crucial in trying to spread the innovation to other jurisdictions (Ploeg, et al., 2014). This includes benefits at the patient, provider and organizational level. There needs to be a clear advantage to adopting a model, and planning must be done from the onset to choose which measures can demonstrate impact, and determine the availability of the data to measure impact (Jeffcott, 2014).
- The more simple and compatible the innovation is with the current system (including current organizational priorities and culture), the more likely the innovation will be to spread (Jeffcott, 2014; NHS Modernisation Agency, 2005).
- Adapting an initiative to local contexts is important to ensuring the successful spread of a model to a different region (NHS Modernisation Agency, 2005).
Some organizations have developed frameworks to help facilitate the spread of healthcare innovations, including the Institute for Healthcare Improvement, NHS England. These frameworks for spread can be found in Appendix C.

3.c. Implementation
The findings presented about the implementation of models of care can be organized into two sections: 1) the tools or mechanisms used to help implement models of care and 2) the common characteristics of successfully implemented models of care.

SECTION I: TOOLS AND MECHANISMS TO IMPLEMENT NEW MODELS OF CARE

Using system reform or plans to galvanize change in models of care
Changes to modes of care can be mandated or incentivized by government bodies in the form of defined priorities, strategies, or health plans. Larger scale transformational changes may require significant strategy and organizational realignment (Denis, Davies, Ferlie, & Fitzgerald, 2011). On one end of the spectrum, governments can create an environment ready for change by breaking down policy barriers, or creating new legislation that paves the way for new models of care, such as seen with the Affordable Care Act in the United States. New strategies can also re-organize the system or create new programs, which can create opportunities for new models of care, such as with the re-organizations of care in New Zealand and England. Governments can also support new models of care by designating it as an organizational priority, such as in the case of Cancer Care Ontario’s Cancer Plans III and IV. Further information about these jurisdictions can be found below.
### Organization Description of system-level strategy

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<tr>
<th>Organization</th>
<th>Description of system-level strategy</th>
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<tr>
<td>Ontario Cancer Plans, Cancer Care Ontario (CCO)</td>
<td>At CCO, the need for developing new models of care has been entrenched into the Ontario Cancer Plan (OCP) III and IV. In the OCP III (2011-2015), the development and implementation of innovative models was one of the six strategic priorities (Cancer Care Ontario, 2011). Now in OCP IV (2015-2019), CCO prioritized models of care work under Sustainability, one of seven priority domains, under the strategic objective to “optimize the model of care delivery to achieve the greatest benefit for patients and the cancer system” (Cancer Care Ontario, 2015). By including the MOC program itself or the value of the program in the cancer plan, CCO is prioritizing and validate the goals of the MOC work. The OCP IV and the sustainability domain also guides the work done by other CCO programs, and these programs may relate to MOC’s work closely. For instance, the Capital Planning group does work in forecasting the number of certain healthcare providers needed and associated costs required, which is directly affected by new models of care that involve labour substitution. In addition, the Regional Program Development Group is affected by the Models of Care work, given the implementation of the initiatives occurs in the regions. Recently, Regional &amp; Planning Programs has also created a value-for-money framework which is meant to help support CCO in carrying out value for money assessment of new of existing initiatives (Lajoie, 2016).</td>
</tr>
<tr>
<td>Affordable Care Act (ACA), United States</td>
<td>The ACA is a national healthcare reform law that was implemented in the United States in 2010 (U.S. Centers for Medicare &amp; Medicaid Services, n.d.). In addition to expanding healthcare coverage in the population, the ACA aimed to support healthcare innovation to improve care. Under the ACA, the Center for Medicare &amp; Medicaid Innovation (CMMI) was established and worked to test and evaluate new models of reimbursement (e.g. from pay-for-service to a bundled payment system), with the intention of transforming the way care is delivered. Another organization established under the ACA is the Patient-Centred Outcomes Research Institute (PCORI), which has focused work on measuring patient-centred outcomes in relation to care provision and informs the value in the care being provided.</td>
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| New Care Models Programme, National Health Service (NHS) England | Launched in March 2015, the NHS’ New Care Models Programme was a direct response to the organization’s Five Year Forward View published the previous year. (National Health Service, 2014). The New Care Models Programme uses an approach where local bodies, called vanguards, own and deliver new models of care. The priority areas for the New Care Models program are:  
  - multispecialty community providers  
  - integrated primary and acute care systems  
  - enhanced health in care homes  
  - urgent and emergency care  
  - acute care collaborations  

A key pillar of the New Care Models programme is that it is driven at the local level, with national support from the NHS. The organization has further codified the ways in which it will provide central support to the vanguards, which include 1) helping vanguards design their models; 2) supporting vanguards with evaluation; 3) work on commissioning and provision policies; 4) help develop governance and organizational models; 5) empower patients and communities; 6) harnessing technology; 7) redesigning the workforce; 8) local leadership and delivery and 9) communication and engagement. Additional details and framework for these key enablers of transformation can be found in Appendix D. |
A number of knowledge translation tools and resources have been created by the NHS to inform stakeholders of the New Care Model’s work and to support the vanguards. Notably, an evaluation strategy has been published by the NHS (NHS England, 2016). Only into its second year, the New Care Models programme is only beginning to have early results of some of its vanguards initiatives.

### Health Strategy, Ministry of Health, New Zealand

The Ministry of Health in New Zealand (NZ) has undertaken significant efforts in the past few years to improve the delivery of health care, including cancer care. In 2014 the Ministry of Health released the *New Zealand Cancer Plan – better, faster, cancer care 2015-2018* (the Cancer Plan), which identifies expectations of what improvements should be made for all New Zealanders, for cancer patients and for health professionals. This includes meeting the national target that patients will receive cancer treatment within 62 days of urgent referral. More recently, in 2016 the Ministry of Health released a renewed Health Strategy and roadmap that sets the vision for healthcare in the country from 2016-2026 (Minister of Health, 2016). Within NZ’s Cancer Programme, some initiatives have included standards of care for specific tumour types, cancer information and supportive care – including a Cancer Nurse Coordinator initiative and Psychological and social support and achievement of the Faster Cancer Treatment health target.

There are a number of actions as outlined in this strategy that relate specifically to the current work being done by CCO’s Models of Care program, including:

- Ensuring the right services are delivered at the right location in an equitable and clinically and financially sustainable way
- Enabling all providers to add the greatest value by providing the right care at the earliest time, fully utilizing their skills and training
- Involve health and other social services in developing shared care for older people with high and complex needs in residential care facilities or those needing support at home
- Align funding across the system to get the best value from health investment.
- Continue to develop the application of the social investment approach to health investment with the country’s district health boards. Consider using this approach to improve overall outcomes for high-need priority population, while developing and spreading better practices.

### Health Networks, Government of Western Australia, Australia

In Western Australia (WA), Health Networks have been to develop evidence-based models of care for several areas of healthcare, including cancer. Although the Health Networks do not fund care, they can influence planning, policy and practice of healthcare planners, funders and providers. Unlike CCO’s MOC program’s focus, which is on finding and enabling specific models of care within cancer care to promote value for money, the models of cancer care outlined in the Health Networks outline a model of how the cancer system is organized, and its values. For cancer care, the Health Networks proposed model includes recommendations on how to integrate cancer services with other components of the healthcare system, the development of evidence-based guidelines, improving on access, a system approach to research and clinical trials, strengthening the education on cancer; developing referral pathways and actively involving patients in decision-making for their care (Department of Health, Government of Western Australia, nd).

