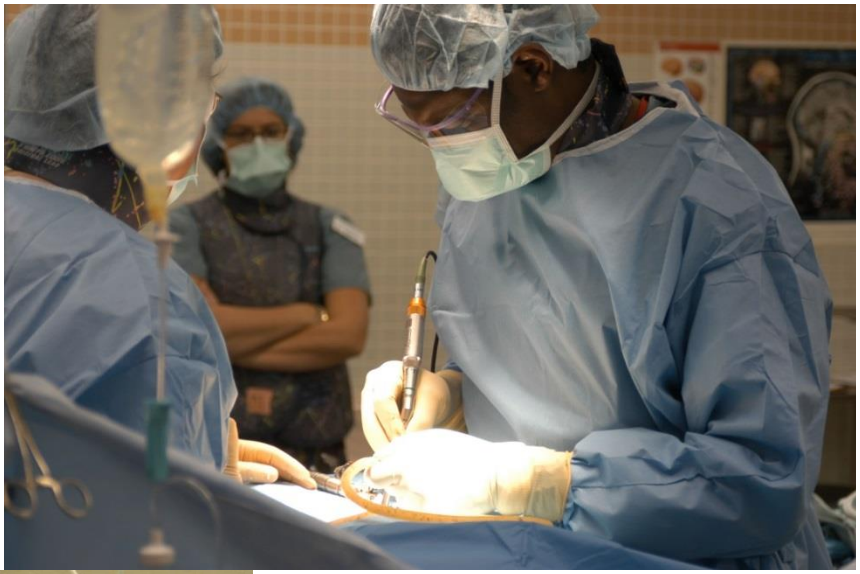
Appropriateness of Care Framework

Patient First



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Appropriateness of Care: Better Care Made Easier

Government of Saskatchewan

Executive Summary

A Framework for Improving Appropriateness of Care in Saskatchewan

The Canadian Medical Association (CMA) has defined Appropriateness of Care as: "The right care provided by the right providers, to the right patient, in the right place, at the right time, resulting in optimal quality care." This definition has been adopted as the vision statement for the Saskatchewan Appropriateness of Care program, with approval from the CMA.

Saskatchewan's health system leaders identified improving Appropriateness of Care as one of the key system priorities in 2013-14 by indicating that a provincial framework would be developed, with the intent that the framework will be broadly applied and widely used by clinicians and health care organizations across the continuum of care. Two ambitious targets have been set:

- By March 31, 2018, 80% of clinicians in at least three selected clinical areas within two or more service lines will be using agreed-upon best practices.
- By March 31, 2018, at least three clinical areas have been deployed care standards and used measurement and feedback to inform improvement at the provincial level.

When patients visit health care practitioners they assume and expect that the care they receive is the best care for their condition. Patients and their families want care that is evidence-informed and clarifies the best approach for treatment options.[1] Physicians want to provide the best care possible for their patients. An appropriate health care service is defined as one for which the "the expected health benefit (increased life expectancy, relief of pain, reduction in anxiety, improved functional capacity) exceeds the expected negative

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[1] From Innovation to Action: The First Report of the Health Care Innovation Working Group Council of Federation; 2012

consequences (mortality, morbidity, anxiety, pain, time lost from work) by a sufficiently wide enough margin that the medication, treatment or procedure is worth doing.[2]

However, at times patients don't always receive the best treatment options. for a variety of reasons, including availability of services, access to care, variation in clinician practices and lack of solid evidence available for clinicians to support best treatment options leading to uncertainty and variation in decision-making. All these factors impact the Appropriateness of Care that patients, clients and residents receive.

Inaccurate research, hasty recommendations, personal bias, lack of currency in education or training, an abundance of information on the internet, and television talk shows promoting the latest fad in health care (often without the rigor of evidence to support the fad) all contribute to overuse, underuse, misuse and variation in health care, or, inappropriate care. Unnecessary or wrong tests, treatments and procedures do not add value and take away from care by potentially exposing patients to harm, and at times, lead to more testing to investigate false positives, adding stress for patients. Additionally, this wastes precious resources within an already stretched health care system, and contributes to increased wait times for patients who really do require the tests and procedures.

Quality improvement initiatives in health care have made significant progress over the past several decades; however, there are still significant areas of opportunity to address Appropriateness of Care. The purpose of the provincial Appropriateness of Care framework is to provide a shared understanding of what Appropriateness of Care means to patients, clinicians, health system stakeholders and the public, and a strategy for the health system to improve and embed Appropriateness of Care within a broad range of patient-centered clinical areas. The framework has been developed based on research on the successes of similar initiatives in several high-performing US-based health care organizations, and aligns strongly with the Canadian Medical Association's Choosing Wisely Canada campaign.

Choosing Wisely Canada, launched in 2014, is a campaign to help physicians and patients engage in conversations about unnecessary tests, treatments and procedures.[3]

"For many years, both physicians and patients have had a 'more is better' attitude. It is time to adopt a 'think twice' attitude to avoid unnecessary and potentially harmful tests, procedures and treatments." *Dr. Wendy Levinson, Choosing Wisely Canada*

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[2] Appropriateness Criteria to Assess Variations in Surgical Procedure Use in the U.S. Elise Larson, Clifford Ko et al JAMA Surgery. December 2011

[3] Choosing Wisely Canada. Canadian Medical Association. Choosingwiselycanada.org

Numerous health care initiatives have been successfully implemented in Saskatchewan, and many more are currently underway. Most of these initiatives fit under the umbrella of Appropriateness of Care and have been implemented without the benefit of using a standard quality improvement methodology. A provincial framework will provide the advantage of offering a standardized approach, supporting a more coordinated provincial effort.

The Appropriateness of Care Framework is depicted in the schematic on page 18, and includes the following components:

- a quality improvement methodology to improve Appropriateness of Care at the clinical practice level and the system structures required to embed Appropriateness of Care into Saskatchewan health care organizations;
- a stakeholder engagement and communication plan;
- a plan that outlines infrastructure requirements for capturing, analyzing and reporting essential data; and
- a toolkit with information to support groups or organizations who want to undertake improvement work in any clinical area.

In 2015-16 the Appropriateness of Care Framework is being tested in the clinical area of Magnetic Resonance Imaging (MRI) of the lumbar spine where there is strong evidence that suggests overuse of this diagnostic imaging modality in Canada.

Successful implementation of the framework requires a multi-year strategy and ongoing, unwavering system-wide support for this transformational change. Organizations that the framework is modeled after have taken many years to reach a stage of maturity in their programs. To be successful, a health care system that ”thinks and acts as one,” working towards common understanding and agreed-upon evidence-based practices, will have a key role to play in recognizing when health care decisions result in “too much or too little” care being provided. There is a role for clinicians, patients, families and the public to work together to improve Appropriateness of Care. In Saskatchewan these roles will be supported by the provincial Appropriateness of Care Framework.

With the system-wide adoption of the Saskatchewan Healthcare Management System and advancement of Patient and Family-Centred Care over the last few years, the Saskatchewan health system is poised to start down the path of improving Appropriateness of Care, another major transformative initiative that will help the system achieve its goals of: Better Health, Better Care, Better Value and Better Teams.

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Introduction

> *"For so many years the patient voice has been missing in healthcare, contributing to varying outcomes for patients. By incorporating the voice of the patient throughout many areas of this work, [Appropriateness of Care] will ensure the goals of the initiative will be met. [The Appropriateness of Care Vision] Right care provided by the right provider, to the right patient, in the right place, at the right time, resulting in optimal quality care … So promising to our patients and families but also will make sure our patients will be getting the safest quality of care."*
>
> \- Heather Thiessen, a Patient and Family Advisor

Appropriateness of Care has been noted in the literature for decades, mainly discussed as variation in clinical practice across the entire continuum of care: from chronic disease management to the use of medications, to surgery. As early as 1938 a study was published documenting varying rates of tonsillectomies across geographical regions of England[4], noting geographic clusters of variation in how physicians treat patients with similar conditions.

Appropriateness of Care in Saskatchewan was raised in Commissioner Tony Dagnone's Patient First Review, *For Patients' Sake*, released in October 2009[5]. According to the report, patients with similar health conditions frequently experience differences in diagnostic testing and treatment options, resulting in varied experiences and outcomes.

It's accepted in health care that some variation in patient care is to be expected. There are known geographic differences in population health status, including the genetic predisposition to disease, socio-economic status, lifestyle, nutrition, and other factors which influence different patterns of health care. These examples are considered "justified or warranted variation." Decisions regarding treatment of medical conditions are influenced by clinician education and training, available resources and capacity, as well as individual and local practice cultures. These factors may lead to unjustified variation in clinical care. Quality improvement experts contend that if unjustified or unwarranted variation exists, there may be a potential quality of care issue. For example, in two similar populations that do not differ in age, sex, health status, and other relevant determinants of

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[4] *Variations in Hospital Admissions and the Appropriateness of Care: American Preoccupations*? John P. Bunker BMJ September 1990

[5] *For Patient's Sake Patient First Commissioner's Report for SK Minister of Health*. Commissioner Tony Dagnone October, 2009

need, if there are three times as many procedures, tests, medications administered in one place compared to the other, both cannot be best practice – either there are too few procedures in one population, too many in the other, or neither is getting it right. This variation is now known to be a feature of almost every country's health care, including Canada, and this has potential for negative patient outcomes as well as unnecessary costs to the health care system[6].

As a result, there has been a growing interest in addressing Appropriateness of Care issues in Canada:

- In response to fiscal challenges, Ontario passed legislation in 2010 to strengthen the commitment toward the delivery of high-quality care, the *Excellent Care for All Act* (*ECFAA*) 2010. The *ECFAA* is a key component of a broad strategy that improves the quality and value of patients' experiences by providing them with the right evidence-informed health care at the right time and in the right place.
- In July 2013 the Council of the Federation (Provincial and Territorial Premiers) recommended that all participating provinces and territories adopt guidelines as appropriate for their jurisdiction for the use of medical imaging in minor head injuries, lower back pain and headaches.
- The Canadian Medical Association (CMA) launched Choosing Wisely Canada campaign in April 2014 to raise awareness of inappropriate care contributed by unnecessary tests, treatments and procedures. This campaign has been endorsed by provincial and territorial medical associations, including the Saskatchewan Medical Association (SMA).

Improving Appropriateness of Care is not new to the Saskatchewan health system. Since 2009 various clinical pathways for patients faced with prostate cancer, lower back pain, joint pain in hips and knees and pelvic floor conditions have been developed and implemented to improve the consistency of assessment and care and to use multidisciplinary teamwork to provide the necessary information for patients to help determine appropriate care options. In 2012, Saskatchewan Surgical Initiative's Variation and Appropriateness Working Group (VAWG) was formed to study surgical variation in Saskatchewan and develop strategies to narrow the gap in rates of specific surgeries performed. Currently, there are many other efforts to improve Appropriateness of Care under various initiatives (Saskatchewan Context, page 8).

In 2014-15, the Saskatchewan health system Provincial Leadership Team (PLT) made a commitment to improve Appropriateness of Care by making it one of the key priorities for

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[6] *Population-Based Variation in Rates of Surgical Interventions in Saskatchewan: A First Look at Province-Wide Data* SK Surgical Variation and Appropriateness Working Group 2012

the health care system. An Appropriateness of Care team led by two physicians and an administrative program lead, supported by the Ministry of Health and the Saskatchewan Health Quality Council (HQC) was established to develop a provincial Appropriateness of Care framework to be implemented across the system. The main purpose of the framework is to provide a shared understanding of what Appropriateness of Care means to patients, clinicians, health system stakeholders and the public, and a shared vision for improving Appropriateness of Care in Saskatchewan by embedding it in daily work of clinicians using a standard quality improvement approach that applies to a broad range of patient-centred clinical areas.

Appropriateness of Care Vision, Outcome Target and Improvement Target

Vision	**Outcome Target**	**Improvement Target**
All patients and residents in Saskatchewan receive "*Right Care, provided by the Right Providers, in the Right Place, at the Right Time, resulting in Optimal Quality of Care*" (adopted from the CMA)	By March 31, 2018, 80% of clinicians in three selected clinical areas within two or more service lines will be utilizing agreed upon best practices	At least three clinical area have deployed care standards and used measurement and feedback to inform improvement at the provincial level.

As previously mentioned, reaching the point where the Appropriateness of Care program vision statement becomes a reality will depend on implementation of a multi-year strategy and ongoing system-wide support for this transformational change. A system that is working towards common understanding and agreed-upon evidence-based practices will have a key role to play in recognizing when health care decisions result in "too much or too little" care being provided.

Key Values and Guiding Principles

Key Guiding Principles

- Clinician-Led
- Evidence-Based Care
- Effective Care
- Patient- and Family-Centred Care
- Information Sharing
- Equitable Care
- Standardized Care (does not mean "exactly the same care rather consistent care)
- Continuous Learning and Improvement
- Interdisciplinary team (care team)

Value to Clinicians, Patients and the System

- Eliminate unnecessary referrals, testing and treatments, thereby reducing wasted time for both clinicians and patients
- Improve transparency in clinical decision-making
- Greater involvement and collaboration of clinicians in developing new knowledge
- Standardized care makes it easier for clinicians to provide the care that meets the needs of patients
- Reduced wait times by ensuring only the right (best) tests or treatments are provided to patients
- Reduce potential risks of patient harm associated with unnecessary testing and treatments

What is Appropriateness of Care?

In general, appropriate health care has been described as a treatment, procedure, medication or intervention that is expected to do more good than harm for a patient with a given health problem or set of problems, based on scientific evidence. The potential benefit and risk associated with any intervention/procedure varies according to the circumstances in which it is applied. In some cases the risks and benefits of an intervention for a particular patient will be quite predictable; in others there is a higher degree of uncertainty.

Optimizing health care delivery means reducing uncertainty – the more accurately we can assess risk and potential benefit, the greater the likelihood of both improving outcomes and avoiding harms. Where the risk outweighs the likely benefit, or the likely benefit is very small, the intervention may be inappropriate. It is also inappropriate to withhold an intervention where the likely benefits are considerable and the level of risk acceptable. There are multiple perspectives that need to be considered in determining the value (benefit vs harm) of a service, including those of the patient, the health care provider and the health care system.

Overuse, underuse, misuse and unjustified variation have been widely used to describe care that may be considered "inappropriate." [7]

- **Overuse:** Any patient who receives a treatment, procedure or medication for an uncertain indication, which means that there is minimal or no scientific evidence supporting that the benefits outweigh the risks. Patients may receive services that are considered unnecessary (i.e. unnecessary tests), which may even endanger their health if needless testing leads to more invasive procedures (i.e. medical imaging tests leading to unnecessary exposure to radiation or surgical procedures that do not improve patient outcomes). Unnecessary testing and screening can lead to false positive diagnoses and overtreatment.

- **Underuse:** Any patient who does not receive a treatment, procedure or medication that is proven value to their condition based on evidence (i.e. effective care). Underuse of effective care can result in a wasted opportunity to prevent serious illness. For example, underuse of specific types of medications in cardiac-related illnesses such as beta-blockers after an acute myocardial infarction and inappropriate use of calcium-channel blockers have been associated with increased rates of re-hospitalization, death, or both.

- **Misuse:** Any patient who receives the wrong treatment, procedure or medication during the course of their treatment (i.e. use of antibiotics in illnesses caused by viruses; prescribing of specific medications in the elderly without a diagnosis, duplicate medical imaging testing, such as CT when MRI is the most appropriate test).

- **Unjustified Variation:** Practice variation occurs among clinicians, hospitals, health care organizations, regions, and health care systems and may be due to patient's clinical differences, population health differences, and geographical differences, which are considered justifiable variation. Unjustified variation, however, may indicate that there is an issue with inappropriate care (i.e. overuse, underuse and/or misuse).

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[7] *For Patient's Sake Patient First Commissioner's Report for SK Minister of Health*. Commissioner Tony Dagnone October, 2009

Underlying Causes of Inappropriate Care

> *"15% – 20% of care is 'clinically inappropriate."*
>
> - Dr. Brent James, Chief Quality Officer at Intermountain Healthcare in Utah

There is significant clinical variation in patient care happening across Canada. Several reports issued by the Canadian Institute of Health Information[8] (CIHI) over the past several years provide examples of clinical variation in Canada which may indicate inappropriate care.

- Between 2007-08 and 2009-10, Newfoundland and Labrador had the highest mastectomy rate (69%) in Canada, followed by Saskatchewan (65%). Quebec had the lowest mastectomy rate (26%).
- Saskatchewan had the highest rate in angioplasty with stents (PCI) and coronary artery bypass surgery (CABG) despite the evidence that PCI and CABG do not prevent heart attacks or improve survival rate for patients with stable angina compared to medical therapy alone.
- Alberta had the highest overall child birth assisted-delivery rate (e.g. vacuum-assisted delivery and forceps-assisted) (16.8%) among the provinces, followed by Saskatchewan (15.8%).
- The primary Caesarian-section rate also varies significantly across Canada. Newfoundland and Labrador and B.C. have the highest primary C-section rates (23.5% and 22.9%, respectively), while Saskatchewan and Manitoba have the lowest rates (14.7% and 14.4%, respectively).

According to the Saskatchewan Surgical Initiative's Variation and Appropriateness Working Group (VAWG) report released in July 2012, there is a significant range in rates of certain high volume surgical procedures performed in Saskatchewan based on patient's geographical location, with a high-to-low variance range in some instances as high as 7 to 1. This data indicates that there may be Appropriateness of Care issues within specific surgical procedures in the Saskatchewan health system.

Some of the factors that may contribute to overuse, underuse, misuse, and variation in patient care include:

- **Access to patient information**
  eHealth Saskatchewan is building the platform for a universal electronic health record for patients; however, patient information currently is fragmented and most often information is located in several different charts in different physical

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[8] CIHI Health Indicator Reports; 2011, 2012; Breast Cancer Surgery in Canada, 2007-08 to 2009-10

locations. Obtaining clinical information (tests, test results and procedures performed on patients) is challenging and time consuming, and leads to over-testing in many instances.

- **Utilization of clinical practice guidelines (CPGs) among clinicians**[9]
  CPGs are "statements that include recommendations, intended to optimize patient care, that are informed by a systematic review of evidence and an assessment of the benefits and harms of alternative care options." [10] They include criteria for helping to determine appropriateness of care. Although many clinicians agree that they are helpful sources of advice, good educational tools and likely to improve quality of care, they also view them impractical and too rigid to apply to individual patients. Critics indicate they may reduce clinician autonomy, oversimplify medicine (standardizing practice around the average patient) and focus on cost-cutting, limiting innovation and clinical freedom.[11] CPGs often are not presented in a clearly understandable or decipherable form. CPGs often aren't integrated into clinicians' work environments, making it difficult for clinicians to apply it to their daily practice. Failure to make them available at the point of care rather than relying on the ability of clinicians to read, remember and apply the guidelines contributes to lower utilization. Engaging clinicians in developing and use CPGs or agreed-upon best practices and then embedding them into their workflow or daily practice will be key for improving utilization of CPGs. The preferred format needs to be available "just in time," where and when needed.

- **Limited patient involvement in health care decision-making**
  Patients are not always fully informed and involved in health care decision-making, particularly when there is more than one treatment option available and minimal evidence suggesting one option is better than the other. In this case, patient involvement in treatment decision-making can be very important to achieve the best possible outcomes for patients. Research shows that patients choose differently when they are fully informed about treatment options with their benefits and risks[12]. One of the Appropriateness of Care strategies is to inform patients about their treatment options with benefits and risks, as well as involve them in the treatment decision-making through embedding Shared Decision-Making (SDM)

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[9] *Hidden Barriers to the Improvement of Quality of Care*. Barbara J. McNeil. NEJM November, 2001

[10] Institute of Medicine definition

[11] Clinicians' Attitudes to Clinical Practice Guidelines: A Systematic Review. Cynthia Farquhar et al. The Medical Journal of Australia. August 2002.

[12] *Decision Aids for People facing Health Treatment or Screening Decisions*. Stacey D, Bennett LC, Barry JM, Col FN, Eden BK, Holmes-Rovner M, Llewellyn-Thomas H, Lyddiatt A, Légaré F and Thomson R. Cochrane Database of Systematic Reviews. 2011. Issue 10.

tools into the Appropriateness of Care projects (see the Patient/Families/Public Stakeholder Engagement and Communication Plan).

- **Increased demand for particular treatments and diagnostic tests due to advanced technologies and their availability**
  The abundance and availability of health care information has the potential to be confusing and misleading for the public. Information available about medications, treatments and procedures often is highly profiled on a variety of media sites, TV shows, or social media, but may not be supported by rigorous research or evidence or provide enough information for the general public to make an informed decision.