The Health Networks have found that there have been many accomplishments resulting from the models of care (including non-cancer models), including better planning of new services and workforce development. Moreover, many of the models have also focused on changing the setting of care, particularly for people living in rural or remotes areas, and to vulnerable patient populations. The vast majority of all the models developed are rated as having ‘partial implementation’. There have been many barriers noted to more fully implementing the models of care, including (Department of Health, Government of Western Australia, 2015):

- Lack of dedicated budget to ensure comprehensive change
- Models are being implemented in a complex and dynamic healthcare system, with constant advances to technology and treatment
- More systemically available and linked data sets
- Culture shift towards behaviour change
Healthcare funding and reimbursement models as a lever for change

Reimbursement of physicians and other healthcare providers varies between jurisdictions, and funding mechanisms can present significant challenges in trying to change models of care. In many healthcare systems, money to fund the healthcare system is organized into distinct budgets with different oversight bodies. Yet, fragmented funding buckets is a common barrier to the spread and sustainability of new models of care and coordinated health systems (McCarthy, Ryan, & Klein, 2015; World Health Organization, 2002; Denis, Davies, Ferlie, & Fitzgerald, 2011; World Health Organization, 2002; The Change Foundation, 2010).

At the same time, changing reimbursement models can be used as a lever to incentivize healthcare providers to change a model of care. The Change Foundation, an organization dedicated to evolving the healthcare system by better engagement of patients, families and care providers, noted funding mechanisms as an important tool for change for system-wide impact (The Change Foundation, 2010). Changing reimbursement models has been a priority within healthcare reform in the United States, with many organizations exploring different options. It is noted that almost all payment model reforms found in the United States refer to reimbursement of clinicians, not other healthcare providers, such as nurses, paramedics, and social workers. While an examination of all reimbursement models is well beyond the scope of this scan, select reimbursement models from various jurisdictions that are meant to incentivize and facilitate healthcare improvement, including changes to models of care, are presented below.

<table>
<thead>
<tr>
<th>Reimbursement Model</th>
<th>Model Description</th>
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<tr>
<td>Alternate Funding Plans (AFP), CCO</td>
<td>AFPs are special payment agreements between a group of physicians and the Ministry of Health and Long-Term Care, outside the conventional fee-for-service structure in Ontario, and can also include other organizations such as a CCO or hospitals. AFPs have been established with CCO for surgeons and medical oncologists.</td>
</tr>
<tr>
<td>Oncology Care Models (OCM), United States</td>
<td>The OCM is a 5-year project from the Center for Medicaid and Medicare Innovation (CCMI) meant to encourage change and healthcare innovation via new funding incentives to its participants who provide chemotherapy to Medicare/Medicaid recipients over a 6 month period (Centers for Medicare &amp; Medicaid Services, 2016). The OCM relies on traditional fee-for-service reimbursement but the model additionally incorporates other financial incentives such as performance-based incentives for decreasing costs or achieving certain quality measures, and bundled-monthly patients. Under the OCM, there are a number of criteria that participants must adhere to, such as providing access to a clinician 24 hours a day, 7 days of week; using of electronic health record technology; providing patient navigation; using data for quality improvement; developing a care plan that aligned with the Institute of Medicine Care Management Plan, and treating patients with therapies aligned with clinical guidelines. OCM participants will be assessed over a number of quality measures (e.g. ED visits and hospital admissions, use of PROs, etc.).</td>
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<tr>
<td>American Society of Clinical Oncology (ASCO) Patient Centered Oncology Payment (PCOP) Model, United States</td>
<td>In 2015, ASCO released a proposed model for a physician reimbursement model (ASCO, 2017). The PCOP was developed with the goals of improving patient-centred care, and providing more appropriate care. The model includes additional evaluation and measurement billing codes that are currently not in the fee schedule (e.g. treatment</td>
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planning, care management during treatment and active monitoring). Additional options of the model also allow physicians to be compensated through new consolidated sets of billing codes, or through bundled payments for care. Healthcare provide criteria for participating in the PCOP models include accountability in the areas of 1) avoiding complications after cancer treatment; 2) using evidence-based guidelines to provide care, prescribing drugs, use of imaging tests; 3) using evidence-based guidelines to provide end-of-life care and 4) providing care that aligns with accepted quality measures.

Salaried reimbursement: Kaiser Permanente
In some healthcare systems clinicians are paid a set salary, thereby removing fragmented funding mechanisms for different care providers (The Change Foundation, 2010). The capacity for health systems administrators to make changes in the models of care delivery is increased in integrated systems when all care providers and staff, including clinicians, are considered employees and paid from the same pool of money. One such integrated health system is Kaiser Permanente in the United State, which has been noted as being an effective and efficient healthcare system, with desirable outcomes such as quicker access to primary care, specialist care and lower hospital admission wait times compared to the NHS (Feachem, Neelam, & White, 2002). A recent report suggested that Canada could learn from Kaiser’s funding mechanism to align incentives to reward providers for meeting care standards, rather than seeing a high volume of patients (Townsend, 2014). While it is too simplistic to credit Kaiser’s entire success to its ability to control and manipulate funding, it has been noted as being a key component to creating desired changes in a healthcare system.

A private-public capitated payment system: The Alzira Model
A capitated payment system has been implemented in Alzira, Spain, as a public-private investment partnership (World Health Organization, 2009). In this model, healthcare is both a public and private responsibility. Hospitals are public institutions, but the provision of healthcare is managed entirely by a private entity. The government funds healthcare with set capitated payments, and it is up to the private company as to how to spend those funds to provide care. This model was first implemented in the Alzira region in Spain in 1999 and has since spread to other nearby regions (World Health Organization, 2009). Survey data shows high patient satisfaction with the care they received in Alzira, and the operating costs of the privately-managed hospital in Alzira is approximately 20-25% lower than similar publicly-run institutions in Spain (World Health Organization, 2009).

Frameworks to help facilitate the process of implementing changes to models of care
A handful of frameworks have been developed by government bodies, agencies and non-profits to help implement changes to models of care. These frameworks outline the processes to be considered when developing and implementing changes to a model of care.

<table>
<thead>
<tr>
<th>Organization</th>
<th>Jurisdiction</th>
<th>Framework</th>
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<tbody>
<tr>
<td>CCO</td>
<td>Ontario</td>
<td>The Models of care process outlined by CCO’s Models of Care program (Cancer Care Ontario, 2016):</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1. <strong>Plan:</strong> Work together with patients, families, healthcare administrators and providers to identify innovation new models of care that are person-centred and sustainable.</td>
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<tr>
<td></td>
<td></td>
<td>2. <strong>Implement:</strong> Test new models, or spread successful existing ones.</td>
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<td></td>
<td></td>
<td>3. <strong>Evaluate:</strong> Evaluate and continuously improve the models.</td>
</tr>
</tbody>
</table>
4. Sustain: Address regulatory funding and policy issues to ensure the implementation and sustainability of new models.

<table>
<thead>
<tr>
<th>NSW Agency for Clinical Innovation</th>
<th>New South Wales, Australia</th>
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<tr>
<td>The process of developing a model of care, as outlined in the NSW ACI Framework (NSW Agency for Clinical Innovation, 2013):</td>
<td></td>
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<tr>
<td>1. <strong>Project Initiation</strong>: Identify an area of need, build a case for change and obtain sponsorship to proceed.</td>
<td></td>
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<tr>
<td>2. <strong>Diagnostic</strong>: Define the problem – understand the root cause to treat the real problem, not just the symptoms.</td>
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</tr>
<tr>
<td>3. <strong>Solution Design</strong>: Develop and select solutions. Create and document the MOC.</td>
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<tr>
<td>4. <strong>Implementation</strong>: Support the health system to execute the changes needed to implement the MOC.</td>
<td></td>
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<tr>
<td>5. <strong>Sustainability</strong>: Optimize use of the MOC, monitor the results and evaluate the impact.</td>
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<thead>
<tr>
<th>Queensland Health, Government of Queensland</th>
<th>Queensland, Australia</th>
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<tbody>
<tr>
<td>Queensland Health identified four main phases in the process of changing models of care (Queensland Health, 2000):</td>
<td></td>
</tr>
<tr>
<td>1. <strong>Define the problem</strong>: Identify the issues with the current model.</td>
<td></td>
</tr>
<tr>
<td>2. <strong>Community profile</strong>: Determine the people who the model is meant to serve, and their health needs.</td>
<td></td>
</tr>
<tr>
<td>3. <strong>Project plan and implementation</strong>: Identify possibly solutions, consult with key stakeholders, develop risk management plan.</td>
<td></td>
</tr>
<tr>
<td>4. <strong>Evaluation</strong>: Establish evaluation plan from the beginning.</td>
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</table>

There are many commonalities across these frameworks. Most notably, all three frameworks explicitly mention the need for evaluation in models of care (evaluation will be further discussed on page 24). Although all frameworks (either in the summary above, or in their full document) discuss the need to involve patients and families, only the Queensland framework defines understanding the recipients of the model as a distinct step. Also of interest, the initiation of the project is different for the frameworks. The CCO framework begins with horizon scanning to identify new models of care, while the other two frameworks begin with identifying problems with the status quo.
SECTION II: COMMON CHARACTERISTICS OF SUCCESSFUL MODELS OF CARE

Patient values and experiences should be embedded in new models of care

Interviews and literature show that keeping patient values and experiences integral to the planning and development of models of care is key to the model’s success (McCarthy, Ryan, & Klein, 2015; Denis, Davies, Ferlie, & Fitzgerald, 2011; NSW Agency for Clinical Innovation, 2013; Advisory Panel on Healthcare Innovation, 2015). The World Health Organization (WHO) notes that in addressing chronic diseases, which cancer is increasingly being considered, one of the common problems with changes to models of care is the failure to empower patients (World Health Organization, 2002).

Box 1. An example of a model of care focused on patient values – Elder care in Norway

An annual index ranking almost 100 countries from around the world on the well-being of their senior population has consistently ranked Norway in the top performers (HelpAge, 2015). While ranking is created based on a number of factors (e.g. health, social, economic, public transit), their health re-ablement model has been noted by as an innovative model in particular (Bigognano, 2016).

The re-ablement model aims to support seniors to be able to self-manage their own care and well-being. The model relies on a team of healthcare providers, such nurses, physiotherapists, occupational therapists and social workers, to go into a patient’s home and work with them intensely to support them in increasingly being able to take care of themselves. While the model may seem to be resource intensive, it allows people to be living at home instead of being in nursing homes or similar settings, where they will likely be more dependent on care givers indefinitely. A recent analysis from a randomized-controlled trial found that compared to usual care, the re-ablement model was more cost-effective (Kjerstad & Tuntland, 2016). Patient outcomes and satisfaction were greatly improved compared to usual care, and delivered at a lower cost.

The re-ablement model has been similarly implemented in other jurisdictions around the world, including Australia, Denmark, Sweden, the UK and New Zealand (Kjerstad & Tuntland, 2016).

There is a need to be cognizant that the terminology used when discussing models of care can be off-putting to patients. Patients and the general public are more likely to be against prioritizing funding within healthcare compared to healthcare providers or politicians, and surveys from Sweden show that the majority of patients agree with the statement “public health services should always provide the best possible care, irrespective of cost” (Arvidsson, Andre, Borgquist, Lindstrom, & Carlsson, 2009; Rosen & Karlberg, 2002). Similar findings were echoed by the patients interviewed for this scan, who stated that while they understood what is meant by “value for money” and why it is important, they noted strongly nonetheless that describing the work in this way invokes the notion of taking care away when it is needed most. At the same time, studies have also shown that when the public is properly engaged, they have a clear understanding these concepts. Based on a recent public engagement on drug funding in Canada, researchers found that the participants, who were members of the general public, were supportive of the idea of having a funding limit, and that not all drugs could be funded – there was even general support for the idea of drug disinvestment in certain cases (Peacock, Bentley, Regler, & Burgess, 2015).
Strong evidence is needed to support a new model of care

Evidence for the new model of care is important if new proponents of the change are to be acquired (McCarthy, Ryan, & Klein, 2015; Denis, Davies, Ferlie, & Fitzgerald, 2011). Not only does strong evidence in support of a new model of care ensure that efforts and public dollars are being spent appropriately, the literature also finds that innovations that are known to be effective or cost-effective are more likely to be adopted by organizations (Greenhalgh, Robert, MacFarlane, Bate, & Kyriakidou, 2004). Many interviewees echoed this finding, noting that evidence showing that a new model of care has the potential to result in cost-savings to the system is particularly compelling for system administrators and funders. As an example, this was the case with the Interprofessional Spine and Assessment and Education Clinics (ISAEC), where strong evidence of effectiveness and cost-savings resulted in media attention and Ministry funding (see Box 3).
While the academic and grey literature can sometimes provide the evidence needed to support a model, many interviewees noted that there is not always a strong evidence base, particularly where innovation is desired. This can result in difficulties when it is clear that change is needed in an area of care, but there is limited evidence as to the solution. In these cases, modelling and simulation data can be particularly useful in projecting outcomes and costs. In Canada, OncoSim is a modelling tool developed and maintained by the Canadian Partnership Against Cancer (CPAC) (Canadian Partnership Against Cancer, 2017). Using real-world data that is input into the model, OncoSim projects outcomes such as incidence, mortality and cost-effectiveness. OncoSim has currently developed models for colorectal, lung and cervical cancers, with other cancer sites in development. As an example of projections done by OncoSim, the model was used to project cost-effectiveness of integrating smoking cessation within a lung cancer screening program using low-dose CT scans. Based on inputs including Canadian demographic characteristics, risk factors, cancer management and program parameters (e.g. participation rate, growth of participation growth, and costs of smoking cessation), OncoSim found that smoking cessation with organized lung cancer screening programs would be cost-effectiveness, even if multiple quit attempts are needed (Evans, et al., 2017).
Having strong leadership and champions promotes a culture of innovation

A culture receptive to change was repeatedly mentioned by key informants as a critical component for implementing changes to models of care. By having strong buy-in from the leaders at an organization, including senior executives and administrators, clinicians and other leaders, the work for a model of care can be better supported and enabled (Greenhalgh, Robert, MacFarlane, Bate, & Kyriakidou, 2004). One study on the spread of a patient safety program went so far as to note that having agreement on change across senior physicians and nurses is the most critical factor in facilitating change in an organization (Dixon-Woods, Leslie, Tarrant, & Bion, 2013). Creating a culture receptive to change, particularly among its leaders, was critical to the success of Jönköping County in Sweden, as outlined below.