Saskatchewan Context

> "*I don't blame anybody – they're just doing what makes sense and we have to change what makes sense.*"
>
> - Don Berwick, Former President/CEO of the Institute of Health Improvement

There are numerous opportunities to improve Appropriateness of Care within the Saskatchewan health system. (See Appendix A: *Opportunities for Appropriateness of Care Framework to Align with Provincial Initiatives*). A few examples where improvements are required or work is underway include:

- overuse or test substitution in medical imaging (MRI, CT);
- overuse of specific laboratory tests (Vitamin D);
- unnecessary referrals to specialists resulting in long wait times to see a specialist;
- high volumes of patients, including seniors, receiving care in hospitals where alternate care could be provided but not available elsewhere;
- overuse of specific classes of medications in seniors;
- overuse and misuse of antibiotics; and
- underuse of effective treatments for patients with chronic diseases.

Many initiatives are underway to address some of these issues e.g. ED Waits and Patient Flow, Chronic Disease Management-Quality Improvement Program, Seniors' House Calls, Home First/Quick Response Home Care, Improving Access to Specialists and Diagnostics Initiative, Clinical Pathways, Surgical Variation and Appropriateness Working Group, Synoptic Reporting for breast cancer and lower leg bypass surgeries. Embedding the Appropriateness of Care Framework and methodology into these initiatives can ensure that patients receive the right care, provided by the right providers, in the right place, at the right time resulting in optimal quality of care.

As previously mentioned, the Choosing Wisely Canada (CWC) campaign was launched in April 2014 to help physicians and patients engage in healthy conversations about unnecessary tests, treatments and procedures, and to help physicians and patients make smart and effective choices to ensure high-quality care. Since its launch in 2014, more than 150 recommendations have been produced on various treatments, as well as 50 patient education pamphlets. Given that the Saskatchewan Medical Association (SMA) is fully onboard with this campaign, there is opportunity for the Saskatchewan health system to collaborate with the SMA to leverage this campaign to improve Appropriateness of Care in Saskatchewan.

The Saskatchewan Center for Patient Oriented Research (SCPOR) has been formed to develop a patient-oriented research (POR) strategy for the Saskatchewan health system, which will be part of the Canadian Institute of Health Research (CIHR)'s nation-wide POR strategy in Canada. The SCPOR group is comprised of researchers and academic research organizations (University of Saskatchewan, University of Regina, First Nations University, Saskatchewan Polytechnic, and HQC). Appropriateness of Care has been identified as one of their core priorities. SCPOR will be partnered with the provincial Appropriateness of Care Program, Regional Health Authorities (RHAs), the Saskatchewan Cancer Agency (SCA) and other health care organizations to integrate the research components into Appropriateness of Care, which will ensure that the care provided to patients is evidence-based.

The opportunities are vast with linkages to many ongoing initiatives in the Ministry of Health, RHAs, SCA, 3sHealth, individual clinicians and other health care organizations that have a burning interest to improve care, as well as many external organizations.

Moving Forward with Appropriateness of Care in Saskatchewan

> *"The framework and standard work for Appropriateness is so important, so that information given to patients is clear- from primary care givers to specialists. Of course, there will always be differing opinions among doctors, but patients can make better decisions when armed with good (more standard) information. We can be more involved in the decision making."*
>
> - Cindy Dumba, a Patient and Family Advisor

1. System-wide adoption of a common methodology for improving Appropriateness of Care

A number of high performing health care systems in the US have been successful in their work on improving Appropriateness of Care by reducing clinical practice variation, including Intermountain Healthcare in Salt Lake City, Utah and Virginia Mason Hospital and Medical Centre in Seattle, Washington. As part the Appropriateness of Care Framework, a Saskatchewan model of improving Appropriateness of Care has been developed based on the methodologies used by these organizations: a clinician-led, evidence-based, data-driven and continuous- learning approach to improving Appropriateness of Care.

Appropriateness of Care projects will each be led by a Clinical Development Team of frontline clinicians (specialists, family practitioners, nurses, pharmacists, etc.) administrative/support staff, data experts, researchers, patients and their families. Clinical Development Teams will implement common agreed-upon best practices while measuring and analyzing data required to measure outcomes including clinical, safety, service and cost. An important part of the implementation process is that both the common agreed-upon practices and measurements need to be built into the clinical workflow. This will make it easier for clinicians to use the agreed-upon best practices and to track the progress and outcomes. Using Plan Do Study Act (PDSA) tools, feedback received from clinicians will be reported back to the Clinical Development Team for further improvement in agreed-upon best practices (See Appendix F: Implementation Process for AC Methodology).

2. Provincial, Regional and Organizational Structures for Appropriateness of Care

Successful implementation and integration of the provincial Appropriateness of Care Framework into the Saskatchewan health care system is dependent on the creation of not only a provincial strategy, but also a plan within each health region and health care organization to support the framework's methodology (depicted in Figure 1 on page 18). Provincial, regional and organizational level requirements include physician champions (part-time), staff to support data collection and analysis, as well as administrative support. Major risks of implementing the Appropriateness framework without system supports include delays in implementation, limited or poor results, and disengaged physicians who will be reluctant to re-engage in the future.

The provincial level structure includes the Provincial Appropriateness of Care program. The program, established in 2015, has a formal governance and decision making structure (Appendix E), to support provincial Appropriateness of Care projects. A provincial

Appropriateness of Care project will be a larger scale project affecting a significant portion of population in Saskatchewan or several health regions. The roles and responsibilities of the Provincial Appropriateness of Care program include:

- integration and coordination of all Appropriateness of Care efforts across the system;
- support health regions and other health organizations to begin their Appropriateness of Care program (e.g. provide facilitation, consultation, data support, and education and training);
- lead, coordinate, replicate provincial Appropriateness of Care projects;
- monitor and measure the progress and outcomes;
- increase awareness of Appropriateness of Care (e.g. stakeholder engagement, public awareness campaign, communication, etc.); and
- ensure that Appropriateness of Care work is aligned with provincial priorities and initiatives.

Individual health regions and other health care organizations interested in pursuing Appropriateness of Care may require regional/organizational support to implement the Appropriateness of Care program. This support could include Appropriateness of Care leads (one physician lead, one administrative lead such as a vice president) that are passionate, and knowledgeable about Appropriateness of Care issues and quality improvement methodologies. The roles and responsibilities of the regional programs may include:

- selecting targeted clinical areas for Appropriateness of Care projects within the organization;
- implementing Appropriateness of Care projects;
- replicating the projects to other areas and sharing results with other regions and agencies;
- monitoring and measuring the progress and outcomes; and
- providing ongoing communication with the senior leadership team and those who will be impacted by the Appropriateness of Care projects.

Individual regions and organizations may need to leverage existing resources and structures such as the Lean Management System (e.g. Kaizen Promotion Offices, Kaizen Operation Teams, and various Lean quality improvement tools). This will benefit implementation of the framework and mitigate duplication/addition of resources within the organization.

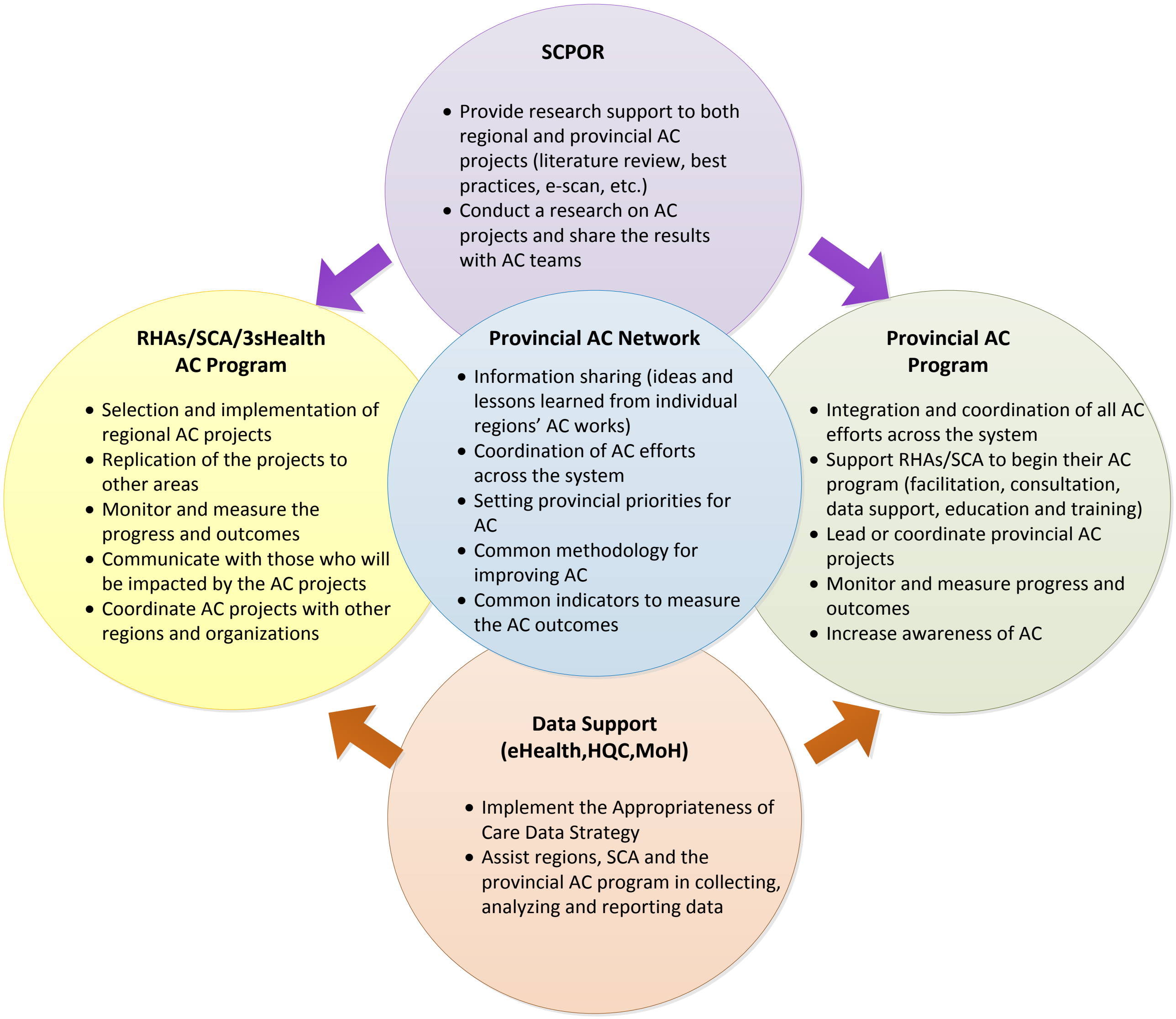
To ensure success, it is important that all health regions and organizations have a shared understanding of the Appropriateness of Care Framework, use the same methodology and tools for improving Appropriateness of Care, and work collaboratively toward achieving the provincial goals and targets. A Provincial Appropriateness of Care Network will be established to facilitate this system-wide adoption and will coordinate all Appropriateness of Care work across the system.

Members of Network will include the Provincial Appropriateness of Care team, representatives from all 12 health regions, SCA, HQC, eHealth Saskatchewan, Ministry of Health (MoH) and 3sHealth, SCPOR as well as patient and family advisors. Those regional representatives will be the ones who will lead Appropriateness of Care work within their organization. The main roles and responsibilities of this group may include:

- information-sharing (innovative ideas, success stories, and lessons learned from individual regions' Appropriateness of Care work);
- coordinating Appropriateness of Care efforts across the system;
- suggesting provincial priorities for improving Appropriateness of Care;
- ensuring that all health regions and organizations use the common methodology for improving Appropriateness of Care; and
- using common indicators to measure the provincial Appropriateness of Care outcome and improvement targets.

Figure 1

Provincial, Regional and Organizational Structures for Appropriateness of Care



SCPOR

- Provide research support to both regional and provincial AC projects (literature review, best practices, e-scan, etc.)
- Conduct a research on AC projects and share the results with AC teams

RHAs/SCA/3sHealth AC Program

- Selection and implementation of regional AC projects
- Replication of the projects to other areas
- Monitor and measure the progress and outcomes
- Communicate with those who will be impacted by the AC projects
- Coordinate AC projects with other regions and organizations

Provincial AC Network

- Information sharing (ideas and lessons learned from individual regions' AC works)
- Coordination of AC efforts across the system
- Setting provincial priorities for AC
- Common methodology for improving AC
- Common indicators to measure the AC outcomes

Provincial AC Program

- Integration and coordination of all AC efforts across the system
- Support RHAs/SCA to begin their AC program (facilitation, consultation, data support, education and training)
- Lead or coordinate provincial AC projects
- Monitor and measure progress and outcomes
- Increase awareness of AC

Data Support (eHealth,HQC,MoH)

- Implement the Appropriateness of Care Data Strategy
- Assist regions, SCA and the provincial AC program in collecting, analyzing and reporting data

3. System-Wide Support Structure for Appropriateness of Care

Implementation of the provincial Appropriateness of Care framework initiates another transformational culture change in health care: clinicians, patients and the health care system will have key roles to play in recognizing when medical care is too much, too little, or the wrong care. Changing the current clinical culture has already proven to be challenging. The following three elements are the foundation that will help address anticipated barriers and support the implementation of the Appropriateness of Care framework across the system.

a) An Involvement Strategy

A comprehensive strategy to involve stakeholders at all levels is critical to successful implementation as well as to achieve the culture change required to sustain momentum and any improvements. The key stakeholders of the Appropriateness of Care program include clinicians, health care system leaders, providers, researchers, patients, families and the public. Plans for involving individual stakeholder groups have been developed and they will be implemented over the next few years. Key goals and actions exist for involving each stakeholder group.

- **Health System Leadership and Provider Involvement Strategy**
  The goal is to create an environment where physicians and other health care professionals are supported to implement the Appropriateness of Care Framework within their own organizations and their own practices. A series of presentations to raise awareness of Appropriateness of Care work were given in late 2014-15, delivered to various health system leadership groups, including the Provincial Leadership Team (PLT), the Ministry of Health Senior Leadership Team (SLT), Senior Medical Officers Committee (SMOC) and a variety of physician groups. This action will continue throughout 2015-16 to engage other health system leaders, continue to create awareness and solicit their support for implementing the framework in their own regions and organizations.

- **Physician Involvement Strategy**
  Physicians play a key role in the health system, and are integral to quality of care, patient safety, and system leadership. Their commitment and participation are key to achieving cultural transformation. The goal of the physician involvement strategy is to create an environment that supports physician leadership and education in improving Appropriateness of Care. As part of the engagement strategy, key guiding principles and tools for involving physicians have been developed to facilitate physician involvement in Appropriateness of Care projects. A number of physician leadership groups, including Practitioner Advisory Committees, Department Heads at Regina Qu'Appelle and Saskatoon Health Regions, and the SMA have been engaged in discussion on improving Appropriateness of Care in Saskatchewan. In order to ensure ongoing involvement, existing physician compensation policies and models are being reviewed to address barriers for involving physicians, and to create an incentive structure that will motivate involvement.

- **Patient, Family and Public Engagement Strategy**
  The goal of this strategy is to create a collaborative partnership with patients and families in improving Appropriateness of Care. This means involving patients and families in designing and implementing any efforts to improve Appropriateness of Care, as well as involving them in their own care and treatment decision-making, ensuring that their perspectives are incorporated. To increase patient involvement in their own treatment decision-making at the level they choose, Shared Decision-Making (SDM) concepts and tools will be embedded into applicable Appropriateness of Care projects, allowing patients' values and preferences to be incorporated into their treatment plan.

  Most health regions and other organizations have structures to involve patients and families in improving quality of care and patient safety. A number of patient and family advisors and advisory councils have been involved in various quality improvement initiatives at the regional level and the provincial level. Appropriateness of Care will leverage these existing structures to involve patients and families.

Effective communication with these stakeholders will be an important part of the engagement strategies. Multi-modal communication techniques and tools will be used to inform and update stakeholders on various initiatives underway, successes and lessons learned. This will not only help them stay engaged but also will keep the momentum going for continued improvement.

For more detailed engagement and communication plans for individual stakeholders, see the supporting appendices (*Appendix B: Physician Involvement Plan; Appendix C: Stakeholder Engagement Plan*).

b) A Robust Clinical Information System

Successful implementation of the provincial Appropriateness of Care Framework is dependent on the availability of relevant clinical information to support continuous learning and improvement. Ability to access reliable and timely clinical data will not only display the current state of particular clinical areas (i.e. identifying clinical practice variation, any Appropriateness of Care issues and any practice changes needed to improve Appropriateness of Care) but also measure the impact of practice changes and improvements made on patient outcomes.

Although Saskatchewan has a number of rich health databases that can be used for quality improvement and clinical research (e.g. Discharge Abstract Database, MDS, etc.), the process for obtaining timely data can be complicated, challenging and expensive. The development of valuable clinical information systems requires leadership, methodology, human resources and infrastructure support. A data and measurement strategy has been developed in collaboration with eHealth Saskatchewan to address issues related to accessing reliable and clinically relevant data for Appropriateness of Care. Much of this work will focus on increasing awareness and accessibility of data, human resource and infrastructure capacity for measurement system design, and governance for the data strategy (i.e. clear roles and responsibilities of all participating organizations).

c) Education and Training Programs

Education and training is a very important component for building capacity to improve Appropriateness of Care within the system. Education and training will not only support the system to achieve Appropriateness of Care provincial targets but also facilitate the culture change needed to make Appropriateness of Care a norm in clinical practice.   Several physicians and quality improvement experts in Saskatchewan have completed the Intermountain Healthcare Quality Improvement Training called Advanced Training Program (ATP).   This program provides in-depth knowledge and tools for improving Appropriateness of Care in various clinical areas.

Education and training based on the Intermountain Healthcare model will be developed and implemented over the next few years. They will highlight the value of patient outcomes tracking and continuous quality improvement in order to identify and improve the care provided to patients.

Once developed, education and training will be provided to clinicians, administrative staff, data experts, patients and families who will be part of developing and implementing Appropriateness of Care projects at both the regional and the provincial levels. Further, educational components ideally will be integrated into Lean for Improvement Leader Training as well as embedded into the College of Medicine curriculum, residency training programs, professional development workshops, and Continuing Medical Education (CME) so that Appropriateness of Care becomes routine practice.

Next Steps

In order to achieve the ambitious goals around Appropriateness of Care in Saskatchewan, the framework has been developed to provide a strategy for embedding the Appropriateness of Care methodology into the Saskatchewan health system. The framework is expected to be implemented over the next several years and will require the collaborative action and support of the entire health system: leaders, clinicians, administrators, patients and their families, to continue to work together on this major transformational culture shift in "what" care is provided in Saskatchewan.