**Box 4. Quality Improvement in Jönköping, Sweden - Creating a center for innovation and learning**

In Sweden, the work done in improving the efficiency of healthcare system in Jönköping county has led it to being one of the best-ranked on many healthcare measures in the country (Bodenheimer, Bojestig, & Henriks, Making Systemwide Improvement in Health Care: Lessons from Jönköping County, Sweden, 2007; Baker, et al., 2008). Moreover, the quality improvement work in Jönköping have not incurred additional costs. One estimate states that over a decade, these changes have resulted in over $5 billion in savings in the county (Baker, et al., 2008).

Creating a culture, particularly at the senior executive level, that is receptive to change has been critical to Jönköping’s success. This has been exemplified by the centre for learning and innovation called Qulturum in 2001, with the mission of supporting improvement of health services in the county. The scope of Qulturum is at the system-level and Qulturum staff focus solely on quality improvement work, not clinical or administrative details. In addition to Qulturum, consistent leadership at the county has allowed for a stable vision for the county’s quality improvement work. Moreover, the leadership in Jönköping have worked to develop a common vision for changes for the county – for example, by attending quality improvement conferences as a team, all members of the country’s leadership left with a common vision and understanding of what they had gleaned. Below are some of the examples of Jönköping’s successes that relate to models of care work:

- **Reducing wait times:** After the Swedish government announced targets for access to primary care and specialty care of 7 days and 90 days respectively, Jönköping made timely access to care a priority. The work done by the county and Qulturum resulted in the vast majority of patients meeting these targets. This was achievable in part by reducing inefficiencies in the system, including ensuring proper human health resource planning, with care providers such as nurses and occupational therapists taking on certain tasks instead of the physicians.

- **The Esther Project:** This initiative uses Esther, a fictional patient with high healthcare needs, to help guide improvements to senior care in the county. By mapping Esther’s interactions through the healthcare system, and by interviewing real patients like Esther, healthcare professionals implemented a number of changes to the system. These included redesigning the patient intake model, implementing team-based telephone consultations and a focus on educating patients on self-management skills. Overall, estimates show that the Esther project resulted in a reduction of hospital admissions by over 20%, redeploying resources to the community, reduction in wait times to see specialist and a reduction in hospital stay for health failure by 30% (Baker, et al., 2008).
New models of care need to be multi-disciplinary

Key informants repeatedly said that one of the reasons that new models of care are needed is that the current healthcare system is antiquated and siloed. Interviewees noted that breaking down siloes are needed throughout the entire process of implementing a new models of care, and that planning and implementation are most effective with many different types of people are involved, including clinicians, nurses, front-line staff, and system administrators. These findings are also strongly supported by literature. In a recent Commonwealth Fund report, McCarthy et al. find that interdisciplinary teamwork that includes trusting relationships and defined roles to be a key components of implementing new models of care for high-needs patients (McCarthy, Ryan, & Klein, 2015). Similarly, Davidson et al. note (Davidson, Halcomb, Hickman, Phillips, & Graham, 2006) that optimal models of care development should be “multifaceted and multidisciplinary, incorporating the best available evidence from patient-centred research with the needs and preferences of individuals, communities, health professionals, policy makers, funding agencies, professional organizations and underpinned by sound theoretical and conceptual principles”. A 2014 study examining from the Conference Board of Canada found that interprofessional primary care teams could potentially result in approximately $3 billion in savings (direct and indirect costs) from diabetes and depressions complications alone (The Conference Board of Canada, 2014).

In addition to ensuring multi-disciplinary input in the planning process, the changes proposed by some models of care are breaking down silos by expanding the roles of healthcare providers. The Advisory Panel on Healthcare Innovation has found that health system integration and workforce modernization is a key area where improvement is needed to promote healthcare innovation in Canada (Advisory Panel on Healthcare Innovation, 2015). Notably, many of CCO’s MOC program’s initiatives are in this realm (for more information see pre-reading, Current State Assessment). Many interviewees, as well as the literature, note that in order for labour substitution to be successfully, sufficient training must be provided to the support healthcare providers in the new roles being assigned (McCarthy, Ryan, & Klein, 2015). Beyond just the competencies and skills to take on a certain task however, staff also need to be empowered by ensuring the role fits appropriately with the role of the position and also of the organization, that sufficient autonomy is provided, and that they can see the impact of the change (Jeffcott, 2014).

Box 5. Example of care providers in new roles: Paramedic Palliative Care Delivery

An innovative initiative from Nova Scotia and Prince Edward Island called ‘Paramedics Providing Palliative Care at Home’ aims to train paramedics to deliver palliative care to patients in their home. Paramedics who are enrolled in the projects receive special training and support, and patients who are registered with the program are entered into a data which the paramedics can access. The program increases the likelihood that patients will receive care in accordance to their wishes, including allowing patients to remain at home. To date, there have been approximately 1,200 paramedics who have received palliative care training and over 900 patients who have registered with the program. Results show that about a third of patients in PEI and about half of patients in Nova Scotia did not have to be transported to hospital after receiving care from the specially trained paramedics (Arab, Carter, & Harrison, 2015).

Similar EMS programs to extend the role of paramedics have also been implemented by Alberta Health Services across the province, as well as in Ontario (Alberta Health Services, 2015; Ministry of Health and Long-Term Care, 2014).
Technology and IT systems need to keep pace to support new models of care

Considering the overlap between the definitions of models of care and innovation (see section 3.a.) it was noted by interviewees that having capable IT systems and tools are critical to be able to support new models of care. There were many examples that utilized an IT solution in improving the way care is provided, with the goal of improving the quality of care from a patient outcome and experience, provider experience and system perspective. Examples of some of these initiatives can be found in the table below.