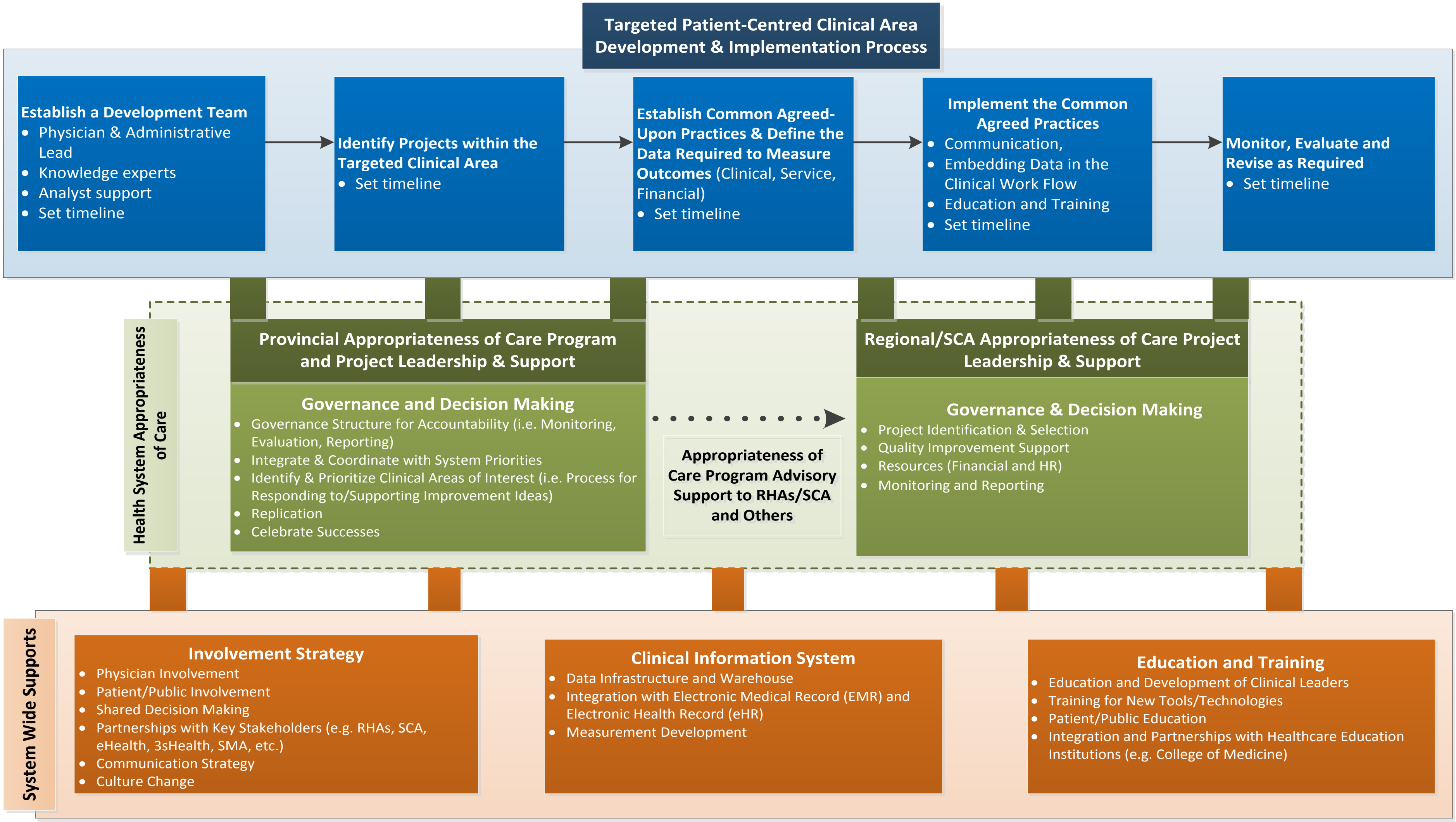
The next several years will be a learning experience for the health care system in Saskatchewan. Lessons learned over the course of 2015-16 with the MRI of lumbar spine work will contribute to modifications and refinement of the Appropriateness of Care Framework. The goal of changing the culture will evolve over time, given the will, commitment, and patience of the system as this program spreads its roots and becomes embedded in the daily work of providing health care.

The elements of the Provincial Appropriateness of Care Framework are illustrated in a one page schematic diagram on page 18.

Appropriateness of Care Framework

Better Care Made Easier

Vision: "*The Right Care, provided by the Right Providers, to the Right Patient, in the Right Place, at the Right Time, resulting in Optimal Quality Care (CMA Definition).*"
Outcome Target: By March 31, 2018, 80% of clinicians in 3 selected clinical areas within two or more service lines will be utilizing agreed upon best practices.
Improvement Target: *By March 31, 2016, at least one clinical area within a service line will have deployed care standards and will be actively using measurement and feedback to inform improvement.*



Targeted Patient-Centred Clinical Area Development & Implementation Process

Establish a Development Team
- Physician & Administrative Lead
- Knowledge experts
- Analyst support
- Set timeline

Identify Projects within the Targeted Clinical Area
- Set timeline

Establish Common Agreed-Upon Practices & Define the Data Required to Measure Outcomes (Clinical, Service, Financial)
- Set timeline

Implement the Common Agreed Practices
- Communication,
- Embedding Data in the Clinical Work Flow
- Education and Training
- Set timeline

Monitor, Evaluate and Revise as Required
- Set timeline

Health System Appropriateness of Care

Provincial Appropriateness of Care Program and Project Leadership & Support

Governance and Decision Making
- Governance Structure for Accountability (i.e. Monitoring, Evaluation, Reporting)
- Integrate & Coordinate with System Priorities
- Identify & Prioritize Clinical Areas of Interest (i.e. Process for Responding to/Supporting Improvement Ideas)
- Replication
- Celebrate Successes

Appropriateness of Care Program Advisory Support to RHAs/SCA and Others

Regional/SCA Appropriateness of Care Project Leadership & Support

Governance & Decision Making
- Project Identification & Selection
- Quality Improvement Support
- Resources (Financial and HR)
- Monitoring and Reporting

System Wide Supports

Involvement Strategy
- Physician Involvement
- Patient/Public Involvement
- Shared Decision Making
- Partnerships with Key Stakeholders (e.g. RHAs, SCA, eHealth, 3sHealth, SMA, etc.)
- Communication Strategy
- Culture Change

Clinical Information System
- Data Infrastructure and Warehouse
- Integration with Electronic Medical Record (EMR) and Electronic Health Record (eHR)
- Measurement Development

Education and Training
- Education and Development of Clinical Leaders
- Training for New Tools/Technologies
- Patient/Public Education
- Integration and Partnerships with Healthcare Education Institutions (e.g. College of Medicine)

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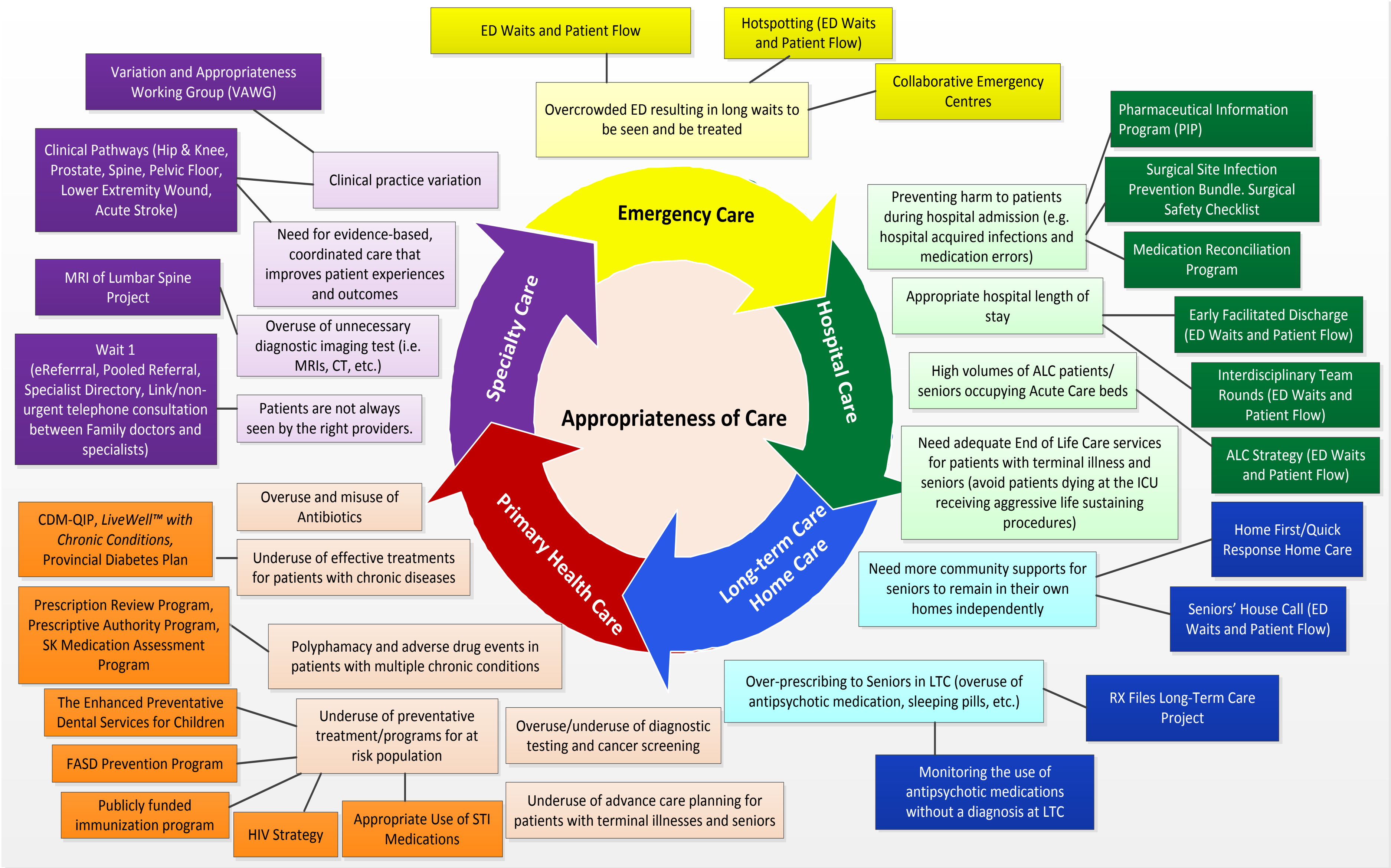
Appendix A: Opportunities to Align Appropriateness of Care with Provincial Initiatives



Appropriateness of Care

Emergency Care

Hospital Care

Long-term Care
Home Care

Primary Health Care

Specialty Care

ED Waits and Patient Flow

Hotspotting (ED Waits and Patient Flow)

Overcrowded ED resulting in long waits to be seen and be treated

Collaborative Emergency Centres

Variation and Appropriateness Working Group (VAWG)

Clinical Pathways (Hip & Knee, Prostate, Spine, Pelvic Floor, Lower Extremity Wound, Acute Stroke)

Clinical practice variation

Need for evidence-based, coordinated care that improves patient experiences and outcomes

MRI of Lumbar Spine Project

Overuse of unnecessary diagnostic imaging test (i.e. MRIs, CT, etc.)

Wait 1
(eReferrral, Pooled Referral, Specialist Directory, Link/non-urgent telephone consultation between Family doctors and specialists)

Patients are not always seen by the right providers.

Pharmaceutical Information Program (PIP)

Surgical Site Infection Prevention Bundle. Surgical Safety Checklist

Preventing harm to patients during hospital admission (e.g. hospital acquired infections and medication errors)

Medication Reconciliation Program

Appropriate hospital length of stay

Early Facilitated Discharge (ED Waits and Patient Flow)

High volumes of ALC patients/ seniors occupying Acute Care beds

Interdisciplinary Team Rounds (ED Waits and Patient Flow)

ALC Strategy (ED Waits and Patient Flow)

Need adequate End of Life Care services for patients with terminal illness and seniors (avoid patients dying at the ICU receiving aggressive life sustaining procedures)

Home First/Quick Response Home Care

Need more community supports for seniors to remain in their own homes independently

Seniors' House Call (ED Waits and Patient Flow)

Over-prescribing to Seniors in LTC (overuse of antipsychotic medication, sleeping pills, etc.)

RX Files Long-Term Care Project

Monitoring the use of antipsychotic medications without a diagnosis at LTC

Overuse and misuse of Antibiotics

CDM-QIP, *LiveWell™ with Chronic Conditions,* Provincial Diabetes Plan

Underuse of effective treatments for patients with chronic diseases

Prescription Review Program, Prescriptive Authority Program, SK Medication Assessment Program

Polyphamacy and adverse drug events in patients with multiple chronic conditions

The Enhanced Preventative Dental Services for Children

Underuse of preventative treatment/programs for at risk population

FASD Prevention Program

Publicly funded immunization program

HIV Strategy

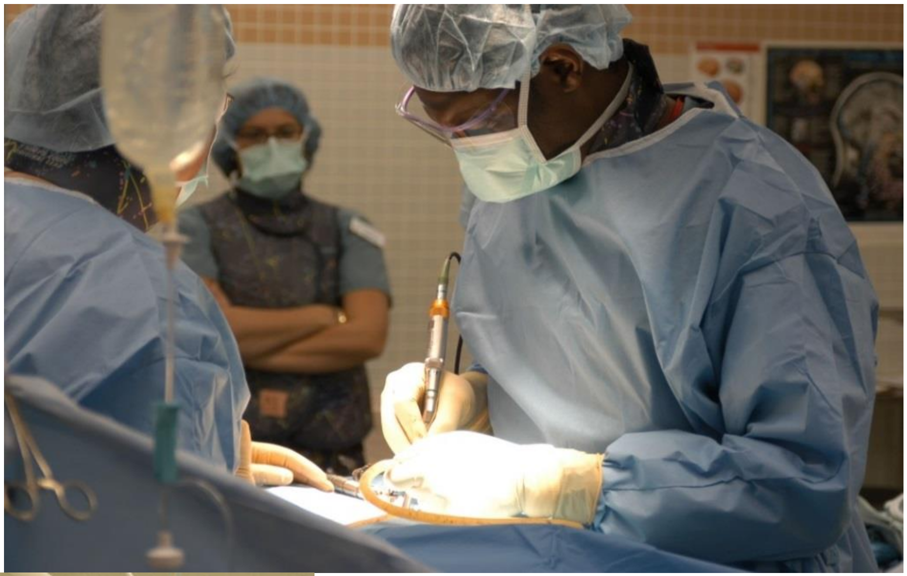
Appropriate Use of STI Medications

Overuse/underuse of diagnostic testing and cancer screening

Underuse of advance care planning for patients with terminal illnesses and seniors

Appendix B: Physician Involvement Strategy

Appropriateness of Care Framework: Physician Involvement Strategy



Appropriateness of Care: Better Care Made Easier

Version 1: December 4, 2015

Physician Involvement Strategy

> *"The endless pursuit to find the miracle solution simply points to the reality that there isn't one solution that fits everyone….We are all going to have to work on this one*."[13]

1. Introduction

Successful implementation of the Appropriateness of Care framework is dependent on engagement of a large contingent of stakeholders across the health care system. Physicians play such a key role in the health system, and are so integral to quality of care and patient safety, that a strategy for involving physicians in the Saskatchewan Appropriateness of Care program is essential for the initiative's success.

> *"Very few decisions about the clinical care of patients can be made without a physician's order. They have knowledge that others do not; they are at the heart of care; they have power; they control resources and without them and their support, nothing moves forward*."[14]

Many Canadian provinces are addressing quality of care and patient safety in a systemic way, however obtaining physician involvement in system improvement continues to be a challenge.[15] Health system leaders are unlikely to achieve system-level improvement without physicians and physicians cannot bring about system-level performance improvement alone, but can prevent it from moving forward.[16]

The term "physician engagement" is currently a popular and overused term that is heard frequently in conversations about health care reform, however the phrase is not always clearly defined or understood, therefore has different meanings to different stakeholders. Often the term physician engagement is used interchangeably with the term physician leadership. In order to successfully improve Appropriateness of Care in Saskatchewan, both physician engagement, defined as physicians' active interest and participation, and leadership are critical. One of the key guiding principles for the provincial work on improving Appropriateness of Care is for the work to be clinician led; therefore, physicians need to be actively involved throughout the entire journey of implementing the Appropriateness of Care program.

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[13] Knowling Robert. Leading with Vision, Strategy and Values. Chap 15 in Leading for Innovation and Organizing for Results.2010

[14] A Roadmap for Trust: Enhancing Physician Engagement. Amer Kaissi. Written for RQHR 2012

[15] Improving Care for British Columbians: The Critical Role for Physician Engagement. Julian Marsden et al. Healthcare Quarterly 15 (Special Issue): December, 2012.

[16] Seven Leadership Leverage Points. IHI Innovation Series 2005

Physician involvement depends on multiple factors, can be difficult to achieve, and won't happen without focused efforts. Diverse strategies must be considered – the strategies may vary depending on various groups, as well as the dynamics and relationships of the groups. Creating an environment that creates a true partnership with our physicians in improving Appropriateness of Care includes understanding their perspective, seeing health care from their eyes and learning from them, particularly those physicians who are already highly involved.

There is no "one size fits all" or "recipe for success" strategy that can be universally applied for individuals or group of physicians. Trust between physicians and organizations must be established; trust will develop around open communication, creating a shared vision, willingness to share relevant data, and evidence of successful collaboration.[17]

There have been numerous publications suggesting the importance of physician engagement and leadership; however few publications discuss the *processes* by which health systems and organizations can convert physician autonomy, knowledge and power into resources for health system performance and improvement.[18] There are very few Canadian publications documenting successful results of engagement strategies.

Many articles suggest one strategy to create a culture of physician engagement is encouraging and empowering physicians to take the lead on a wide range of quality improvement initiatives.[19] What better quality initiative than Appropriateness of Care? One of the first action items already implemented by Saskatchewan senior leaders is recognition that development of the Appropriateness of Care framework requires significant physician input. This has resulted in appointment of two highly regarded physicians who hold senior leader roles as program sponsors, and two highly engaged physicians with significant knowledge of quality improvement theory appointed to lead development of the framework and act as expert resources to guide the process of physician engagement.

The challenge of increasing physician involvement to improve Appropriateness of Care is a process that will take time, will evolve, and will be dependent on persistence and continuous evaluation of what's working well, and what can be done better. Facilitation in shifting the thinking from getting "buy-in" to "ownership" is a key factor and

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[17] Exploring the Dynamics of Physician Engagement and Leadership for Health System Improvement: Prospects for Canadian Healthcare Systems. Final Report. April, 2013 Ross Baker et al

[18] A Roadmap for Trust: Enhancing Physician Engagement. Amer Kaissi. Written for RQHR 2012

[19] Policy Paper: Partnering with Physicians: Doctors of BC January, 2014

challenge; however if successful, the results will be extremely influential and beneficial for the initiative.

Implementation of the Appropriateness of Care framework is a process that will take many years to be fully embedded in the daily work of the health care system and physician work flow. The Appropriateness of Care program must provide a compelling argument that attracts physicians' interest and answers the question that physicians will ask themselves, "*What's in it for me and my patients*?" If the answer to that question provides a compelling enough argument, the Appropriateness of Care program will gain traction quickly.

2. Guiding Principles

Guiding principles for physician involvement were developed by Dr. T. Josdal, Chief Medical Officer for Saskatchewan and Appropriateness of Care Program sponsor. These principles will be used to guide involvement of physicians:

- Physician Engagement is defined as "the initial, ongoing, energetic, and committed involvement of physicians in their diverse working roles within the health system."[20] If an initiative or process is likely to affect physician workflow, or clinical work, they must be involved.
- Involve physicians from the beginning, and continuously thereafter.
- Dialogue and involvement create an atmosphere conducive to engagement but do not constitute engagement by themselves. The alignment with organizational goals is a key part of engagement.
- Dyad (physician leader integrally coupled with an operations leader) and other co-leadership partnerships create meaningful working relationships. Their value is beyond engagement, and benefits operations and patient safety.
- Strong evidence, in proposals for change, dramatically helps to engage physicians in changes to clinical processes.
- Reduction of hassles and wasted time are strong catalysts to assist with change.
- Understanding the culture of the physician group is essential in order to move forward. If there are significant outstanding unresolved issues, engagement will not likely occur.
- Clarity around responsibilities of the health system/RHA, and of each and all physicians is fundamental to alignment with the quality agenda.
- Making it easy to do the right thing is a win-win situation for all, and should be a cornerstone for many quality improvements.