<table>
<thead>
<tr>
<th>Name</th>
<th>Jurisdiction</th>
<th>Brief Description</th>
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<tbody>
<tr>
<td>Rapid Access to Consultative Expertise (RACE)</td>
<td>British Columbia</td>
<td>The RACE model in British Columbia began as a cardiology project in 2009, but has now spread across the province (Milne, Tepper, &amp; Pendskarkar, 2017). In this model, family physicians can call a central phone line during regular weekday business hours to request a phone consult with a specialist. There were fee codes developed for both the family physicians, as well as the specialist. An evaluation of the pilot found that the family physician’s call was usually returned within 10 minutes and that both family physicians and specialists reported high satisfaction with the initiative. In terms of outcomes, the pilot resulted in a significant reduction in the number of face-to-face consults needed, and also a reduction in emergency department visits.</td>
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<tr>
<td>Specialist LINK</td>
<td>Calgary</td>
<td>Specialist LINK has recently been started in Calgary (Specialist LINK, 2017). Similar to RACE, Specialist LINK connects family physicians and specialists in real-time using a central telephone line. The project was first piloted in 2014 for GI, and has since expanded to different disease areas. The line is open to all physicians and nurse practitioners in Calgary and the surrounding area.</td>
</tr>
<tr>
<td>Champlain BASE eConsult Service</td>
<td>Ontario</td>
<td>The Champlain BASE eConsult Service (Champlain BASE eConsult, n.d.) is another example an initiative facilitating consultations between healthcare providers. Unlike RACE or LINK, the BASE initiative facilitates e-consultations rather than telephone consults. Family physicians complete an electronic form with their question and relevant patient information (including attaching any relevant test results) and a specialist will access the service and respond on the platform within a week.</td>
</tr>
<tr>
<td>Telehealth for palliative care</td>
<td>Northern Alberta</td>
<td>A pilot project funded by the Alberta government examined the provision of palliative and supportive care via videoconferencing from a multidisciplinary team in Edmonth to cancer patients in rural and remote areas of Alberta (Watanabe, et al., 2013). An evaluation of the pilot study found that improvements in the patient-reported symptoms, decreased cost per patient visit, and high patient and provider satisfaction. The initiative is now being funded as a core service.</td>
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<tr>
<td>Virtual Care Programs</td>
<td>Canada</td>
<td>There are some private virtual care organizations that exist. These programs typically work by providing individuals’ access to healthcare providers such as nurses and doctors to describe their symptoms, and receive diagnoses and prescriptions. These services may charge individuals per ‘visit’, or for a set</td>
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</table>
Membership fee. Some examples of virtual care programs include Maple, Akira, and Dialogue.

Even for models of care where technology is not at the core of the model, strong IT systems have a positive impact on its implementation (Greenhalgh, Robert, MacFarlane, Bate, & Kyriakidou, 2004). McCarthy et al. note that having effective IT systems that can ensure smooth and secure access to patient information, care management and remote monitoring is needed in successfully implementing new models for care (McCarthy, Ryan, & Klein, 2015). For example, CancerCare Manitoba’s Transitions in Care program transitions cancer survivors from receiving follow-up care from their oncologists to their primary care provider (similar to CCO’s Well Follow-Up initiative), which has been successfully implemented for multiple cancer sites (Box 6). However, one of the main barriers in the implementation has been the system’s inability to automatically pull patient information from EMR records to the Transitions in Care program, resulting in physician time being spent manually entering data, or delegating to another healthcare provider to do so.

**Box 6. Transitions in Care program, CancerCare Manitoba**

The Manitoba transitions in care program works to transition patients, once they have finished their active treatment and have no more recurring disease, back to their primary care provider. The program began 2011 with a grant from the Canadian Partnership Against Cancer (CPAC) focused only on colorectal cancer patients, but the program has since expanded to 5 different disease sites. The transition program consists of 3 main components. The first component is information that is sent to the patient’s primary care provider with information specific to the patient’s follow-up care, such as information on what tests need to be done, and when. The second component is information about the patient’s cancer and their treatment history, which includes pathology reports and the types of surgery, radiation and systemic treatment received. The third and final component is information for the patient about their follow-up care and recovery.

The Agency notes that some enablers to the program have included care providers concretely seeing the improvement in patient outcomes, having the literature evidence to support it, as well as having key champions (clinical and non-clinical) at

Another area where IT may support models of care is from a data perspective. An evaluation from a model of care initiative in Nova Scotia found that administrative data that was either not available or not accessible at an institutional level, even despite noted ongoing and “intensive” efforts to do so (Tomblin Murphy, Alder, MacKenzie, & Rigby, 2010), thus creating challenges to measuring outcomes as well as simulation modeling of HHR demand. In order to ensure the evidence is available to accurate measure and make the case for change, health systems will need to ensure ongoing and ease of accessibility of data, particularly at the institutional level where quality improvement processes actually occur (Tomblin Murphy, Alder, MacKenzie, & Rigby, 2010).

**Evaluation & Sustainability**

As previously noted, the evaluation of models of care is important to ensure its successful implementation. The themes found on evaluation and sustainability were closely linked, and the result are presented together in this section.
Evaluation and sustainability plans need to be established from the onset and be an iterative process
Evaluation and sustainability of a model can often be an afterthought to the planning and implementation of model, and this has been noted as one of the reasons why pilot initiatives fail to spread (Bevan, 2016; Jeffcott, 2014). The literature overwhelmingly highlights the importance of establishing an evaluation plan right from the beginning of planning changes to models of care (NSW Agency for Clinical Innovation, 2013; Queensland Health, 2000). By incorporating evaluation right from the beginning of implementation, lessons learned can be implemented as an ongoing iterative process. Moreover, having an evaluation plan and integrate evaluation into the initiative from the onset may prevent the need to rely on routinely collected administrative data, which can have issues in accessing or using (Tomblin Murphy, Alder, MacKenzie, & Rigby, 2010). Many interviewees also noted that implementing a new model in small, manageable chunks was useful in creating an opportunity to evaluate a small-scale implantation, and allowing time to incorporate lessons learned into the implementation in other jurisdictions. Moreover, it is partly the evidence that may be generated from a pilot or initial implementation of a project that may create a compelling case to convince other jurisdictions to adopt the model as well. However, given appropriate evaluation and the desire to incorporate lessons learned, even ‘unsuccessful’ models can help improve the models of care in our cancer system.

Box 7. The Virtual Ward at Women’s College Hospital, Toronto
The virtual ward is a model of care designed to better support patients who are at high-risk of being readmitted to hospital. In this model, a team of care providers, including physicians, nurses and care coordinators, cares for a patient in their home for up to 2 months after they are discharged from hospital. Evaluation of the model using a randomized trial however, found that patients who were seen in the virtual ward had a similar readmission rate compared to those who received usual care (Dhalla, O’Brien, & Morra, 2014). Since this study, issues were identified that may have contributed to the findings, including insufficient consultation with primary care in the development and implementation of the model, and having eligibility criteria for the ward that was too wide. To address these issues and to improve the model, a redesign process with various stakeholders, including primary care was carried out, and guidelines were created to be more selective in the patients admitted to the ward to limit it to those that would be most likely to benefit.

Economic arguments are especially critical
In order for new models of care initiatives to be supported and sustained, interviewees repeatedly discussed the need to have strong evidence support the model prior to implementation, particularly economic evaluation.

Some interviewees noted that when considering initiatives that are meant to improve the sustainability of the cancer system, there can be a misconception that no additional funds can be allocated to the initiative. In reality, most new initiatives will at minimum require additional financial and HR resources to get started and likely on an ongoing basis as well. However, cost-effectiveness analysis done both pre- and post-implementation can show that the investment of funds in the initiative will ultimately save the cancer system money. For example, the Hospital at Home model described in Box 8 describes providing care in the patient’s home, which incurs costs to implement, but that ultimately resulted in cost-savings to the system.
Funding and ongoing resources are often needed to sustain a model

Literature has noted that the sustainability of changes in care delivery requires continue support from government (or other healthcare funders) (Tomblin Murphy, Alder, MacKenzie, & Rigby, 2010). Although models of care should be cost-effective initiatives in order to improve the sustainability of the system, some initiatives may require additional resources (money, staff, etc.) to run, even if they are ultimately result in lower costs for an institution. Appropriate planning is needed to ensuring the staff have the appropriate time to take on new work (NHS Modernisation Agency, 2005). A survey of individuals involves in Western Australia’s Modes of Care program found that while the vast majority agreed that the models of care promoted collaboration and the delivery of evidence-based care, the majority also felt there was insufficient funding and resources (including human health resources, facilities and infrastructure) to effectively implement the models of care (Department of Health, Western Australia, 2012). In 2015, an advisory panel on healthcare innovation appointed by the Canadian federal government released their report, *Unleashing Innovation: Excellent Healthcare for Canada*, and found that one key challenge to the sustainability and scale-up of healthcare innovation is lack of dedicated funding or other mechanism to drive innovation across an entire system (Advisory Panel on Healthcare Innovation, 2015).

Box 8. Hospital at Home model, Presbyterian Healthcare Services’, United States

The Hospital at Home program has been implemented at Presbyterian, a large integrated healthcare delivery system, since 2008 (Klein, Hostetter, & McCarthy, 2016). In this model, patients who fit a select set of criteria, receive care that would typically be provided in a hospital at home instead. Hospital staff ensure that the patient’s home is appropriate to receive care (e.g. basic utilities). Patients will receive visits from physicians, nurses and other healthcare providers to treat their condition, and similar to a stay in hospital, patients are ‘discharged’ as they would be in the hospital setting once their condition has been addressed, with follow-up care at home being scheduled as needed.

Results found that the initiative resulted in shorter length of stay, but increased face-to-face time with physicians. Patients enrolled in the Hospital at Home program had fewer readmission, lower mortality, lower fall rate, and moreover, the cost per patient of the Hospital at Home program were calculated to be 19% lower than the traditional hospital model (Klein, Hostetter, & McCarthy, 2016).
Role of a central body

There are many different types of bodies working to enable new models of care (whether or not they used the term ‘model of care’ specifically), including government departments, non-profit health organizations and health charities and academic institutions. Descriptions of a number of organizations working on models of care, primarily in the role of acting as a central hub amongst other bodies, can found in the table below.

When asked about the role of a central body, such as Cancer Care Ontario, interviewees overwhelming stated that implementation and ownership of new models of care initiatives belongs not with the central body, but with the local/regional institution. At the same time, interviewees noted there was a significant and important role that needs to be played by a central body, including:

- Providing funding for care or specific initiatives
- Convening stakeholders
- Develop and share tools and resources to support work in regions
- Provide evidence-based guidelines and best practices
- Support evaluation efforts, including cost-effectiveness evaluation
- Address policy barriers and gaps, lobbying the Ministry where necessary
- Set the goals/aims of care and measuring progress
- Building staff/provider capacity

Box 9. Addressing high-risk patients in The Edmonton Zone

The Edmonton Zone in Alberta implemented five initiatives to better address the needs of high-risk patients, such as people who are homeless, unstably housed and high users of acute care (Canadian Foundation for Healthcare Improvement, 2015). The initiatives included connecting people who use substances or have poor mental health with community support; reducing emergency department (ED) visits among home care clients; addressing needs of women who use substances who may be pregnant; consolidating primary care and reducing ED visits by connecting people with primary care for wound care. Through these initiatives, the cost per patients reduced dramatically, in one project from $7,300 per month to less than $4,500 per month. These projects have been successful in spreading, from 5 clients in 2013 to more than 1,800 two years later. Moreover, they have been spread to other jurisdictions in the province via primary care networks, and have been shared with jurisdictions across the country and internationally via conferences, and through the IHI network.
<table>
<thead>
<tr>
<th>Name</th>
<th>Jurisdiction</th>
<th>Type of organization</th>
<th>Brief Description of models of care work</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cancer Care Ontario</td>
<td>Ontario</td>
<td>Government agency</td>
<td>See page 14.</td>
</tr>
<tr>
<td>Centre for Medicare &amp; Medicaid Innovation</td>
<td>United States</td>
<td>Government</td>
<td>See page 14.</td>
</tr>
<tr>
<td>New South Wales Agency for Clinical Innovation (ACI)</td>
<td>New South Wales, Australia</td>
<td>New South Wales government agency</td>
<td>The ACI partners with clinicians, consumers and managers to redesign better healthcare. They advise and provide support to researchers and healthcare administrators on planning, development and adoption of healthcare innovation, support evaluation, facilitate knowledge sharing between providers and builds capacity in healthcare professionals for skills such as system redesign, project management and change management (Agency for Clinical Innovation, n.d.).</td>
</tr>
<tr>
<td>Health Networks</td>
<td>Western Australia, Australia</td>
<td>Government</td>
<td>See page 15.</td>
</tr>
<tr>
<td>Allied Health Professions of Queensland</td>
<td>Queensland, Australia</td>
<td>Government</td>
<td>The Office for Allied Health Professions works to redesign models of care, with the aim of maximizing the diverse skills of allied professionals, to improve the cost-effectiveness of the system (Queensland Health, 2017). Queensland Health has also developed frameworks for models of care/change management (Queensland Health, 2000).</td>
</tr>
<tr>
<td>Canadian Foundation for Healthcare Improvement (CFHI)</td>
<td>Canada</td>
<td>Non-profit, funded by Canadian government</td>
<td>The CFHI is funded by the Canadian government with the goal of accelerating healthcare improvement in the country. In order to achieve this, the CFHI works with individual organizations in enable change by providing education, facilitation and coaching, resources and tool and networking. Though the CFHI works in many areas of quality improvement, one of the most relevant topics to the models of care work is the area of value-for-money/efficiency, a topic in which the CFHI work in a number of ways.</td>
</tr>
<tr>
<td>Canadian Partnership Against Cancer (CPAC)</td>
<td>Canada</td>
<td>Non-profit, funded by Canadian government</td>
<td>CPAC works on a wide range of cancer control initiatives from prevention to survivorship and end-of-life. These include engaging in funding research, knowledge translation activities, convening healthcare professionals for knowledge sharing, and creating resources. One particular initiative of note is a now-retired Service Delivery Initiative under the Health Human Resources portfolio (Canadian Partnership Against Cancer, 2010). The portfolio’s goal was to inspire and develop innovate workforce solutions to address increased pressures on the healthcare system. CPAC develop a searchable database to share proven workforce initiatives. While the Service Delivery Initiative and database have since been retired, CPAC continues work</td>
</tr>
<tr>
<td>Organization</td>
<td>Country</td>
<td>Type</td>
<td>Description</td>
</tr>
<tr>
<td>------------------------------------------------------------------------------</td>
<td>--------------</td>
<td>-----------------</td>
<td>------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Ivey Centre for Healthcare Innovation, London, Ontario</td>
<td>Canada</td>
<td>Academic Institution</td>
<td>The goal of the Ivey Centre for Healthcare Innovation is to promote value-based healthcare, using evidence to improve the efficiency of healthcare systems. The Centre works to meet this goal through contract research, outreach to stakeholders and helping to build capacity among physicians and other healthcare providers.</td>
</tr>
<tr>
<td>Centre for the Future of Health, The Conference Board of Canada</td>
<td>Canada</td>
<td>Non-profit</td>
<td>The Centre for the Future of Health is a network, research centre and forum for health system leaders, that is led by the Conference Board of Canada (The Conference Board of Canada, 2017). Members for the centre include public and private healthcare stakeholders, with the goal of conducting research, sharing knowledge and learning about international best practices regarding healthcare innovations.</td>
</tr>
<tr>
<td>The King’s Fund, The United Kingdom</td>
<td>United Kingdom</td>
<td>Charity</td>
<td>The King’s Fund works towards better healthcare for all by research and policy analysis, building capacity among healthcare professionals, convening people to help spread knowledge and promotion better understanding of health and healthy policy. The King’s Fund works in a number of areas, including Service Redesign.</td>
</tr>
<tr>
<td>Institute for Healthcare Improvement, United States</td>
<td>United States</td>
<td>Non-profit</td>
<td>IHI works to drive healthcare innovation and improvement worldwide. The Institute funds and supports to new initiatives, provides ongoing tools and resources to healthcare providers, encouraging knowledge sharing by holding meetings and conferences, building capacity by providing online education and workshops. IHI works with programs to ensure a clear aim, and measurement frameworks are in place prior to starting the initiative, and uses rapid-cycle testing in the field to encourage innovation, and to rely on lessons learned from new initiatives.</td>
</tr>
<tr>
<td>The Commonwealth Fund, United States</td>
<td>United States</td>
<td>Private foundation</td>
<td>The Commonwealth Fund’s goal is to create a high-performing healthcare system, especially for vulnerable populations. They fund research and initiatives that will drive desired policy and practice changes, sharing data and knowledge (e.g. via index, surveys, reports, policy briefs, etc.), and by bringing people together for conferences and meetings. One of the topic areas in which the Fund works is healthcare delivery system reform, including on new model of care, and within this area, the Fund is particularly focused on high-need and high-costs patients</td>
</tr>
<tr>
<td>Institute for Cancer Care Innovation (ICCI), MD Anderson, United States</td>
<td>United States</td>
<td>Academic Institution</td>
<td>The ICCI researches and studies models of cancer care delivery and reimbursement. The Institute has projects looking to drive innovative change in how healthcare is delivered in a number of different areas: value and reimbursement models; time driven activity based costing; patient and provider outcomes; information technology in cancer care; enhanced surgical recovery program; and education.</td>
</tr>
</tbody>
</table>
In March 2017, an update of the NHS New Care Models programme noted the areas in which the vanguards reported that the NHS had provided the most support, as well as areas where more support was needed (National Health Service, 2017):