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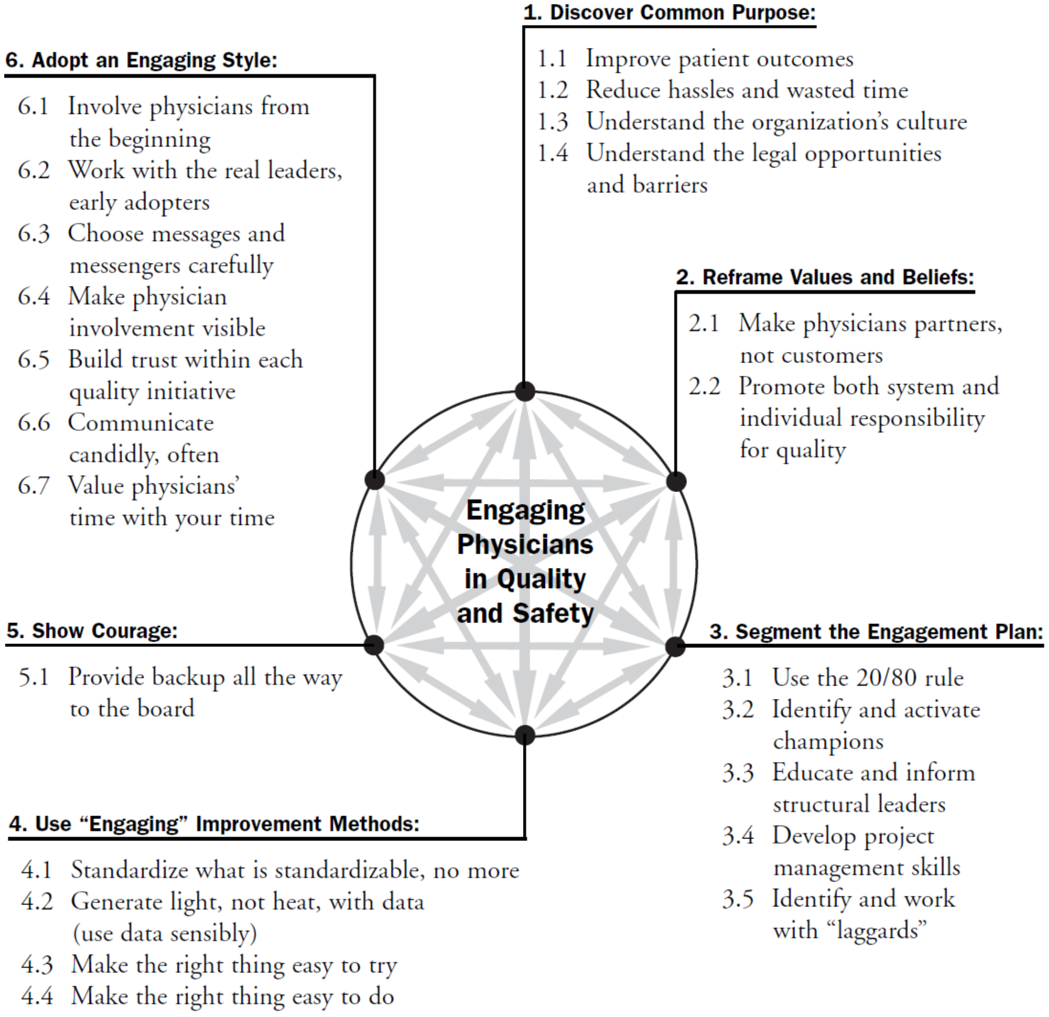
[20] Anchoring Physician Engagement in Vision and Values: Principles and Framework. G. Dickson for RQHR 2012

- Communicate well and appropriately, never wasting a physician's time. Links to information are useful, and can be selected, or not.
- Distributed Leadership, where a committee or group empowers and assists each member to become a conduit for communication and feedback. This fosters leadership and engagement of not only the member of the committee/group, but also the physicians contacted by the committee member.
- Leadership education and training helps leaders to hone skills around engagement, while recognizing that informal leaders are also very helpful in engaging physicians.
- Action Plans and Timelines are essential pieces when engaging physicians, because they have a keen sense of wasted time and energy when applied to quality initiatives.
- Celebrate successes. Demonstrate success in eliminating wasted time and energy, while improving care and making work easier for clinicians.
- Create time spaces that work for clinicians if you wish them to become engaged. This applies to meeting times and travel.
- Private physician overhead costs must be considered when planning to engage physicians.
- Trust and follow-through are essential values for the promotion of ongoing engagement. If a physician feels betrayed and becomes disengaged, re-engagement is difficult or impossible.

The above listed principles mirror IHI's Framework for Involving Quality and Safety very closely.

Figure 1: IHI's Framework for Involving Physicians in Quality and Safety- checklist[21]



1. Discover Common Purpose:

1.1 Improve patient outcomes
1.2 Reduce hassles and wasted time
1.3 Understand the organization's culture
1.4 Understand the legal opportunities and barriers

2. Reframe Values and Beliefs:

2.1 Make physicians partners, not customers
2.2 Promote both system and individual responsibility for quality

3. Segment the Engagement Plan:

3.1 Use the 20/80 rule
3.2 Identify and activate champions
3.3 Educate and inform structural leaders
3.4 Develop project management skills
3.5 Identify and work with "laggards"

4. Use "Engaging" Improvement Methods:

4.1 Standardize what is standardizable, no more
4.2 Generate light, not heat, with data (use data sensibly)
4.3 Make the right thing easy to try
4.4 Make the right thing easy to do

5. Show Courage:

5.1 Provide backup all the way to the board

6. Adopt an Engaging Style:

6.1 Involve physicians from the beginning
6.2 Work with the real leaders, early adopters
6.3 Choose messages and messengers carefully
6.4 Make physician involvement visible
6.5 Build trust within each quality initiative
6.6 Communicate candidly, often
6.7 Value physicians' time with your time

3. Key Drivers and Actions

These Guiding Principles, IHI's Framework for Engaging Physicians in Quality and Safety checklist, and the Driver Diagram illustrated in Figure 2 below have been used to develop the physician engagement action plan for the Appropriateness of Care program.

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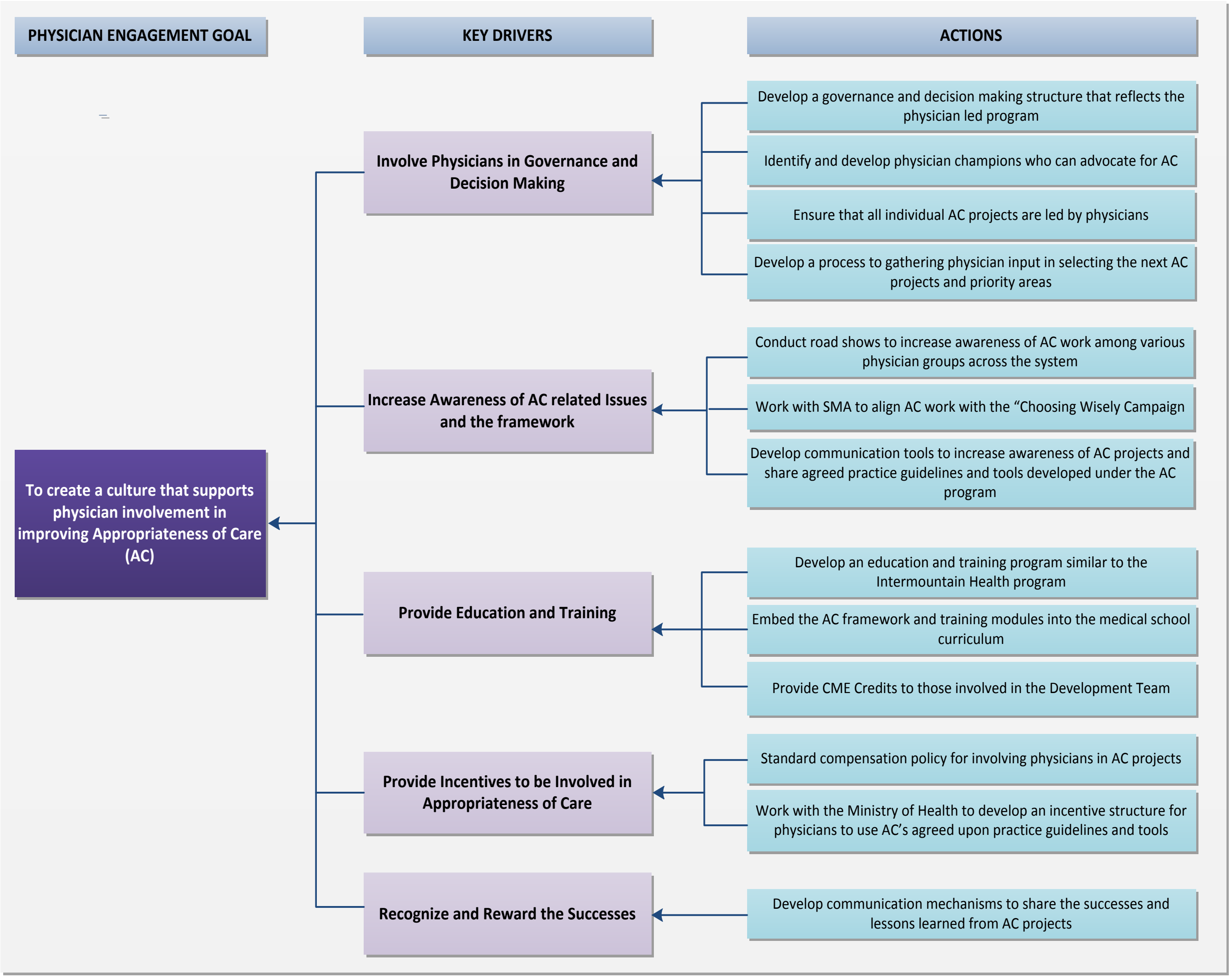
[21] Reinertsen et al 2007 IHI

Figure 2: Physician Involvement Strategy



- **Involvement in Governance and Decision Making**
  Involving physicians in formal leadership roles and formal decision-making or governance bodies is important (however that strategy alone won’t result in greater physician engagement). Recent research focused on developing more effective clinical practice settings suggests that structure *can* play an important role in generating physician engagement and physician leadership. It also suggests that engaging the medical profession and developing its leadership cannot be limited to initiatives located at the strategic apex of the organization or system.
  Structures creating greater alignment for improvement, accountability and cost containment may represent fertile ground for developing physician

involvement.[22] Actions taken to date and future actions to involve physicians in governance and decision making include:

- The Appropriateness of Care program sponsors include two physicians who are senior provincial leaders- the provincial Senior Medical Officer and the current Chair of the Saskatchewan Health Quality Council.
- The Appropriateness of Care Steering Committee was established to provide strategic direction and oversight for the provincial Appropriateness of Care program. The Steering Committee is comprised of the above listed physicians as well as senior leaders from the health system, including senior medical officers from the Regina Qu'Appelle health region (RQHR) and the Saskatoon health region (SHR) as well as the Dean of the College of Medicine.
- Two physicians have been appointed as co-leads for development of the framework, as well as an administrative co-lead, working in a dyad leadership model.
- Formation of the first Appropriateness of Care Development Team for MRI of lumbar spine includes physician representatives who are the key stakeholders in utilization of this modality of testing. The group is comprised of representatives from orthopedic surgery, neurosurgery, radiology and family practice.
- A necessary next step will be to identify how the Appropriateness of Care project team can provide support to the key stakeholders (i.e. RHAs and SCA) as they start work on various Appropriateness projects- what structures and supports will be required in each agency to ensure success?

- **Awareness of Appropriateness of Care and the framework**
  The Appropriateness of Care program aligns strongly with physician's clinical work. Quality initiatives that impact clinical work are more appealing for physician involvement. Continuing to raise the level of awareness about the Appropriateness of Care program may increase the desire to be involved. Actions to date and in the future actions include:
  - A series of presentations to raise awareness of Appropriateness of Care was initiated in late 2014-15. Information has been presented to several groups of physicians including: SHR Department of Radiology, SMA Section of Family Practice, SHR Practitioner Affairs Committee, RQHR Department Head Council and Practitioner Affairs Committee, SaskDocs, and Saskatchewan International Physician Practice Assessment (SIPPA).

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[22] Baker, Dr. Ross et al. *Exploring the Dynamics of Physician Engagement and Leadership for Health System Improvements: Prospects for Canadian Healthcare Systems Final Report*. April 2013

  - ➢ This action will continue throughout 2015-16 reaching out to various other physician communities to increase awareness of the Appropriateness of Care framework, share agreed upon clinical practices and tools with physicians as well as successes and lessons learned from Appropriateness of Care projects.
  - ➢ Ongoing collaboration with SMA in aligning Appropriateness of Care with the Choosing Wisely Canada campaign
  - ➢ Developing and implementing a mechanism to hear physicians' voices and concerns about the implementation of Appropriateness of Care (e.g. annual physician surveys)
  - ➢ Developing awareness of Appropriateness of Care related issues includes collaborating with groups that have the ability to influence others to advance the agenda of improving patient/client/resident care (See Section 5: Using Physicians to Influence Change)

- **Education and Training**
  Education about Appropriateness of Care, as well as training in the improvement methodology will increase physician involvement. Actions to date and future actions include:
  - ➢ Develop a lecture on Appropriateness of Care to be tested in the College of Medicine in 2016-17
  - ➢ Provide advice/assistance to RHAs and SCA in setting up a quality improvement structure to undertake Appropriateness of Care projects within their organization
  - ➢ Provide education and training to RHA and other health care organizations about the Appropriateness of Care framework and how to implement it in clinical areas
  - ➢ Work with HQC and the SMA in supporting physicians to enroll in the Intermountain Health Advanced Training Program (ATP)
  - ➢ Align with the SMA to develop mechanisms and tools to educate the public about Appropriateness of Care by leveraging patient information developed by the Choosing Wisely campaign (e.g. posters, brochures, media advertisements, website, social media)
  - ➢ Develop a Saskatchewan based educational program for physicians who are interested in participating in Appropriateness of Care projects i.e. Intermountain sister course (2017-18)
  - ➢ Work with the College of Medicine to embed education regarding Appropriateness of Care into the medical school curriculum (2018-19)

- **Provide Incentives to be Involved in Appropriateness of Care Work**
  There must be a compelling incentive for physicians to become involved in Appropriateness of Care work, which may mean financial incentives, time, and the opportunity to improve efficiency of daily workflow.
  - Remuneration will be provided to physicians participating in Clinical Development Teams. A standard process and rate will be applied.
  - Policies regarding physician remuneration may have to be revised.

- **Recognize and Reward Successes**
  - Provide thanks to Development Team members, including formal acknowledgement by CEOs, VPs, and senior physician leaders in the form of a letter of thanks, or an email.
  - Find ways to share the results/outcomes for each Clinical Development Team (e.g. websites, newsletters, email, social media- depending on the results and targeted audience)
  - Tap into professional newsletters to share outcomes (i.e. SMA and College of Physicians and Surgeons of Saskatchewan newsletters)
  - Celebrate success through sharing the results in local, provincial and national publications
  - Nominate outstanding work for local and provincial quality awards

4. Lessons Learned to Date

- Physician input is critical for selection criteria and the decision making process for upcoming/future Appropriateness of Care improvement projects.
- Identify physicians with a keen interest in the clinical area (physician champions)
- Ask for volunteers to participate in the Development Team; some may need to be tapped on the shoulder
- Obtain endorsement of senior physician leaders, and then make them aware of physicians who are involved
- Keep senior leaders regularly updated on progress, successes and challenges
- Ensure that senior leaders provide the authority for Development Teams to make decisions and that Development Teams are aware of that authority
- Provide related data and a best practice literature search as a conversation starter
- Provide an orientation for Development Team members: make it brief with clear statement of purpose; outline accountabilities
- Include terms of reference- discuss how decisions will be made
- Arrange meetings by consensus: time, date, frequency
- Consider using Telehealth as an alternative to face to face meetings

- Shorter more frequent meetings may be better received than lengthy meetings, depending on meeting purpose
- Be concise with information provided: meeting agendas and deliverables; circulate material ahead of time
- Allow time for discussion and for team members to voice their opinions
- Ensure that Development Team members are aware of the remuneration rate for participation and provide support for the process to obtain payment
- Provide information regarding Continuing Medical Education credits that physicians may be eligible to claim by participating in this work
- Be transparent if there are concerns with discussions
- Don't preplan meeting outcomes
- Providing food/beverages is a nice gesture depending on meeting time
- Identify potential problems, discuss them, and work on solutions collectively
- Record meeting minutes, decisions and action items and distribute in a timely manner
- Develop an overall physician communication plan: the plan should include specific written communication (such as newsletters, e-mail updates, Intranet); face-to-face communication in meetings, physicians' offices or lounges
- Distribute key messages using a multi-modal methodology

5. Using Physicians to Influence Change

Using the influence of key physicians and physician groups is another strategy that may increase physician involvement in Appropriateness of Care improvements. Table 1 below provides a list of key physician groups within health care organizations that may be used as a reference when implementing Appropriateness of Care projects. The table provides a suggested chronological order to approach various physician groups based on level of hierarchy or influence and their roles and responsibilities for making decisions within their organization:

- **Required Approval**: includes those who must provide approval for recommendations/actions;
- **Required Support**: includes those who don't have authority but should be consulted to get their support;
- **Required Leadership/Steering**: includes those who provide oversight and directions to the project team;
- **Active Involvement**: includes those who are actively involved in the project, make recommendations, and act on the actions; and
- **Informed**: includes those who must be informed when a decision is made or work is completed.

Appendix B: Physician Involvement Strategy

Table 1

Physician Engagement Driver	**Chronological Order for Support**	**Required Approval**	**Required Support**	**Required Leadership/ Steering**	**Active Involvement**	**Informed**
Senior Medical Officers	**1**	✓	✓	✓		✓
Medical Department Heads	**2**	✓	✓	✓		✓
Medical Division/Section Heads	**3**		✓	✓		✓
Service Line Clinical Experts/Physician Leaders	**3**			✓	✓	✓
Key Physician Champions	**4**		✓	✓	✓	✓
Informal Physician Leaders	**5**		✓		✓	✓
Development Team members	**5**		✓		✓	✓
Saskatchewan Medical Association	**6**		✓			✓
MD Residents	**7**		✓			✓
College of Medicine	**8**					✓
College of Physicians and Surgeons	**8**					✓
SIPPA	**8**					✓

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Appendix C: Stakeholder Involvement Strategy: Patients, Families, Public and Health System

Appropriateness of Care Framework: Stakeholder Involvement Strategy

Patient First

Appropriateness of Care: Better Care Made Easier

Version 1: December 4, 2015

Stakeholder Involvement Strategy: Patients, Families, Public and Health System

1. Introduction

As well as support and commitment from the larger health care system and physicians, it is important to involve patients, their families and the public in improving Appropriateness of Care. It's critical to educate and engage patients so that they can make informed choices about their care: help patients learn about the tests, treatments or procedures in question, when they are necessary and when they are not, and what they can do to improve their health. .

As part of the framework, this engagement plan provides key messages as well as specific strategies for involving health system leaders, patients and families, and the public in improving Appropriateness of Care.

2. Strategic Considerations

- The Saskatchewan health system has embarked on a fundamental cultural transformation, shifting from a process-driven system to one that is driven by the health needs of patients. There are inevitable challenges in overcoming resistance to changing the way things are done.
- Communication, collaboration and commitment are needed to achieve a more patient- and family-centered system.
- Change fatigue is a risk, particularly with people who are tackling multiple changes at once, or who feel they have no say in how the changes are implemented.
- The shift to a culture that fully supports clinicians in improving Appropriateness of Care will take several years to accomplish.
- Early adopters of new methods will need to forge ahead, without waiting for everyone to buy into all aspects of the change.
- When research, discussion and consensus-building fail to result in meaningful change, incentives, disincentives and policy change may be needed to achieve changes in behavior.

3. Key Messages to Communicate with Stakeholders about Appropriateness of Care

- Appropriateness of Care is a fundamental component of health care quality. The issues around Appropriateness of Care were raised in the Patient First Review, *For Patients' Sake*, released in October 2009. According to this report, patients with the same health issues often receive very different care, depending on where they live.

- Overuse, underuse, misuse and variation in healthcare services are characteristics of inappropriate care. For example, unnecessary diagnostic testing and treatments may expose patients to potential harm or negative outcomes, and increase wait times for those patients who truly need to access these necessary testing and treatments.
- The Saskatchewan health system has committed to improving Appropriateness of Care through working collaboratively with physicians, other healthcare professionals, patients and researchers in embedding the Appropriateness of Care framework into the system.
- The intention of providing a framework for Appropriateness of Care is to provide a strategy for the healthcare system, ultimately ensuring that all patients in Saskatchewan receive *"The right care provided by the right providers, to the right patient, in the right place, at the right time, resulting in optimal quality care."*[23]

4. Involving Health System Leadership and Providers

Health system leadership support is critical for the success of the Appropriateness of Care program as they are important decision makers within the system. Although the Provincial Leadership Team (PLT)[24] has endorsed Appropriateness of Care program through the Health System Strategic Planning process (Hoshin Kanri), there is still a perception of lack of urgency and uncertainty in the financial commitment required for broad implementation of the framework. Other healthcare clinicians (nurses, pharmacists, physiotherapists, dietitians, etc.) and the research community, such as the Saskatchewan Center for Patient Oriented Research (SCPOR) are also important stakeholders as they are important providers to patient care and need to be involved in Appropriateness of Care. The driver diagram in Figure 1 below illustrates the goal, key drivers and the actions to engage health system leadership and providers.

Goal: to create an environment where health care providers are supported to implement the Appropriateness of Care framework within their organizations and practices.

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[23] Canadian Medical Association 2013

[24] PLT is comprised of the Ministry of Health Deputy Minister's Office, CEOs of health regions, Saskatchewan Cancer Agency (SCA), eHealth, and 3sHealth, Board Chairs, and physician representatives. They are the decision makers of the Saskatchewan health system.