<table>
<thead>
<tr>
<th>Areas where NHS provided most support</th>
<th>Areas where more support was needed from the NHS</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Evaluation and metric,</td>
<td>• Evaluation and metrics</td>
</tr>
<tr>
<td>• Leadership and system delivery</td>
<td>• Leadership and system delivery</td>
</tr>
<tr>
<td>• Workforce redesign</td>
<td>• Communications and engagement</td>
</tr>
<tr>
<td>• Communications and engagement</td>
<td>• Commissioning, payments and provision</td>
</tr>
<tr>
<td></td>
<td>• Contract development and intensive support</td>
</tr>
</tbody>
</table>

Stakeholders interviewed from Ontario about CCO’s Models of Care program outlined some of the strengths and weaknesses they perceived, which are outlined in the *Strengths, Weaknesses, Opportunities and Threats Analysis* document from the 2017 Programmatic Review pre-reading package.

**Conclusion and Next Steps**

Based on the academic and grey literature, and discussion with key informant interviews, there is agreement that given the projected increase in patients, rapid development of technology and treatments, and evolving expectations of patients and family members, new models of care in health care, including in our cancer system, are prudently needed.

Taking into account the themes presented in this report and the other pre-reading materials (i.e. Current State Assessment and the SWOT analysis), the Programmatic Review event on June 15, 2017 will bring together stakeholders in Ontario and international expertise to share information about MOC initiatives, common barriers and enablers to changing the way healthcare is delivered, and most importantly, to identify solutions moving forward. Given the decentralized nature of cancer care delivery in Ontario, discussion how a central body such as CCO can best support models of care initiatives will be central to the discussions. Coming away from the event, it will be one of the goals of the Review to develop recommendations for CCO’s Board of Directors on how CCO’s Models of Care program can best move forward, catalyzing work that will result better patient outcomes, better patient and provider experiences, and a more sustainable and effective cancer system.
References


Canadian Institute for Healthcare Information. (2002). Canada’s Health Care Providers. Ottawa: CIHI.


Department of Health, Western Australia. (2012). *Results of the models of care survey: A snapshot of how models of care have been implemented in Western Australia*. Perth: Health Networks Branch.


Appendix A: 2017 Programmatic Review Steering Committee and Working Group members

Steering Committee members:

<table>
<thead>
<tr>
<th>Name</th>
<th>Affiliation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Virginia McLaughlin (Chair of Steering Committee)</td>
<td>CQCO, Chair</td>
</tr>
<tr>
<td>Andy Smith</td>
<td>CQCO, Member</td>
</tr>
<tr>
<td>Judie Coutts</td>
<td>CQCO, Member</td>
</tr>
<tr>
<td>Michelle Karker</td>
<td>CQCO, Member</td>
</tr>
<tr>
<td>Garth Matheson</td>
<td>VP, Planning and Regional Programs, CCO</td>
</tr>
<tr>
<td>Robin McLeod</td>
<td>VP, Clinical Programs and Quality Initiatives, CCO and ex-officio CQCO</td>
</tr>
<tr>
<td>Jonathan Irish</td>
<td>Clinical Lead, Models of Care Program, CCO</td>
</tr>
<tr>
<td>Paula Doering</td>
<td>Regional Vice-President, Champlain Regional Cancer Program, CCO, ex-officio CQCO</td>
</tr>
<tr>
<td>Mark Hartman</td>
<td>Regional Vice-President, North East Regional Cancer Program, CCO</td>
</tr>
<tr>
<td>Craig Earle</td>
<td>Program Director, Health Services Research, OICR</td>
</tr>
<tr>
<td>Lynne Nagata</td>
<td>Provincial Planner, Health Workforce Evidence and Innovation Unit, Ministry of Health and Long-Term Care</td>
</tr>
<tr>
<td>Tim Blakley</td>
<td>Manager, Health Workforce Policy Unit, Ministry of Health and Long-Term Care</td>
</tr>
</tbody>
</table>

Working Group members:

<table>
<thead>
<tr>
<th>Name</th>
<th>Affiliation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jennifer Stiff</td>
<td>Director(A), Cancer Quality Council of Ontario secretariat</td>
</tr>
<tr>
<td>Vicki Lee</td>
<td>Policy Lead, Cancer Quality Council of Ontario secretariat</td>
</tr>
<tr>
<td>Jill Ross</td>
<td>Director, Cancer System Quality Improvement Initiative, CCO</td>
</tr>
<tr>
<td>Hasmik Beglaryan</td>
<td>Manager, Models of Care Program, CCO</td>
</tr>
<tr>
<td>Ada Payne</td>
<td>Lead, Models of Care Program, CCO</td>
</tr>
<tr>
<td>Iris Chan</td>
<td>Coordinator, Models of Care Program, CCO</td>
</tr>
<tr>
<td>Julie Gilbert</td>
<td>Manager, Research and Evaluation, Regional Program Development, CCO</td>
</tr>
<tr>
<td>Francis Kromera</td>
<td>Senior Analyst, Models of Care Program, CCO</td>
</tr>
</tbody>
</table>
## Appendix B: List of Interviewees

<table>
<thead>
<tr>
<th>Name</th>
<th>Title</th>
<th>Organization</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Ontario</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>David Barrett</td>
<td>Executive Director</td>
<td>Ivey International Centre for Health Innovation</td>
</tr>
<tr>
<td>Hasnuk Beglaryan</td>
<td>Manager, Models of Care Program</td>
<td>Cancer Care Ontario</td>
</tr>
<tr>
<td>Onil Bhattacharyya</td>
<td>Senior Scientist</td>
<td>Women’s College Research Institute</td>
</tr>
<tr>
<td>Chris Bredeson</td>
<td>Provincial Clinical Lead, Complex Malignant Hematology</td>
<td>Cancer Care Ontario</td>
</tr>
<tr>
<td>Denise Bryant-Lukosius</td>
<td>Assistant Professor, School of Nursing</td>
<td>McMaster University</td>
</tr>
<tr>
<td>Paula Doering</td>
<td>Regional Vice-President</td>
<td>Champlain Regional Cancer Program</td>
</tr>
<tr>
<td>Craig Earle</td>
<td>Program Director, Health Services Research</td>
<td>Ontario Institute for Cancer Research</td>
</tr>
<tr>
<td>Lisa Favell</td>
<td>Director, System &amp; Infrastructure Planning</td>
<td>Cancer Care Ontario</td>
</tr>
<tr>
<td>Julie Gilbert</td>
<td>Manager, Research and Evaluation, RPD</td>
<td>Cancer Care Ontario</td>
</tr>
<tr>
<td>Cory Gosnell</td>
<td>Regional Director</td>
<td>London Regional Cancer Centre</td>
</tr>
<tr>
<td>Mark Hartman</td>
<td>Regional Vice-President</td>
<td>North East RCP</td>
</tr>
<tr>
<td>Nicole Harnett</td>
<td>Project Lead, CSRT</td>
<td>Princess Margaret Hospital</td>
</tr>
<tr>
<td>Jonathan Irish</td>
<td>Clinical Lead, Models of Care program</td>
<td>Cancer Care Ontario</td>
</tr>
<tr>
<td>Jennifer Lounsbury</td>
<td>Director, Cancer Care Operations</td>
<td>Grand River Hospital</td>
</tr>
<tr>
<td>Garth Matheson</td>
<td>Vice-President, Planning &amp; Regional Programs</td>
<td>Cancer Care Ontario</td>
</tr>
<tr>
<td>Robin McLeod</td>
<td>Vice-President, Clinical Programs and Quality Initiatives</td>
<td>Cancer Care Ontario</td>
</tr>
<tr>
<td>Shannon Milroy</td>
<td>Health Economist, Funding Unit</td>
<td>Cancer Care Ontario</td>
</tr>
<tr>
<td>Peter Pisters</td>
<td>President &amp; CEO</td>
<td>University Health Network</td>
</tr>
<tr>
<td>Patricia Pottie</td>
<td>Patient and Family Advisor</td>
<td>Cancer Care Ontario</td>
</tr>
<tr>
<td>Raja Rampersaud</td>
<td>Lead, Provincial ISAEC</td>
<td>Toronto Western Hospital</td>
</tr>
<tr>
<td>Sue Robertson</td>
<td>Regional Vice-President (interim)</td>
<td>Waterloo Wellington RCP</td>
</tr>
<tr>
<td>Jillian Ross</td>
<td>Director, Cancer System Quality Improvement Initiatives</td>
<td>Cancer Care Ontario</td>
</tr>
<tr>
<td>Vicky Simanovski</td>
<td>Director, Regional Program Development</td>
<td>Cancer Care Ontario</td>
</tr>
<tr>
<td>Janice Stewart</td>
<td>Regional Director</td>
<td>Odette Sunnybrook Cancer Centre</td>
</tr>
<tr>
<td>Jonathan Sussman</td>
<td>Chair, Survivorship Advisory Committee</td>
<td>Cancer Care Ontario</td>
</tr>
<tr>
<td>Alexis Wise</td>
<td>Health Advisor and Capital Advisory Manager</td>
<td>MaRS Centre for Impact Investing</td>
</tr>
<tr>
<td>Deanna Wu</td>
<td>Manger, Cancer System and Infrastructure Planning</td>
<td>Cancer Care Ontario</td>
</tr>
<tr>
<td><strong>Jurisdictions outside Ontario</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>David Chambers</td>
<td>Deputy Director, Implementation Science</td>
<td>National Cancer Institute, United States</td>
</tr>
<tr>
<td>Thomas Feeley</td>
<td>Institute Head, Institute for Cancer Care Innovation</td>
<td>MD Anderson, Texas, United States</td>
</tr>
<tr>
<td>Göran Henriks</td>
<td>Chief Executive of Learning and Innovation</td>
<td>Qulturum, Jönköping County, Sweden</td>
</tr>
<tr>
<td>Nathalie James</td>
<td>Clinical Advisor, Cancer Programme</td>
<td>Ministry of Health, New Zealand</td>
</tr>
<tr>
<td>Samantha Jones</td>
<td>Director, New Care Models Programme</td>
<td>NHS England, UK</td>
</tr>
<tr>
<td>Ron Kline</td>
<td>Medical Officer, Oncology Care Models</td>
<td>CMMI, United States</td>
</tr>
<tr>
<td>Jane Lyon</td>
<td>Chief Advisor</td>
<td>Ministry of Health, New Zealand</td>
</tr>
<tr>
<td>Ellen Lukens</td>
<td>Division Director, Specialty Payment Models</td>
<td>CMMI, United States</td>
</tr>
<tr>
<td>Tara Sampalla</td>
<td>Director of Research and Innovation</td>
<td>Nova Scotia Health Authority</td>
</tr>
<tr>
<td>Cody Watling</td>
<td>Continuity of Care Manger</td>
<td>CancerCare Manitoba, Manitoba</td>
</tr>
</tbody>
</table>
Appendix C: Innovation Spread Frameworks


Appendix D: NHS New Care Models Key National Enablers Framework

<table>
<thead>
<tr>
<th>Area</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Designing new care models and enabling spread</td>
<td>Working with the vanguards to develop their local model of care, maximising the greatest impact and value for patients</td>
</tr>
<tr>
<td>Evaluation &amp; metrics</td>
<td>Supporting the vanguards to understand – on an ongoing basis – the impact their changes are having on patients, staff and the wider population.</td>
</tr>
<tr>
<td>Integrated commissioning &amp; provision</td>
<td>Assisting the vanguards to break down the barriers which prevent their local health system from developing integrated commissioning.</td>
</tr>
<tr>
<td>Empowering patients and communities</td>
<td>Working with the vanguards to enhance the way in which they work with patients, local people and communities to develop services.</td>
</tr>
<tr>
<td>1. Harnessing technology</td>
<td>Supporting the vanguards to rethink how care is delivered, given the potential of digital technology to deliver care in radically different ways. It will also help organisations to more easily share patient information.</td>
</tr>
<tr>
<td>2. Workforce redesign</td>
<td>Supporting the vanguards to develop a modern, flexible workforce which is organised around patients and their local populations.</td>
</tr>
<tr>
<td>3. Local leadership and delivery</td>
<td>Working with the vanguards to develop leadership capability and learn from international experts.</td>
</tr>
<tr>
<td>4. Communications and engagement</td>
<td>Supporting the vanguards to demonstrate best practice in the way they engage with staff, patients and local people.</td>
</tr>
</tbody>
</table>