Key Drivers and Actions:

- **Involve health system senior leadership in governance and decision making.**
  - ➢ Currently, several CEOs of health regions and healthcare organizations are sponsors of the Appropriateness of Care program and are accountable for the framework development and implementation.
- **Increase awareness and understanding of Appropriateness of Care issues (overuse, underuse and misuse of healthcare services) and the work that is currently underway (i.e. the Provincial Appropriateness of Care program and the provincial framework)**
  - ➢ Increasing awareness of Appropriateness of Care through a series of presentations to key stakeholders was started in late 2014-15. The series presentations kicked off at the Ministry of Health Senior Leadership Team meeting to obtain the Ministry's endorsement of the provincial Appropriateness of Care program.
  - ➢ Creating awareness of Appropriateness of Care will continue throughout 2015-16 to engage RHAs, and other health care organizations, soliciting their support and willingness to implement the framework in their organizations.
- **Create collaborative partnerships with health regions, Saskatchewan Cancer Agency (SCA), eHealth, 3sHealth and the academic research community**
  - ➢ Success of the Appropriateness of Care framework will require a support structure at the local organizational level that will facilitate health regions, the SCA and other healthcare organizations within the system to undertake their own Appropriateness of Care projects. The provincial Appropriateness of Care project team was established to develop the Appropriateness of Care framework and implement provincial Appropriateness of Care projects. This team will provide support to health regions or healthcare organizations interested in developing their own support structure to initiate Appropriateness of Care. This will include advice, tools, and education and training to clinicians and quality improvement staff about the framework and methodologies, etc.
  - ➢ The Canadian Institute of Health Research (CIHR) launched a nation-wide strategy for improving the patient oriented research (POR) capacity in Canada. Saskatchewan stakeholders have been working on developing a business plan that will be submitted to CIHI in June, 2015 to implement a POR strategy in Saskatchewan. The SCPOR group is comprised of researchers and academic research organizations (University of Saskatchewan, University of Regina, First Nations University, Saskatchewan

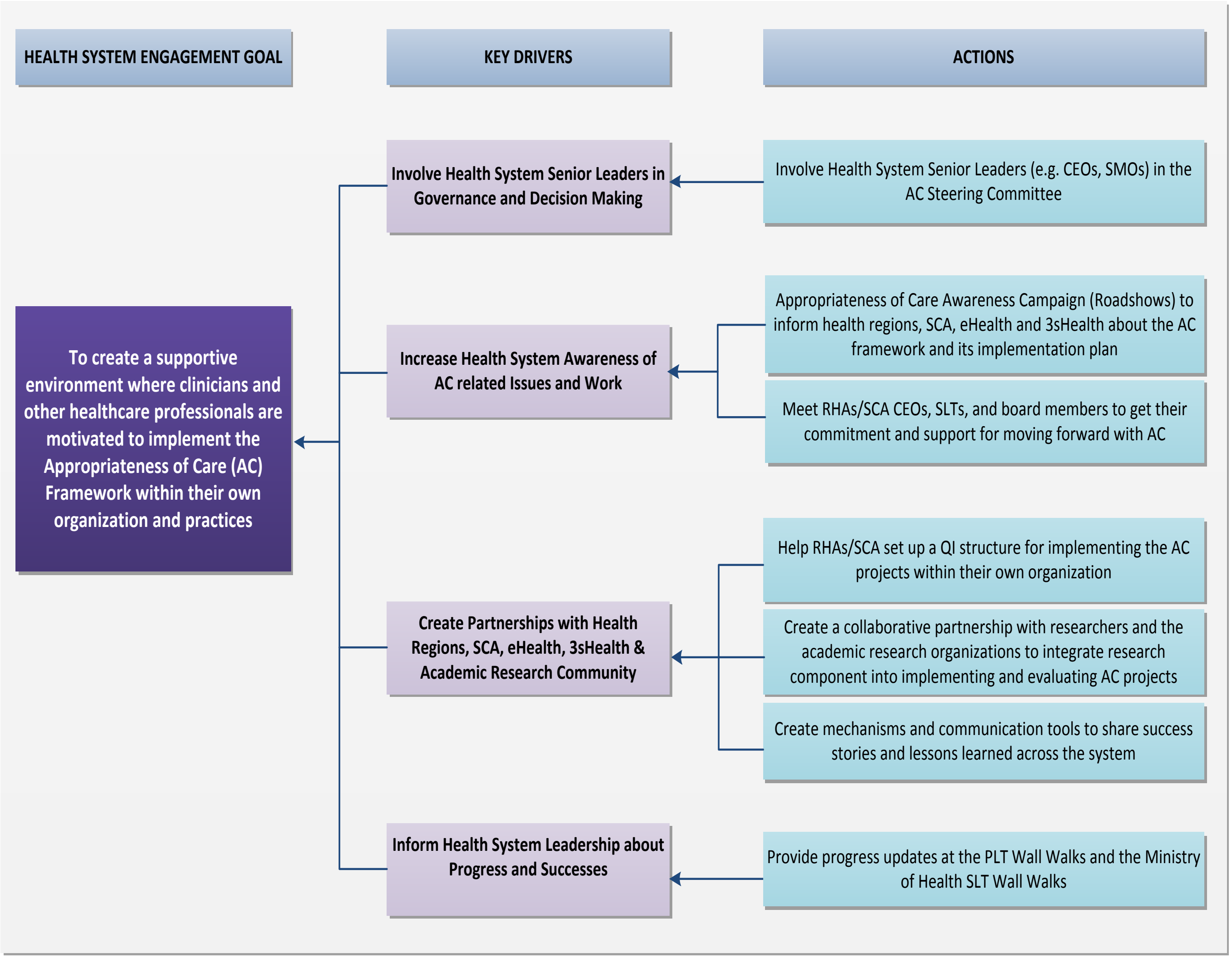
Polytechnic, and HQC). They have identified Appropriateness of Care as their initial priority. SCPOR will work collaboratively with the provincial Appropriateness of Care project team as well as regional Appropriateness of Care programs to provide research support required for Appropriateness of Care projects, including: literature review on best practices; clinical guidelines and tools; development of data; and evaluating the impact of the project in improving patient experiences and outcomes.

  - Various communication mechanisms and tools (e.g. electronic newsletter, website, will be developed to communicate with health system partners about the progress of improving Appropriateness of Care and to share success stories and lessons learned from projects.

- **Inform health system Leadership about the progress in implementing the Appropriateness of Care framework and the success stories so that they can provide continued support for improving Appropriateness of Care.**
  - Performance measures as well as success stories will be reported to PLT on a quarterly basis and to the Ministry of Health Senior Leadership Team (SLT) on a monthly basis.

Appendix C: Stakeholder Involvement Strategy

Figure 1: Involving Health System Leadership and Providers



5. Involving Patients, Families and the Public

> *"I believe that when patients are given the information and the opportunity, we will become better partners with our Healthcare providers regarding appropriate testing (better partners in all aspects of our care). I think most patients and families want our healthcare providers to know that when we are asking questions......it is not to challenge them.....but only to understand….We can begin to make good, informed decisions "with" our doctors, rather than having decisions made "for" us."*
>
> \- Cindy Dumba, a Patient and Family Advisor

Acknowledging that patients and families are not only the recipients of healthcare services but also should be important partners in improving quality and safety of healthcare services, the Saskatchewan health system has committed to achieving Patient- and Family-Centered Care (PFCC) by making PFCC one of the foundations for achieving its strategic goals. Many health regions and organizations have already established a structure to engage patients and families in quality improvement work, and have been actively involving them using Lean strategies and tools (e.g. Rapid Process Improvement Workshops, Value Stream Mapping, 3P events) and other strategic initiatives. This is significant progress for the Saskatchewan health system, however, there is more work to be done in involving patients and their families in their care and treatment decision making. In order for them to be involved in their own care, they need to be fully informed about their diagnosis, treatment options, risks and benefits of each option.

Many patients often conduct their own research and consult their social networks (Frosch et al, 2012) and use Internet-based resources to supplement the information they receive from their physicians. The quality of information obtained from the Internet, however, tends to be poor as they often lack scientific, evidence based information (Griffiths and Christensen, 2000; Kisely et al, 2003). This can potentially provide patients with misleading information and demand for unnecessary treatments.

There is an argument that patient demand for certain diagnostic testing or treatment can lead to inappropriate care. For example, availability of advanced medical technology has contributed to increased patient demand for unnecessary diagnostic and screening tests that may provide no values to their treatment and can potentially lead to early detection of diseases resulting in over-diagnosis and over-treatment.

Some argue that physicians' opinions or personal beliefs may influence patient's decision on their treatments (Wright et al, 1999; Bederman et al, 2011; Fowler et al, 2000; Pearce et al, 2008). Not all clinicians agree on the best treatment option for a patient with a particular condition when more than one treatment option is available. This may result in clinical practice variation. Advocates for patient and family involvement in their treatment decision making argue that informing and involving patients in the decision making process may potentially reduce not only patient demand for unnecessary healthcare services but also clinical practice variation.

Current healthcare culture is not entirely supportive of patient involvement in the decision process. Some of the barriers include:

- The current clinician payment structure (fee for service) makes it difficult for physicians to involve patients in treatment decision making due to time constraints. Physicians may need more consultation time to fully involve patients in treatment decision making. The average primary care visit is 15 minutes, and during this time, the clinician often has to take a history, perform a physical examination, make a diagnosis, review concerns and write a prescription. Providing detailed information on treatment options and eliciting patient's values and preferences for treatment choice on top of their routine exam may take more than 15 minutes.

- Not all patients understand medical terminology and the resulting risks presented by their physicians. Studies suggest that there are a few ways to communicate effectively with patients about risks associated with treatment choices. There is evidence that graphics, pictures and visual metaphors are better understood by patients with low health literacy (Gigerenzer et al, 2008; Houts et al).
- Some patients may have the fear of being assertive. Patients may feel that questioning their physician's advice might be seen as challenging their authority, which may threaten the future of their relationship with the physician as well as the care they receive.

Some of these barriers to involve patients in treatment decision making will be addressed through Shared Decision-Making (SDM), a collaborative decision making process shared between patients and their clinicians to make mutually agreed upon healthcare decisions using evidence-based information, patient's needs, values, preferences, and cultural/religious beliefs and background (see the SDM Toolkit for more detailed information on SDM).

The goal, key drivers, and the actions to increase patients/families/the public involvement in improving Appropriateness of Care are:

Goal: To create a collaborative partnership with patients and families in improving Appropriateness of Care.

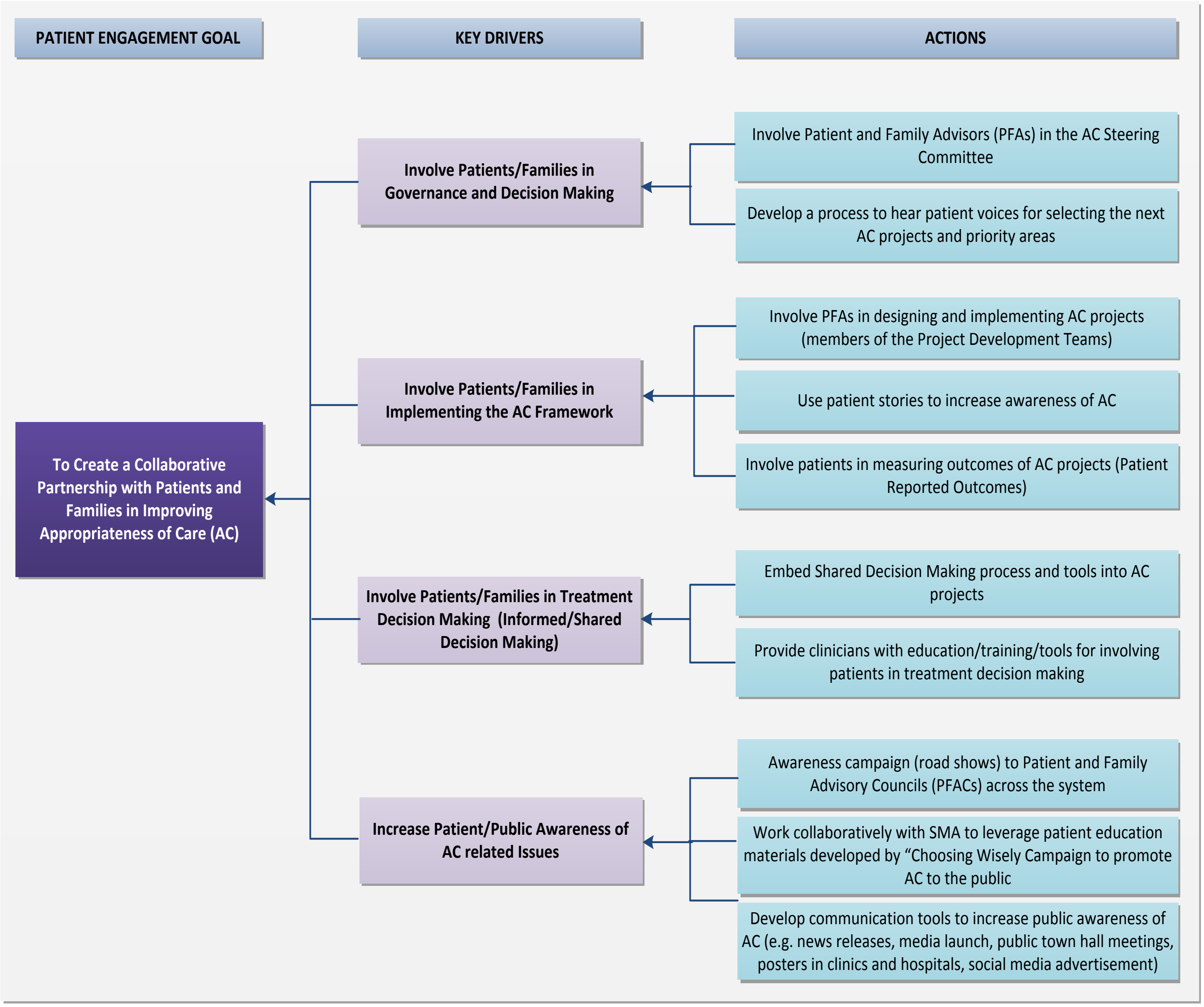
Key Drivers and Actions:

- **Involve patients and families in the governance and decision making process**
  - Two Patient and Family Advisors are currently involved in the Appropriateness of Care Steering Committee, providing strategic direction and oversight to the provincial Appropriateness of Care program.
  - A process for gathering patients' voices and perspectives on selecting clinical areas of focus for Appropriateness of Care projects will be developed and implemented.

- **Involve patients and families in implementing the Appropriateness of Care framework**
  - Patient and Family Advisors will be involved in designing and implementing Appropriateness of Care projects to ensure that the process and outcomes meet the needs of patients rather than the needs of providers.
  - Two PFAs are currently being involved in the MRI of Lower Back Pain project as part of the project development team comprised of mainly clinicians (orthopedic surgeons, neurosurgeons, radiologists, and family physicians) and a few researchers.
  - Patient stories will be used to increase awareness of Appropriateness of Care as well as get buy-in and support from various stakeholder groups, including health system leaders, clinicians and other providers. They are powerful tools for communicating why the system needs to address issues related to Appropriateness of Care.
  - Ideally and if possible, Appropriateness of Care projects will use patient reported outcomes measures (PROMs) to assess the impact of the projects in patient outcomes. Patients and families will be involved in the process of measuring these outcomes.
- **Involve patients in treatment decision making at the level they choose, so that their values and preferences for treatment choices are incorporated into their treatment plan (Shared Decision Making).**
  - Shared Decision- Making process and tools will be embedded into Appropriateness of Care projects. This will help patients understand the information they received from their clinicians about their diagnosis and treatment options as well as help clarify their values and preferences for the treatment options (See the SDM Toolkit for further detailed information).
- **Increase patient/public awareness of potential harm associated with unnecessary diagnostic testing and treatments**
  - The Choosing Wisely Canada Campaign focuses on addressing issues related to overuse of unnecessary treatments and diagnostic tests. This campaign targets both physicians and patients and has been supported by the Canadian Medical Association and the Saskatchewan Medical Association (SMA). The provincial Appropriateness of Care program will work collaboratively with SMA to leverage resources developed by the "Choosing Wisely Canada Campaign" to publicly promote appropriate uses of various diagnostic testing and treatments in Saskatchewan.

- Various communication tools will be developed to increase public awareness of appropriate uses of healthcare services as well as of importance of patient and family involvement in healthcare treatment decision making. Some of the methods and tools may include a news release, a media launch, presentations to Patient and Family Advisory Councils in health regions and the SCA, public town hall meetings, posters in clinics and hospitals, advertisements in newspapers and radios, use of social media to share success stories.

Figure 2: Involving Patients, Families and the Public



PATIENT ENGAGEMENT GOAL: To Create a Collaborative Partnership with Patients and Families in Improving Appropriateness of Care (AC)

- **Involve Patients/Families in Governance and Decision Making**
  - Involve Patient and Family Advisors (PFAs) in the AC Steering Committee
  - Develop a process to hear patient voices for selecting the next AC projects and priority areas
- **Involve Patients/Families in Implementing the AC Framework**
  - Involve PFAs in designing and implementing AC projects (members of the Project Development Teams)
  - Use patient stories to increase awareness of AC
  - Involve patients in measuring outcomes of AC projects (Patient Reported Outcomes)
- **Involve Patients/Families in Treatment Decision Making (Informed/Shared Decision Making)**
  - Embed Shared Decision Making process and tools into AC projects
  - Provide clinicians with education/training/tools for involving patients in treatment decision making
- **Increase Patient/Public Awareness of AC related Issues**
  - Awareness campaign (road shows) to Patient and Family Advisory Councils (PFACs) across the system
  - Work collaboratively with SMA to leverage patient education materials developed by “Choosing Wisely Campaign to promote AC to the public
  - Develop communication tools to increase public awareness of AC (e.g. news releases, media launch, public town hall meetings, posters in clinics and hospitals, social media advertisement)

6. Feedback Loop and Evaluation

It is important to inform the stakeholders about the status of implementing the Appropriateness of Care framework and to celebrate successes with them to reinforce the culture change that is happening within the system as a result of this work. The following tools may be used to inform and celebrate successes with the stakeholders:

Health System Leadership and Providers	Patient, Families and Public
• Electronic News Letters; • Quarterly Provincial Leadership Team (PLT) Wall Walks • Monthly Ministry of Health Senior Leadership Team Wall Walks • Appropriateness of Care Website TBD	• Social Media to share success stories • Appropriateness of Care Website • News Releases

It is also important to evaluate the effectiveness of the stakeholder engagement process. Tools for evaluating the engagement process may include surveys to stakeholders, particularly clinicians about their awareness of the Appropriateness of Care work and to identify any culture shift among these groups on their perceptions or perspectives of Appropriateness of Care.

7. Multi-year Action Plan

In order to successfully achieve the engagement goals, actions have been prioritized over the next three years. This doesn't mean that the Appropriateness of Care program will be done at the end of the third fiscal year- improving Appropriateness of Care within the system requires a transformation that will continuously evolve over time. The work over the first three years will be foundational and help create an environment where Appropriateness of Care becomes a norm within the Saskatchewan health system in the future.

Phase 1 (2015-16)

- Focus on increasing stakeholders' support for the provincial Appropriateness of Care program and implementation of the Appropriateness of Care framework as well as identify their expectations about the provincial program (i.e. Awareness Campaign)
- Create a collaborative partnership with research communities (i.e. SCPOR) to embed research components into improving Appropriateness of Care
- Continue to inform PLT and other key stakeholders about the progress of implementing the framework

- Continue to involve Patient and Family Advisors in the Appropriateness of Care Governance and the MRI of Lumbar Spine project.
- Provide support to RHAs, SCA and other healthcare organizations in creating regional Appropriateness of Care programs within their own organization to initiate Appropriateness of Care projects
- Develop communication tools for sharing the Appropriateness of Care framework, toolkits, progress update on implementing the framework, and other information with health system stakeholders
- Develop and implement tools to evaluate stakeholder engagement (e.g. surveys)
- Align work with the SMA and Choosing Wisely Canada campaign.

Phase 2 (2016-17)

- Launch the public awareness campaign to educate the public about Appropriateness of Care issues (particularly uses of unnecessary diagnostic testing, treatments and screening), what is appropriate care, and how to get involved in their own care and decision making. The public awareness campaign will be aligned with the Choosing Wisely Canada Campaign to ensure that the public receives the consistent information.
- Develop Shared Decision Making (SDM) tools and embed them into Appropriateness of Care projects where applicable.
- Develop SDM educational tools for clinicians and embed them into the Appropriateness of Care clinician education program that will be developed to train clinicians on Appropriateness of Care and its methodologies and tools. This program will be embedded into the medical school curriculum and the Continuing Medical Education (CME) program.
- Continue to provide support to RHAs, SCA and other healthcare organizations in initiating Appropriateness of Care projects within their own organizations.
- Continue to embed SDM tools into Appropriateness of Care projects where applicable
- Evaluate the stakeholder evaluation plan and communication tools to measure the level of stakeholder engagement and the effectiveness of the plan (e.g. surveys)

Phase 3 (2017-18)

- Continue the public awareness campaign
- Continue to provide support to RHAs, SCA and other healthcare organizations in implementing Appropriateness of Care projects within their own organizations
- Evaluate the stakeholder engagement plan to measure the effectiveness and outcomes of the plan (e.g. surveys)
- Keep momentum going through sharing the lessons learned from Appropriateness of Care projects and celebrate the successes with stakeholders
- Sustain improvements that have been made over the last three years

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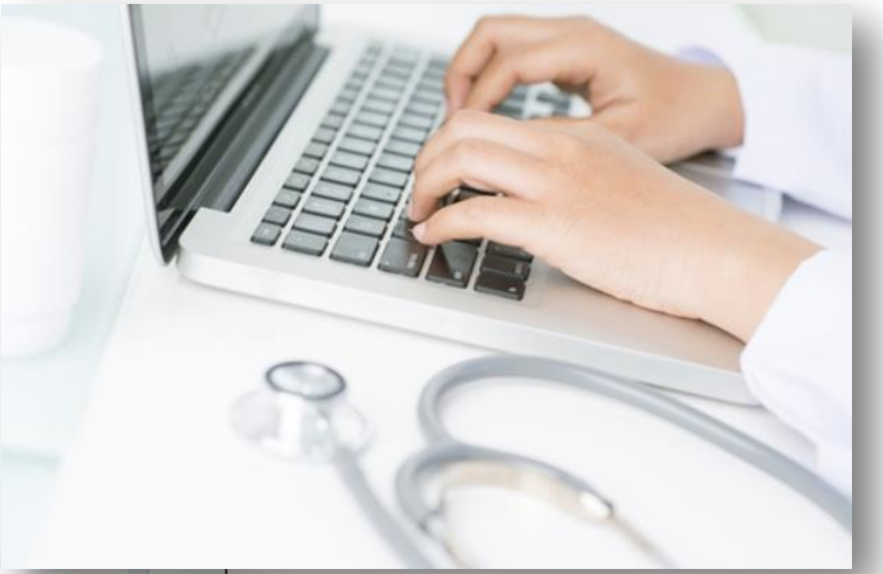
Appropriateness of Care Framework: Data and Measurement Strategy

Patient First



Appropriateness of Care: Better Care Made Easier

Version 1: December 4, 2015

Data and Measurement Strategy

1. Introduction

Successful implementation of the provincial Appropriateness of Care framework is dependent on the availability of relevant clinical information to support continuous learning and improvement. Throughout this work timely and accurate data is necessary for context and evaluation as clinical groups question appropriateness of care, consider their patient outcomes and processes, identify areas of variation, and implement change.

It is recognized that without valuable clinical information it will not be possible to understand the current state nor will it be possible to understand the impact of any practice changes to patient outcomes and appropriateness of care. The development of valuable clinical information systems requires leadership, methodology, and human resource and infrastructure support.

Saskatchewan has rich health databases for use in quality improvement and clinical research. There are a number of databases that are frequently utilized and have strong structures in place for data access and analysis (e.g. Discharge Abstract Database, MDS, etc.). However, in other instances databases exist that are not widely known and increased awareness of their existence could support clinical quality improvement. Still, in other situations, the necessary clinical data to support specific projects may not exist and new data systems are needed. Human resources and sound processes are required to support the awareness, access and development of data systems. Additionally, there are multiple organizations in Saskatchewan involved in various aspects of data system development and reporting and for the Appropriateness of Care program to best support clinicians with valuable information it is important that the roles and responsibilities of these various organizations are identified.

The Appropriateness of Care program team has developed a Driver Diagram (Figure 1) to outline the key drivers and actions that exist in the Saskatchewan health system, or are required, to support this work and achieving the goal of “clinicians will have valuable information to support continuous learning and improvement.”

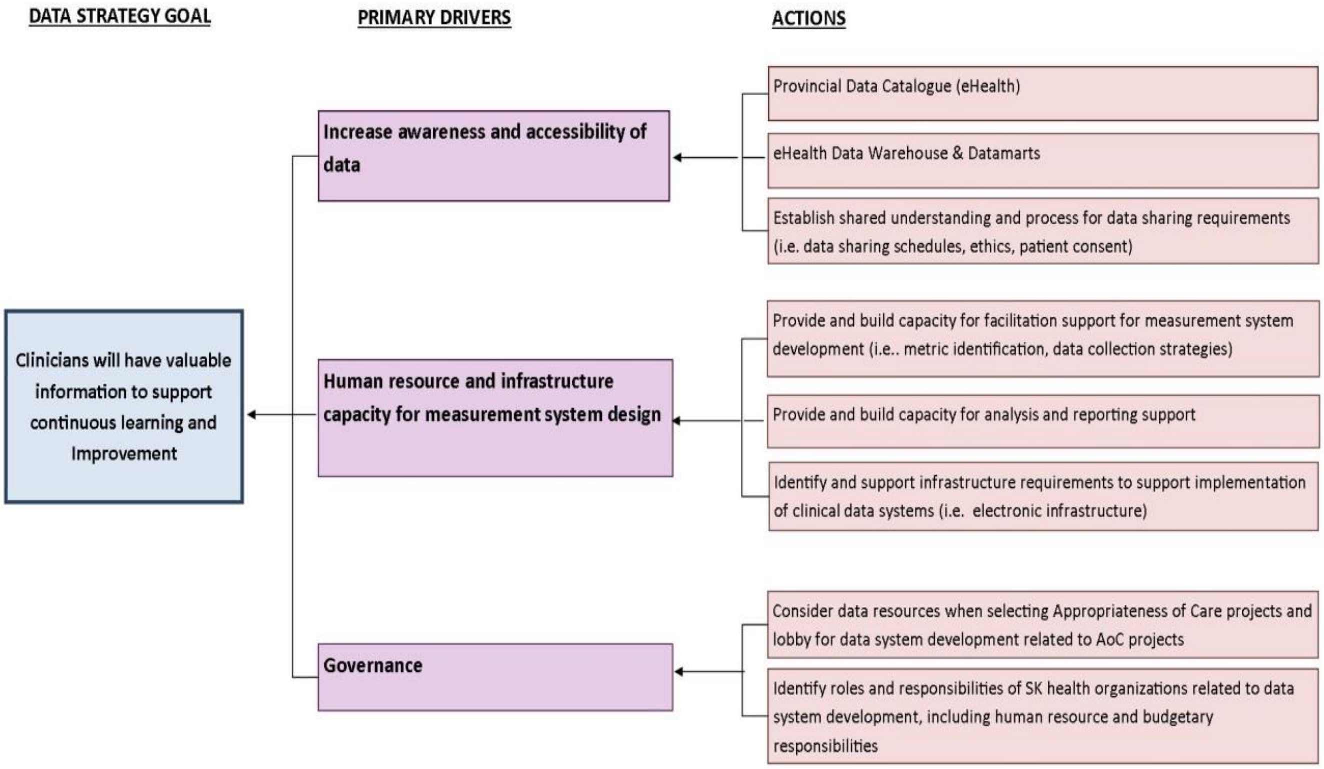
2. Drivers of Strong Data Systems

The goal, primary drivers, and actions to create a strong clinical information system for Appropriateness of Care are:

Goal: Clinicians will have valuable information to support continuous learning and improvement

Primary Drivers and Actions:

Figure 1: Creating a Strong Clinical Information System



- **Increase Awareness and Accessibility of Data:** Data access includes awareness of available data in Saskatchewan and ability to access and use this information.
  - ➢ eHealth Saskatchewan is currently creating a meta data catalogue that will provide a comprehensive review of all databases in Saskatchewan. It will allow users to know what data is available and how it can be used.

- Additionally they are working on a data warehouse and data mart structure that will facilitate ease of access to many databases and linkage between multiple databases. They have proposed modifications to their data warehouse governance structure which would result in more timely access to data.
- Data access includes the logistics of obtaining data from existing datasets, and obtaining new data to create new datasets. Clear processes are required for when and how data sharing schedules, ethics agreements and patient consent are required. These processes will be different depending on:
  - Whether the data/database exists or whether creating a new database is proposed and; and
  - If the required database does exist, whether it is located within a centralized data warehouse or is an independent database within a health organization.

- **Human Resource and Infrastructure Capacity for Measurement System Design:**

  - Human resource capacity is required for facilitation support for measurement system design. This includes the identification of metrics, the required data to report metrics, and data collection and reporting strategies. This facilitation also includes support for using metrics to drive continuous learning and quality improvement.
  - The key guiding principles of the measurement system design include:
    - Organizing data flow around value-added (front line) work processes,
    - Using data for patient care (disease management) but also for rolling it up for reporting and accountability at the level of individual health professionals, facilities/clinics/practice groups, hospitals, regions, and at the provincial and national level.
    - It is important that the right data is collected once, at the point of origin and then used for all applications.
    - All value-adding work is inherently local. All improvement is inherently local; therefore, implementation of a data collection system can't destroy clinical productivity. Instead, data collection must be integrated into workflow at the front line

- The role of the provincial Appropriateness of Care team is to both provide facilitation and support as well as to build capacity within the Saskatchewan health system to lead this work. They have developed a data methodology document within the Appropriateness of Care tool kit to further support the development of measurement systems within clinical projects (See Toolkit 4).

- ➢ Additionally, human resource capacity is required to support the data collection, data entry and analysis once the measurement system is designed and implemented.
- ➢ Finally, system support and infrastructure is necessary to support implementation of new data systems. Electronic infrastructure is an important component of measurement system design. This will include identification of how the measurement system may fit into current electronic infrastructure or if a new electronic infrastructure will be created, and within what timelines.
- ➢ Strong partnerships between the Appropriateness of Care team and eHealth will be necessary to facilitate modifications of existing and development of new electronic infrastructure.

- **Data Governance**

  - ➢ The Appropriateness of Care data strategy will be overseen by the Appropriateness of Care governance structure (see Appendix E) but will be strongly influenced by the Saskatchewan data environment including other governance organizations such as the eHealth Information Advisory Committee and the eHealth Information & Analytics Sub-Committee.
  - ➢ When selecting Appropriateness of Care provincial projects, or providing support to regional Appropriateness of Care projects it will be important to consider the necessary and available data to support such work.
  - ➢ Additionally, a key role of the Appropriateness of Care teams will be to garner support for the provincial development of data systems that will impact the Appropriateness of Care work.
  - ➢ As it relates to the data strategy the Appropriateness of Care governance will approve the overall data strategy and data collection and reporting plan within clinical areas of focus and approve allocation of resources to carry out the plan(s).
  - ➢ There are multiple health organizations in Saskatchewan with capacity and capability to provide clinical information support to clinical groups. For the

Appropriateness of Care program to best support clinicians with valuable information it is important that the roles and responsibilities of these various organizations are identified. Suggested roles for these organizations include:

- Health Quality Council
  - Assist in identifying existing data and data reports to support early project work.
  - Collaborate with other partners and clinical development teams to:
    - Develop clinical process maps;
    - Define metrics needed for learning and improvement and how they will be reported;
    - Define data elements and collection methods;
    - Facilitate development of database design, data entry and analytics for paper based data systems; and
    - Assist in building capacity and capability for RHAs and providers to independently collect, enter, and analyze data.
    - Create capacity and skills for measurement and analysis for quality improvement and new knowledge generation

- Ministry of Health
  - Assist with identifying and creating data reports for databases that the MoH has access to.
  - Assist in facilitation of data access.

- eHealth Saskatchewan
  - Assist with identifying existing datasets and linkage between databases.
  - Assist in facilitation of data access.
  - Collaborate with other partners to create electronic platforms for new data capture, analytics, and reporting.
  - Assist in building capacity and capability for RHAs and providers to independently collect, enter, and analyze data.

- Regional Health Authorities
  - Assist in identifying existing data from relevant datasets.
  - Assist in facilitation of data access.

- Saskatchewan Cancer Agency
  - Assist in identifying existing data from relevant datasets.
  - Assist in facilitation of data access.

    - Saskatchewan Health Information Analyst Network
        - Assist in identifying existing data from relevant datasets.
        - Assist in analytics

    - Saskatchewan Centre for Patient Oriented Research
        - Provide access to data platforms developed for research and learning related to health system priorities.
        - Collaborate with steering committees for health system priorities (of which appropriateness may be part) to develop shared research priorities.
        - Conduct research studies as defined in the SCPOR strategic plan. (Directly related to health system priorities of which appropriateness may be part)
        - Share the results of relevant research projects.
        - Create capacity in collaboration with system partners including measurement, analysis and research.

- Budgetary responsibilities for measurement system design may be spread across multiple organizations. Many activities carried out under the strategy would be accomplished by in-kind allocation of staff time and data capture and analytics development resources from participating organizations.

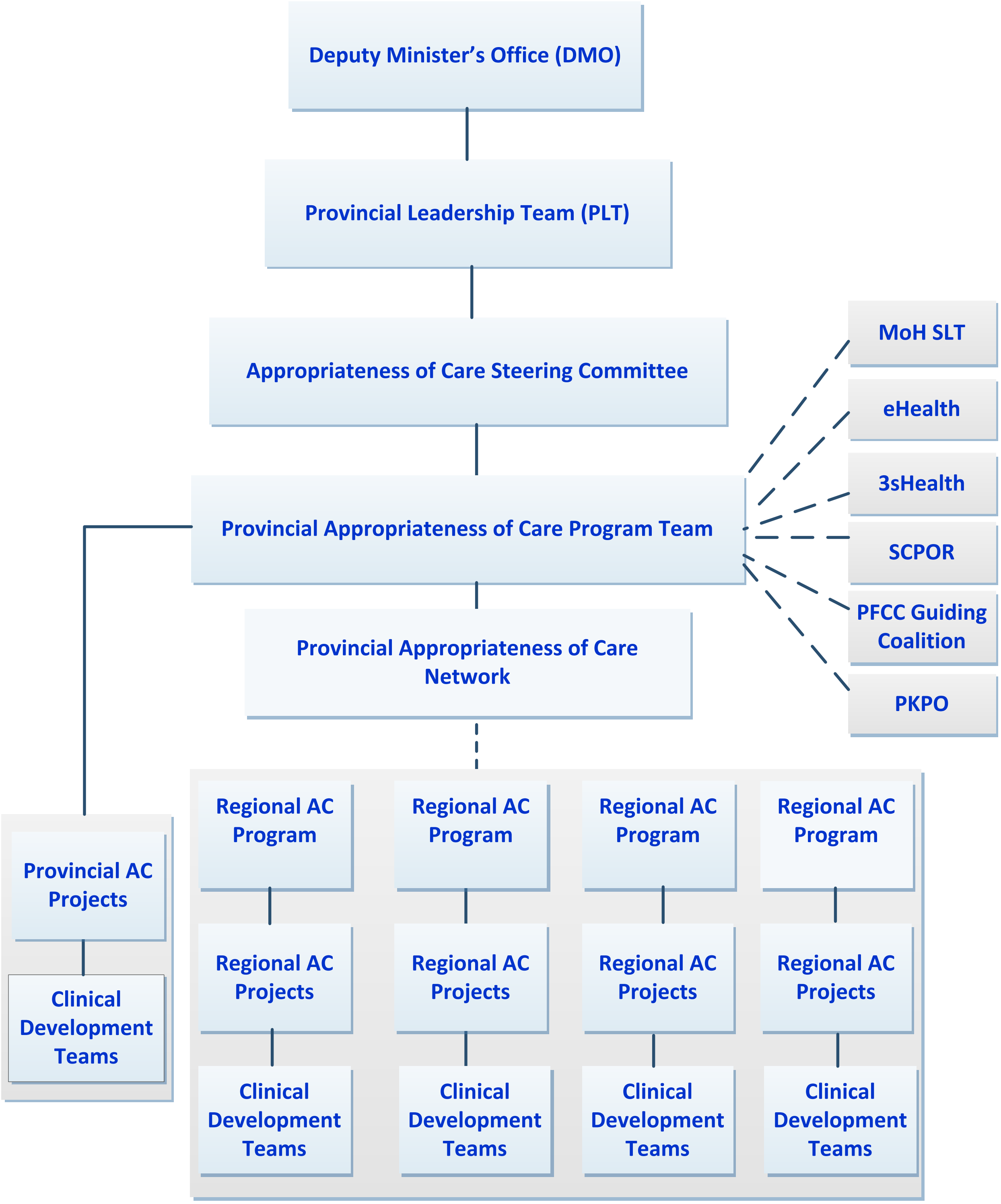
- Additional funding may be required to acquire new software and/or hardware for data capture, analytics, and reporting. Planning and approval for these acquisitions would occur through the Provincial Leadership Team/Central Government strategic planning and budgeting process.

3. Key Messages Regarding Appropriateness of Care and Data Strategy

- The Saskatchewan health system has committed to improving Appropriateness of Care through working collaboratively with our physicians, other healthcare professionals, patients and researchers in embedding the Appropriateness of Care framework into the system.
- Implementation of this program requires that clinicians have access to valuable information to drive continuous learning and quality improvement.
- In order to provide valuable information to clinical groups the Saskatchewan health system requires increased awareness of existing data, sound processes to support data sharing, and human resource support to develop new measurement systems.

- The role of the Appropriateness or Care team is to both provide these tasks and build capacity within the health system to take on this work.
- Data governance and collaboration between multiple organizations is also required.

Appendix E: Provincial Appropriateness of Care Program Governance Structure



Roles and Responsibilities

Individual/Group	Major Responsibilities
Deputy Minister's Office (DMO)	• Ensure that the provincial AC program has adequate resources to achieve deliverables within the targeted timelines • Have decision-making authority and final approval on budget related to the Appropriateness of Care (AC) work including the provincial AC program, the provincial AC Network and AC projects
Provincial Leadership Team (PLT)	• Provide advice and approval on the outcome and improvement targets as well as AC program deliverables • Provide operational support where able for the implementation of provincial AC projects • Identify or recommend clinical areas of focus for selecting provincial AC projects • Help to remove barriers to success of the program.
Appropriateness of Care Steering Committee	• Provide strategic direction and oversight of the program and projects • Has overall decision-making authority and approval of the AC strategic plan and project deliverables (i.e. A3s, business cases, PLT wall walk charts etc.) • Maintains the Ministry, PLT and RHAs support for AC work including the provincial AC program, the AC Network and provincial AC projects • Report to PLT on the progress of AC work (Project Sponsor) • Monitor the progress of the project and provide advice and guidance on any issues and concerns related to the project performance • Be champions of AC work • Work with PLT members and other stakeholders to remove any challenges and barriers to implementing the provincial AC framework and provincial AC projects

Appendix E: Provincial Appropriateness of Care Program Governance Structure

Individual/Group	Major Responsibilities
Provincial Appropriateness of Care Program Team	• Provide recommendations to the AC Steering Committee • Monitor and measure the progress and outcomes • Provide update on the progress to the Steering Committee on a regular basis (e.g. quarterly update) • Develop program and project budgets, manage resources, and resolve program and project issues • Identify and engage supporting partners at the Ministry of Health, PKPO, KPOs/KOTs and other healthcare organizations (e.g. RHAs, SCA, HQC, affiliates, regulatory bodies, unions, educational institutions, SMA, etc.) in achieving project deliverables • Work collaboratively with supporting partners (MoH, SCPOR, eHealth, 3sHealth, RHAs, SCA) and stakeholders (SMA, regulatory bodies, healthcare educational institutions, etc.) to integrate and coordinate all AC efforts across the system • Give advisory support as able to RHAs/SCA and other health organizations regarding their AC programs (e.g. provide facilitation, consultation, data support, and education and training) • Lead, coordinate, replicate provincial AC projects • Communication and involvement around AC (e.g. stakeholder engagement, public awareness campaign, communication, etc.) • Align AC work with provincial priorities and initiatives • Support the provincial AC Network
Provincial Appropriateness of Care Network	• Share information on regional progress on all of their AC work, innovative ideas, success stories, and lessons learned • Reduce any duplication by coordinating AC efforts across the system • Provide suggestions on provincial AC priorities for • Provide an implementation conduit to Regions in provincial AC projects • Encourage health regions and organizations use the common AC Framework methodology for improving AC • Use common indicators where being able to measure the provincial AC outcome and improvement targets

Appendix E: Provincial Appropriateness of Care Program Governance Structure

Individual/Group	Major Responsibilities
Regional Appropriateness of Care Programs	• Select targeted clinical areas for AC projects within their organization • Implement regional AC projects • Work collaboratively with other Regions, the provincial AC Team, and other organizations in order to achieve replication of AC projects • Monitor and measure progress and the outcomes • Provide ongoing communication with their senior leadership team (SLT) and those who will be impacted by their AC projects
Clinical Development Teams	• Participate and develop agreed-upon best practice guidelines, tools and performance indicators for the AC projects • Be champions by communicating and promoting the importance of the project to their colleagues (Distributed Leadership Model) • Trial the project within their own regions (e.g. embedding the agreed best practices, tools and the data system into the clinical workflow) • Continuously improve the agreed-upon best practices and tools using the PDCA methodology • Share outcomes and lessons learned from the development and implementation of the project with others who may benefit from replicating it in their organization • Assist with monitoring, evaluation and auditing of an applicable project

Appropriateness of Care Framework: Toolkit

PatientFirst

Appropriateness of Care: Better Care Made Easier

Version 1: December 4, 2015

Appendix F: Appropriateness of Care Toolkit - Tool # 1

Implementation Process for Appropriateness of Care Methodology

Once the targeted clinical area of focus has been selected, the following implementation steps may be applied to the project.

1. **Establishment of a Clinical Development Team**
   - Identify the physician and administrative lead who will support and oversee the work
   - Identify key "clinical content expert" individuals (other physicians, healthcare professionals, patients, researchers, etc.) who will be involved
   - Identify supporting resources (e.g. analyst support)
   - Identify roles, responsibilities, and time commitments required of members
   - Develop a communication strategy to engage development team members (roles and responsibilities, remuneration etc.)
   - Begin to identify evidence based guidelines and literature that exists within the clinical area of focus
   - Establish a timeline for establishing the development team

2. **Identify improvement opportunities within the clinical area of focus**
   - Map the current state for the selected process and identify areas where there is variation or places for improvement exist
   - The Clinical Development Team prioritizes the project areas and considers whether there is opportunity to address more than one project or agree on one project
   - Set a timeline with an expected date for when the Clinical Development Team should come to an agreement on what their project focus will be
   - Identify techniques for prioritizing projects if there is not a consensus within the group

3. **Establish common agreed practices, tools and data to measure the outcomes and processes**
   - Based on the current state, develop a common agreed practice or future state, allowing for variation where data will be collected to further understand the impact of such variation on patient outcomes

- Discuss importance of measurement to support this work and determine outcome, process and input measures. Include discussion on the importance of Patient Reported Outcome Measures and Shared Decision-Making

4. **Trial the common agreed practices and clinical support/data collection tools**
    - Develop a plan for communication and engagement
    - Develop tools that can collect required data information, but that can be integrated into the workflow and support clinical decision making
    - Identify the scope of the project, for example will this be trialed in one practice group, city, one RHA, or the whole province etc.
    - Implement the agreed practice and tools and complete Plan, Do, Check, Action (PDCA) cycles to understand effectiveness

5. **Monitoring, evaluation and revisions**
    - Develop a learning forum that will review the PDCAs, monitor outcome data and provide reports back to the development team on the common agreed practice. The forum will facilitate required revisions to tools, process, common agreed practice etc.
    - Replicate to other clinical areas or to other organizations (e.g. facilities or health regions to replicate the project)
    - In the new region, facility, or organization where replication is underway, implement the common agree practice, tools, and data collection that were developed in the implementation phase.
    - Continue to monitor, evaluate, and revise, data, tools and the common agreed practice.

Appendix F: Appropriateness of Care Toolkit - Tool #2

Process and Criteria for Selecting Appropriateness of Care Projects

1. Identify potential clinical areas or opportunities for improving Appropriateness of Care within your organization. You may consider the following information when identifying potential areas:
   - Are there any improvement ideas generated by clinicians?
   - Are there high volume clinical processes/cases for which variation has been identified by clinicians or the local system?
   - Are there Appropriateness of Care issues in the targeted regional and health system priorities/hoshins/outcomes areas that need to be addressed?
   - What are the emerging healthcare issues at the regional, provincial and national level?
   - Is there any new evidence from research that needs to be embedded into clinical practices?

2. Identify key elements for the selection criteria that can be used for selecting Appropriateness of Care projects for the coming year (s) (See the Table 1 for suggested selection criteria)

3. Rank each element of the criteria on a scale of 1 - 5 ('5' being the highest and '1' being the lowest) based on the level of importance and potential impact.

4. Assign the weighting scale to individual elements on a scale of 1 - 10 ('10' being the highest and '1' being the lowest) based on the relative importance (See the suggested weights listed below in Table 1).

5. Calculate the scores of individual elements (multiplying the rank with the weight) and then add them all to get the total score for an option.

6. Follow the same process to obtain the total scores for the other options and then compare the scores of all the options to make a decision (See Table 2).

Table 1: Selection Criteria for Appropriateness of Care Projects

	Rank (1-5) (5 being the highest and 1 being the lowest)	**Weighting**	**Score**
Impact on other health regions/organizations (opportunities to collaborate with other regions/organizations)			
Affects a significant portion of the patient population that your organization serves			
Aligned with health system priorities/regional priorities (i.e. hoshins and outcomes)			
Potential for quick wins (easy to implement)			
Relatively low costs for implementation (low investment)			
Significant impact on quality of patient care and safety			
High cost, high volume procedure/treatments or both			
Ability to leverage existing structures to support clinical change (e.g. provider education/training and knowledge of QI methodologies)			
Administrative leadership (Senior Leadership) support			
Availability of clinician leadership/champions			
Evidence-based information/tools available			
Availability of data to identify issues and measure the outcomes			
Total Weighted Score			

Suggested Weights (Maximum Score: 320):

- Impact on other health regions/organizations (opportunities to collaborate with other regions and organization X 5
- Affect a significant portion of patient population that your organization serves: X 5
- Aligned with health system/regional priorities (i.e. hoshins and outcomes) X 5
- Potential for quick wins (easy to implement) X 2
- Low cost of implementation (low investment) X 2
- Significant impact on quality of patient care and safety X 10
- High cost, high volume procedures/treatments or both X 5
- Ability to leverage existing structures to support clinical change X 5
- Administrative leadership (Senior Leadership) support X 5
- Availability of clinician leadership/champions X 10
- Evidence-based information/tools available X 5
- Availability of data to identify issues and measure the outcomes X 5

Table 2: Total Weighted Scores for Individual Options

	Option A	Option B	Option C	Option D
Total Weighted Score				

7. Once one or two clinical areas are selected, conduct an e-scan and literature reviews to identify available best practices and tools, and what other jurisdictions and organizations are doing to address inappropriate care issues in the selected clinical areas

8. Develop business cases for the selected areas using the information collected from the e-scan and literature reviews.

9. Obtain feedback on the business cases from committees or working groups that are part of your organization's Appropriateness of Care Governance and Decision Making structure (e.g. the provincial Appropriateness of Care program has the Appropriateness of Care Steering Committee that oversees the entire program) – individual regions and organizations may have different Governance and Decision Making structure for Appropriateness of Care.

10. Submit the business cases to appropriate the senior leadership team (SLT) within your organization for their review and approval.

Appendix F: Appropriateness of Care Toolkit - Tool #3

Shared Decision-Making: Involving Patients and Families in Treatment Decisions

What is Shared Decision-Making?

Shared Decision-Making (SDM) is a collaborative decision making process shared between patients and their clinicians to make mutually agreed upon healthcare decisions using evidence-based information, patient's needs, values, preferences, and cultural/religious beliefs and background. It requires a two-way information exchange and deliberation between the two parties.

Does Shared Decision-Making Applicable to Any Care Conditions?

SDM is most appropriate for care conditions where there is more than one medically reasonable treatment option (including status quo, "do nothing") with no clear best choice for outcomes. The treatment options for these conditions involve significant tradeoffs in the patient's quality or length of life. Many clinical situations, including cancer care, elective surgery, screening, chronic disease conditions (life style change, medication use), end of life care, mental health, etc., have more than one treatment option. For such situations, the right choice will depend on a patient's own needs, preferences, and values supported by clinician's recommendations or opinions. Providing complete, evidence-based information about different treatment choices can help patients make informed decision.

What are the Components of Shared Decision-Making?

A typical SDM process uses decision support tools designed to facilitate SDM by:

- Providing patients with up-to-date, evidence-based information about their condition and treatment options, including benefits, harms, outcome probabilities and scientific uncertainties;
- Helping patients clarify values and preferences they place on the benefits and harms;
- Guiding patients in deliberation to improve patient involvement in the decision making process; and
- Helping patients make an informed decision.

There are two types of decision support tools: Patient Decision Aids (PtDAs) and Decision coaching/counseling. It is important to understand that decision support tools are not to "replace" counseling from a clinician but to "complement" the clinician's counseling by helping patients prepare to engage in the decision making process and to make informed, value-based decisions with their clinician. They are not intended to advise patients to choose one option over another (IPDAS Collaboration)

Patient Decision Aids (PtDAs)

There are numerous PtDAs developed in a variety of formats from a simple one-page sheet that outlines treatment choices to more detailed pamphlets, booklets, computer programs, DVDs or interactive websites that include filmed interviews with patients and professionals. PtDAs are different from traditional patient information/education materials and clinical guidelines in that they explicitly state what decision is to be made; use the best available evidence to qualify benefits and harms; and help patients deliberate about the options based on their values and preferences (Coulter & Collins, 2011; Deyo, 2001).

Decision Coaching

Decision coaching refers to the process by which a knowledgeable health professional provides a patient with individualized, nondirective guidance to meet decision-making needs in preparation for consultation with the clinician (Stacey et al, 2012). Decision coaching is considered a useful adjunct to clinician counseling, especially when a patient experiences decisional conflict - a state of uncertainty in identifying the best course of action when a patient is confronted with decisions involving risk or uncertainty of outcomes (O'Connor, 1995).

What does a Typical Shared Decision-Making Process Look Like?

The following steps have been identified in the inter-professional SDM (IP-SDM) model developed by the Ottawa Hospital Research Institute. These steps maybe adapted for the routine clinical practices in Saskatchewan.

1. Make it clear to the patient that a decision need to be made;
2. Exchange information about the options, benefits, and harms (PtDAs can be used to provide this information. They can be provided during or after the consultation);
3. Clarify patient's values and preferences (there are questionnaires developed to help clarify patients' values and preferences);
4. Discuss feasibility of the options (e.g. accessibility and costs);
5. Arrive at mutually agreed upon decision (at this step, if the patient and/or families are still not comfortable with decision making, he/she may delegate decision making role to his/her clinician); and
6. Implement the chosen option (for chronic condition management, patients and/or families may require guidance for implementing).

SDM conversations can be provided by any clinicians, including physicians, nurse practitioners, and other healthcare professionals, depending on clinical settings. However, one of the biggest perceived barriers identified by physicians to implementing SDM was "time constraint". For instance, an average physician-patient consultation time is 15 minutes. During this 15 minutes, physicians may have to do multiple tasks, including taking a medical history from the patient, performing a physical examination, making a diagnosis, reviewing concerns, writing a prescription, etc. It can be challenging for physicians to be engaged in the full process of SDM.

To address this time constraint, some organizations or clinical practices have utilized other healthcare professionals, such as nurses, dietitians, social workers, physiotherapists, pharmacists or other appropriate practitioners to provide PtDAs and decision coaching to the patients. In Saskatchewan, patients considering hip or knee replacement surgery are referred to a multidisciplinary clinic where patients receive PtDAs and decision coaching. The designated decision coach creates a decision summary, including patient clinical condition, patient's values and preferences. This decision summary is forward to the surgeon to be used during the next consultation with the patient.

Why Do We Want to Implement Shared Decision Making in Saskatchewan?

There has been a growing interest in SDM around the world as a means of delivering the appropriate treatment to patients through information sharing and empowering them to participate in their own care and decision making. However, there is a significant gap between what patients want and what clinicians think they want in terms of treatment. According to systemic researches conducted on SDM, patients choose differently when they are fully informed about treatment options with their benefits and risks (Stacey et al, 2011). A treatment decision is a function of both medical diagnosis and preference diagnosis. Misdiagnoses of patients' preferences and values can affect not only health outcomes and wellbeing of patients but also costs of the healthcare service delivery (Mulley et al, 2012). There is evidence suggesting that SDM provides benefits not only to patients, but also to providers and the healthcare system:

- **For patients**, SDM improves patients' knowledge of treatment options, satisfaction with the treatment choice and their adherence to their treatment regimes.
- **For providers,** SDM improves quality of consultation and increases trust in the patient-clinician relationship without increasing consultation time.
- **For the system**, SDM can potentially reduce unwarranted clinical variations and ensure that the care patient received is appropriate (i.e. address overuse, underuse, and misuse of healthcare services).

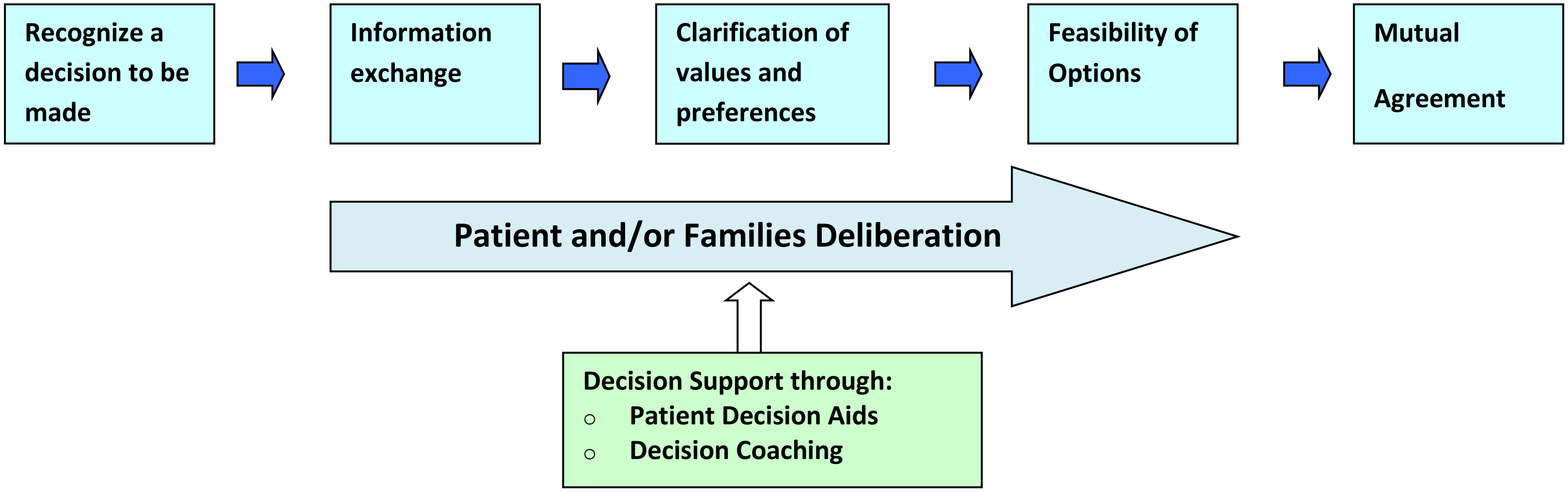
What are the Potential Clinical Areas for Implementing Shared Decision Making?

As part of the Saskatchewan Surgical Initiative, SDM has been implemented in the surgical pathways: hip and knee replacement, prostate cancer treatment, and treatment of pelvic floor conditions.

SDM can be embedded into various other clinical areas within:

- Cancer care;
- Elective surgery;
- Cancer screening (e.g. breast cancer, prostate cancer, colorectal cancer, etc.);
- Chronic disease management (e.g. prescription medications);
- Mental health (depression, anxiety, schizophrenia, etc.)
- Pregnancy and Child Birth (e.g. prenatal testing, child birth, breastfeeding, etc.); and
- End of life care (place of care at the end of life - at home or at a facility, treatments that prolong the life, long-term feeding tube placement for elderly patients, planning care for critically ill patients in the Intensive Care Unit (ICU), Cardiopulmonary Resuscitation (CPR), life support, artificial hydration and nutrition, etc.)

Shared Decision-Making



Recognize a decision to be made

Information exchange

Clarification of values and preferences

Feasibility of Options

Mutual Agreement

Patient and/or Families Deliberation

Decision Support through:

- **Patient Decision Aids**
- **Decision Coaching**

Roles of Patients and/or Families

- Understand the information provided by their clinician (ask questions to the clinician if they don't understand the information).
- Share personal information about their life style, cultural backgrounds and beliefs, values, and preferences that may affect treatment decisions with their clinician.
- Weigh their values and preferences regarding the potential benefits and harms associated with treatment options.

Roles of Clinicians

- Understand the information provided by patients and/or families (ask questions if he/she understands the information) and allow them to exchange their knowledge on other alternative treatment options that are not included in the information (e.g. herbal therapy, acupuncture etc.).
- Ensure that they have fully understood the information and if necessary, provide decision counselling to support them in making decisions.
- Elicit their values and preferences to each option (i.e. what is most important to them).

How to Embed SDM into Appropriateness of Care Projects?

SDM can be incorporated into any Appropriateness of Care projects as long as the targeted clinical areas have more than one treatment option. The following tips can be considered when embedding SDM into Appropriateness of Care projects:

- When the Clinical Development Team maps a clinical flow or patient flow, it is critical to:
  - ➢ Identifying decision points where PtDAs and SDM can be introduced to patients; and
  - ➢ Identifying barriers and facilitators to implementing PtDAs.
- Identify an appropriate PtDA from existing PtDAs[25] or develop a new PtDA and decision support tools (e.g. Ottawa Generic Decision support tool, SURE tool);
- Create a system for PtDA distribution (e.g. who and how to provide PtDAs to patients and/or families, how to ensure they received PtDAs, etc.)
- Determine roles of each healthcare professional (e.g. physician, nurses, physiotherapist, dietician etc.) and staff (e.g. administrative staff, case manager, receptionist, etc.) in embedding SDM in clinical workflow
- Identify progress and outcome measures for SDM and embed them into clinical workflow
- Embed the data as well as PtDAs and decision support tools in the electronic medical record (EMR) to make it easier for clinician to incorporate SDM into consultations with patients.

Potential Measures for Shared Decision Making

Patient Outcomes Indicators

For the patient outcomes, there is evidence that SDM increased patient knowledge of treatment options, reduced their decisional conflict, and increased their satisfaction with the treatment choices. The following measurement tools developed by the Ottawa Hospital Research Institute (OHRI) can be used to measure quality of PtDAs, as well as impacts of PtDAs on patients' knowledge, decisional conflict, and confidence: http://decisionaid.ohri.ca/eval.html.

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[25] Many high performing healthcare organizations around the world, including the National Health Services (NHS) in UK and Mayo Clinic in US, have developed patient decision aids (PtDAs) in various clinical conditions. In Canada, the Ottawa Hospital Research Institute website provides numerous existing PtDAs. Also, US non-profit organizations, such as Healthwise and the Informed Health Decision Making have developed various PtDAs and provide them to various healthcare organizations in US. Currently, patients in Saskatchewan can access various PtDAs through the Healthline Online developed by Healthwise: https://www.healthwise.net/saskhealthlineonline/Content/StdDocument.aspx?DOCHWID=share

Patient Outcomes / Decision Comfort (SURE tool)	Indicators
Patients' knowledge of treatment choices	• # of patients who reported that they understood the benefits and risks of treatment options
Patient's values	• # of patients who reported that they were clear about which benefits and risks matter most to them
Support for patients to make a decision	• # of patients who reported that they had enough support and advice to make a choice
Certainty of the decision	• # of patients who reported that they felt sure about the choice they made for themselves
Total Score	• # of patients who scored 4/4 for these items
Patient Outcome: Satisfaction	**Indicators**
Patient satisfaction with the decision and/or decision making process	• # of patients who were satisfied with the decision and/or decision making process
Decision regret	• # of patients who do not feel regret about the decision made

Provider Outcomes Indicators

In terms of provider outcomes, research indicates that SDM improved the quality of consultation without increasing the consultation time. The following indicators can be used as SDM outcome measures:

Provider Outcomes	Indicators
Quality of consultation	• # of patients who indicated their clinician involved them in SDM • # of consultations in which SDM was observed
Clinician and patient consultation time	• Amount of clinician and patient consultation time spent for SDM compared to usual consultation time
Clinician satisfaction	• # of clinicians reported that they are satisfied with SDM

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Appendix F: Appropriateness of Care Toolkit - Tool #4

Data Development and Measurements for Appropriateness of Care Projects: Data Collection, Analysis and Reporting

Introduction

The purpose of this document is to highlight considerations when trying to identify and access data to support Appropriateness of Care work.

The value of clinical data to drive quality improvement and change is well established: "*We can't change what we don't measure*". Timely tracking and review of patient outcomes over time and visual display of the information can help identify: where outcomes are being optimized and where they are not; where change in outcomes is a result of random variation or true system change; and where and how processes can be modified for positive impact.

Dr. Brent James (Intermountain Healthcare) provides an example of outpatient management of anticoagulation and the importance of visually tracking patient outcomes over time as illustrated in **Figure 1** on page two.

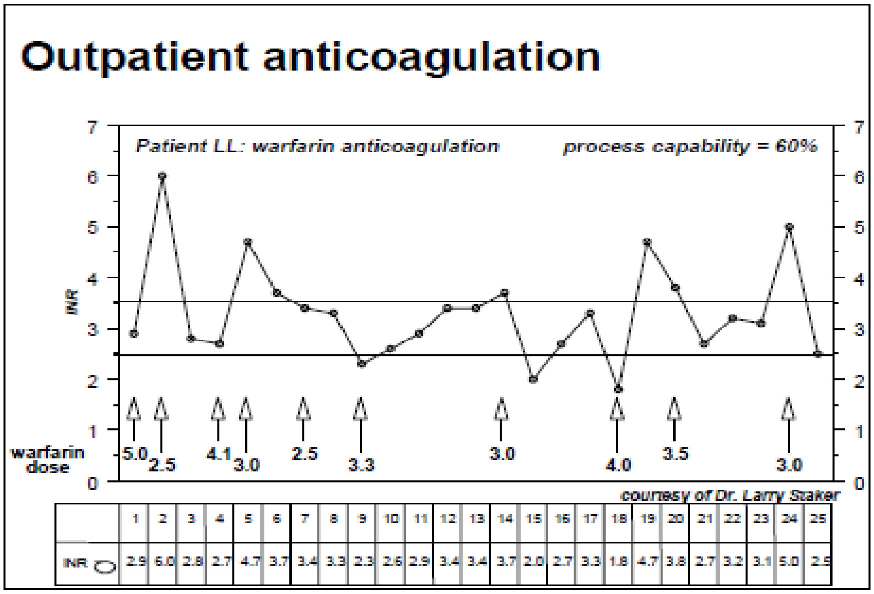
> *Three clinicians in an outpatient clinic managed warfarin but none measured the impact over time of changing the dosage on the desired outcome (INR). Patient LL had their INR checked regularly and it was found to fluctuate. In response to the fluctuations and the INR value falling out of the desired range, the physician would modify the dose. This continued for some time with modifications to the medication dose occurring frequently in response to each INR value. After many dosage alterations and INR fluctuations the physician considered whether there was an appropriate dosage amount and how he could know when to modify the dose to optimize his patient's INR value (outcome). He graphed his patient's INR values over time and annotated his chart with the warfarin dose changes. By graphing the data he could see the trends in the impact of the dosage changes on the INR value and better understand when it was appropriate to change the dosage.*

Experience has shown that clinicians are motivated by both generic data from the literature and more localized data highlighting their own patients and practices.

Health data exists in a variety of datasets and formats in Saskatchewan. Section 2 of this document outlines a few considerations when choosing to use existing data to support Appropriateness of Care work. However, in many situations the clinical data required to support clinical quality improvement is not available. In these cases new datasets are needed. Section 3 of this document provides guidelines for measurement system design and creating new datasets.

The steps in identifying and designing data correspond to the steps in the Appropriateness of Care framework. Where appropriate these links are highlighted in the document.

Figure 1



Intermountain Healthcare

Context Setting (pre-Project) Data

- Identify, within the patient-centered clinical area of focus, preliminary data that could provide some context:
  - Review key literature to identify relevant variables or metrics
  - Discuss key data with development team clinical lead

- Consider where this data will be obtained
  - Provincial administrative databases. (See Appendix I for a list of databases that the Health Quality Council has access to.)
    - As of June 2015, eHealth Saskatchewan is currently creating a catalogue of Saskatchewan datasets (See eHealth Saskatchewan for more information).
  - Health organization data (e.g. Saskatchewan Cancer Agency, Public Health Observatory).
  - Clinical registries or project databases (e.g. Saskatchewan Spine Pathway).
  - Published Saskatchewan literature on the topic
  - Unpublished research with relevant data (e.g. medical student project).
  - Other published reports (e.g. CIHI reports)

- Consider how the data will be analyzed and shared at the development team meeting
    - How many years of data are important to share?
    - What stratifications and potential comparisons are needed (e.g. by health region? by physician? by facility? etc.)
    - Are there particular sub-cohorts of patients of interest?
    - Within the database where this data is housed, what data codes should be considered? (e.g. What specific ICD-10-CA codes would be needed from the Discharge Abstract Database)?
    - How should the data be presented? (tables or graphs)?

- Consider what types of privacy documents are needed in order to access, analyze, and share this data, including data sharing schedules, ethics and patient consent forms. Key contacts for information related to these are (this is not an exhaustive list):
    - University of Saskatchewan Ethics (http://research.usask.ca/for-researchers/ethics/)
    - University of Regina Ethics (http://www.uregina.ca/research/REB/main.shtml)
    - Saskatoon Health Region Operational Approval; (Shawna.weeks@saskatoonhealthregion.ca)
    - Regina Qu'Appelle Health Region Operational Approval; (http://www.rqhr-rps.ca/research-ethics/)
    - Saskatoon Health Region Enterprise Risk Management (re: Data Sharing)

Project Data

Data to track effectiveness of changes

Within a project, clinicians may choose to trial a change in practice to improve patient outcomes, better align with evidence based care or agreed upon standards, and reduce variation. It is important to track the effectiveness of such change to understand how it impacts outcomes and where further change may be needed. If there is variation in how patients are treated within the practice, the impact of such variation on outcomes need to be captured.

The following section outlines a process for identifying metrics to track effectiveness. The detailed data that is often needed to highlight effectiveness and report outcomes may not be available within existing Saskatchewan datasets. New data sets may need to be developed.

Steps for identifying key metrics

Use developed process maps (a key step in helping the development team identify projects within their clinical area of focus to work on) to identify key outcome, process, and input metrics that need to be captured

- *Outcome Metrics:* Clinical outcome information provides a means to evaluate the effectiveness of the treatments in achieving their stated goals. Correspond directly to the outcomes tracked in a randomized control trial. Outcomes fall into three categories:
    - *Physical outcomes:* Correspond to the traditional ideas of quality and equate to 'medical outcomes'
    - *Service (satisfaction) outcomes:* Parallel to health care access and track consumers' subjective perceptions of the interaction between a provider and a consumer.
    - *Cost outcomes:* The resources that a process consumes as it operates.

- *Process Metrics*: Measurable factors that track a process' important outputs include:
    - *Process Metrics:* Represent critical performance steps that are essential to the process' successful operation. Correspond directly to the protocols that control treatments in a randomized control trial.
    - *Input Metrics:* Describe a process' appropriate domain of application. Correspond directly to the eligibility criteria in a randomized control trial.

1) Consider what metrics related to medical outcomes, patient experience and cost are useful to understand what happened to the patient as they went through the process.

2) Consider what areas within the process are important to capture. Focus on key areas where decisions are made and where it may be useful to understand what decision was made and why. Consider areas of variation in practice. Will it be useful to track the details of the step in order to understand differences in practice that may exist (e.g. between physicians) to understand the impact that the various decisions have on the patient outcomes?

3) Consider what characteristics of the patient are important to know. What patient demographics, co-morbidities, or medical and surgical history is important to know as it drives treatment decision making and may impact patient outcomes?

Consider the role of the patient voice in identifying measures

Patient Reported Outcome Measures (PROMs) capture the patient perspectives on quality of life. PROMs are an umbrella term covering a range of survey tools used to obtain reports by patients on their health status, without interpretation by a clinician. Typically PROMs surveys are issued before, and at specific intervals following a health related procedure. Information gathered from the surveys may be indicative of whether or not healthcare interventions or services make a difference to patients' health and quality of life, *from their point of view*. PROMs information is typically collected via self-administered questionnaires on paper or computer, or in-person or telephone interviews, asking patients about symptoms, functionality, and various other aspects of physical, mental, and social health relevant to their quality of life.

Evidence shows that routine use of PROMs has the potential to influence health care. Not only can PROMs help patients and clinicians make better decisions, but can also enable comparisons of providers' performances to stimulate improvements in services and provide information to support evaluation of the efficacy, effectiveness and cost-effectiveness of health care treatments.

PROMs questionnaires may be generic or disease/condition specific. A general and widely accepted recommendation by experts is that generic and disease specific PROMs provide complimentary information.

Generic PROMS are designed to be used in any disease population. The EuroQol EQ-5D, SF Health Survey series and Health Utilities Index (HUI) are the most commonly used generic PROMs surveys. Generic survey tools enable comparisons to be made across different diseases and produce utility scores that can be used to calculate quality of life adjusted years (QALYS) for cost-effectiveness analysis.

Disease or condition-specific PROMs measure outcomes that are of importance for patients with a particular medical condition. They are more sensitive in detecting change over time and differences between groups of patients with the same condition. Condition-specific surveys provide more detailed information that is relevant to the practice of clinicians. An example of a disease specific survey tool currently used in Saskatchewan is the Western Ontario and McMaster Universities Osteoarthritis Index (WOMAC) used to assess pain, stiffness, and physical function in patients with hip and/or knee osteoarthritis. For more information on common PROMS tools:

- EQ5D (http://www.euroqol.org/)
- SF-36 (http://www.rand.org/health/surveys_tools/mos/mos_core_36item.html)

Consider how evaluation of Shared Decision-Making (SDM) and patient experience surveys can be utilized to capture the patient perspective of their journey.

- SDM measures (See the Tool #3: Shared Decision-Making: Patient Involvement in Treatment Decisions)
- Patient Experience Surveys

Consider metrics will be reported back to the group and how it will be used

- How will key metrics be presented (as proportions, raw numbers, etc.).
- How should the metrics be stratified? (Are there important patient characteristics that the metrics should be stratified by?)
- How often should the metrics be updated and shared? (Monthly, quarterly)?
- Who should the reports be shared with?

Consider what data will be needed to report these metrics

- Identify the data needed to report each metrics. Consider whether the data needed are available in existing datasets (consider data sources outlined in section 2b). Experience with other similar projects (e.g. VAWG) highlighted a lack of clinically detailed data within the existing Saskatchewan data sources. The data needed to track patient outcomes and processes may not be available and new data may be needed.
- Consider capturing new data and creating new databases to report the key metrics.

If creating new data, consider how new data should be collected

- **Identify where in the workflow the data needed is generated.** Add detail to the process map about where in the patient process key the information (the data) is captured.
- **Consider how that information could be collected at the point-of-care.** The most sustainable way to collect accurate data is to integrate the data collection process into workflow, collected by someone at point-of-care. Most often, the data needed to generate the metrics is information that is already collected by a clinician throughout the course of treating a patient. Use data for patient (disease management) but also for rolling up for reporting and accountability at the level of individual health professionals, facilities/clinics/practice groups, hospitals, regions and at the provincial and national level. It is important that the right data is collected once, at the point of origin and then used for all applications.
- For example, a physician may collect patient's medical history and co-morbidities in a consult note. This is information that is also needed for key

metrics for this project. Consider standardizing the consult note so that it can still be used by the individual physician to treat the patient, but can also be used for data collection (e.g. modify an open-ended consult note to include standardized check boxes).

- Observe the clinical process, the patient flow, and flow of information. It is valuable to see the process as it happens. Often you may see that the process in reality is different from the process that was described when mapped. Seeing the process in person can help understand where best the information can be captured, integrated into the workflow and transmitted.
- Don't hesitate to start with paper-based data collection. It is likely that new forms will undergo multiple iterations before a final version that satisfies both clinical needs and data collection needs, and it is much easier to modify paper versions.
- It is important to avoid recreational data collection and asking people to collect data that is not needed. Do not collect data that is not needed for metrics, just for the sake of collecting data.

Consider how data will be analyzed and reported

- If able to use existing data consider how often the dataset will be extracted from its data source (monthly, quarterly, and semi-annually). Consider who and how it will be analyzed and how it will be shared with the project team (frequency, formatting, etc.).
- If creating new databases consider how the data will flow from the point-of-care to source that can enter it into a database and analyze it. Options include faxing paper documents, or using a secure file-transfer program (FTP). An FTP is an online program that allows multiple users to access a shared account to upload and download files.
- Similar to using existing data, consider how the new data will be analyzed, reported and shared. Will metrics be reported as graphs or tables? How often will they be shared? Who will the metrics be shared with?

Consider types of privacy documents are needed in order to access, analyze, and share this data.

Consider transitioning to an electronic system

- If new data collection is paper-based consider transitioning it to an electronic system over time. As the project is replicated and spread it may become unsustainable to continue with a paper-based version. Movement to an electronic platform may facilitate ease of data collection, data entry, analysis and reporting.

Saskatchewan Administrative Databases

The following are datasets that can be accessed from the Health Quality Council (HQC). If an interested party requests access to HQC datasets they must follow the HQC requirements for using HQC data. For more information contact Tracey Sherin, Director, Analysis and research Partnerships, tsherin@hqc.sk.ca.

Dataset	Key Variables in Dataset
Person Health Registration System (PHRS)	• Health Services Number (encrypted) • Person year of birth • Sex • Marital status • Registered Indian status • Dates of coverage – initiation and termination • Reason for termination • Status of health insurance coverage • Regional Health Authority where person resides • Current recipients of social assistance
Hospital Discharge Abstract Database (DAD)	• Health Services Number (encrypted) • Year and month of birth • Sex • Residence • Date of admission • Date of discharge • Discharge diagnosis (ICD-9 or ICD-10, all fields) • Procedure codes (CCP or CCI, all fields) • Accident code • Case-mix group • Resource intensity weight • Mortality in hospital flag • Hospital identification number • Hospital category
Institutional Supportive Care System Dataset	• Health Services Number (encrypted) • Type of admission • Date of admission • Date of discharge • Reason for discharge • Regional Health Authority where resident resides
Physician Services Claims File: Medical Services Branch (MSB)	• Health Services Number (encrypted) • Residence • Provider MSB number (encrypted) • Physician specialty • Referring physician

Dataset	Key Variables in Dataset
	• Fee code approved • Diagnostic code (ICD or MSB) associated with service • Service code • Date of service • Number of services • Type of service or major group code • Location of service code • Payment information
Saskatchewan Resident Geography	• Health Services Number (encrypted) • Urban or rural area of residence (based on estimated driving time from the centroid of person's residential postal code to centre of closest city with population > 15,000) • Income quintile • Regional Health Authority where person resides
Resident Assessment Index Minimum Data Set (RAI-MDS)	**Identification Information** • Health Services Number (encrypted) • Unique registration identification • Assessment reference date • Treaty/band • Marital status • Facility number • Province/territory of issue • Responsibility for payment • Reason for assessment • Responsibility/legal guardian • Advanced directives **Demographic Information** • Admission Date • Admitted from/level of care (at entry) • Lived along (prior to entry) • Residential history (5 years prior to entry) • Education (highest completed) • Language • Mental health history • Conditions related to developmental disability status **Cognitive Patterns** • Comatose • Memory • Memory/Recall ability • Cognitive skills for daily decision making • Indicators of delirium periodic disordered thinking/awareness

Dataset	Key Variables in Dataset
	• Change in cognitive status **Communication/Hearing Patterns** • Hearing • Communication devices/techniques • Modes of expression • Making self-understood • Speech clarity • Ability to understand others • Change in Communication/hearing **Vision Patterns** • Vision • Visual limitations/difficulties • Visual appliances **Mood and Behaviour Patterns** • Indicators of depression, anxiety, sad mood • Mood persistence • Change in mood • Behavioural symptoms • Change in behavioural symptoms **Psychosocial Well-Being** • Sense of initiative/involvement • Unsettled relationships • Past roles **Physical Functioning and Structural Problems** • Bed mobility • Transfer • Mobility • Dressing • Eating • Toilet use • Personal hygiene • Bathing • Test for Balance • Functional limitation in range of motion • Modes of locomotion • Modes of transfer • Task segmentation • ADL functional/rehab potential • Change in ADL function **Continence in Last 14 Days** • Bowel continence • Bladder continence

Dataset	Key Variables in Dataset
	• Bowel elimination pattern • Appliances and programs • Change in urinary continence **Disease diagnoses** • Disease and infection diagnoses **Health Conditions** • Problem conditions • Pain symptoms • Pain site • Accidents • Stability of conditions **Oral/nutritional status** • Oral problems • Height and weight • Weight change • Nutritional problems • Nutritional approaches • Parenteral or enteral intake **Oral/Dental Status** • Oral status and disease prevention **Skin Condition** • Ulcers • Type of Ulcer • History of resolved ulcers • Other skin problems or lesions present • Skin treatments • Foot problems and care **Activity Pursuit Patterns** • Time awake • Average time involved in activities • Preferred activity settings • General activity preferences • Prefers change in daily routine **Medications** • Number of medications • New medications • Injections • Days received the following medication **Special Treatments and Procedures** • Special treatments, procedures and programs • Intervention programs for mood, behaviour, cognitive loss

Dataset	Key Variables in Dataset
	• Devices and restraints • Hospital stay(s) • Emergency room(er) visit(s) in last 90 days • Physician visits in the facility the last 14 days or since admission • Physician orders • Abnormal lab values **Discharge Potential and Overall Status** • Discharge potential • Overall change in care needs **Assessment information** • Participation in assessment
Vital Statistics	• Health Services Number (encrypted) • Date of death • Cause of death

Prescription Drug Plan ALLDIN file	• Drug information
	  • Pharmacologic-therapeutic class of drug
	  • Drug identification number (DIN)
	  • Drug active ingredient number
	  • Generic and brand names
	  • Strength and dosage form
	  • Date dispensed
	  • Quantity dispensed
	• Provided information
	  • Prescribed identification number
	  • Dispensing pharmacy number
	• Cost information
	  • Unit cost of drug materials
	  • Dispensing fee and mark-up
	  • Consumer share of total cost
	  • Government share of total cost
	  • Total cost

Prescription Drug Plan Historical Claims	• Health Services Number (encrypted) • Drug identification number (DIN) • Date of dispensing • Quantity of drug dispensed • Drug type (EDS, MSD) • Drug class (Major, minor)
Home Care Dataset	• Health Services Number (encrypted) • Date of admission • Date of discharge • Type of admission • Reason for discharge

Dataset	Key Variables in Dataset
	• Discharge arrangements • Discharge from hospital prior to initiation of home care • Living arrangements before admission • Type of residence before admission • Senior housing • Regional health authority • Out of province flag
Resident Assessment Index Home Care Dataset (RAI-HC)	**Identification Information** • Health Services Number (encrypted) • Province/territory issuing health care number **Demographic Information** • Sex • Aboriginal identity • Marital status • Language • Education (highest complete) • Responsibility / advanced directives • Responsibility for payment **Referral items** • Data case opened / reopened • Reason for referral • Understanding goals of care • Time since last hospital stay • Where lived at time of referral • Who lived with at referral • Prior residential care facility placement **Assessment Information** • Assessment reference date • Reason for assessment **Location of Assessment** • Location of assessment • Facility admission date **Cognitive patterns** • Memory recall ability • Cognitive skills for daily decision making • Indicators of delirium **Communication/Hearing Patterns** • Hearing • Making self-understood • Ability to understand others • Communication decline **Vision Patterns**

Dataset	Key Variables in Dataset
	• Vision • Visual limitations/difficulties • Visual decline **Mood and Behaviour Patterns** • Indicators of depression, anxiety, sad mood • Mood decline • Behavioural symptoms • Change in behavioural symptoms **Social Functioning** • Involvement • Change in social activities • Isolation **Informal Support Services** • Two key informal helpers (primary and secondary)_ • Caregiver status • Extend of informal help (hours of care, rounded) **Physical Functioning** • IADL o Meal preparation o Ordinary housework o Managing finances o Managing medication o Phone use o Shopping o Transportation • ADL o Mobility in bed o Transfer o Locomotion in home o Locomotion outside of home o Dressing upper body o Dressing lower body o Eating o Toilet use o Personal hygiene o Bathing • ADL decline • Primary modes of locomotion • Stair climbing • Stamina • Functional potential **Continence in Last 7 Days** • Bladder continence

Dataset	Key Variables in Dataset
	• Bladder devices • Bowel continence **Disease diagnoses** • Disease and infection diagnoses **Health problems and preventive health measures** • Preventive health services (past 2 years) • Problem conditions present on 2 or more days • Pain • Falls frequency • Danger of fall • Lifestyle (drinking/smoking) • Health status indicators • Other status indicators **Nutrition/hydration status** • Weight • Consumption • Swallowing **Oral/Dental Status** • Oral status and disease prevention **Skin Condition** • Skin problems • Ulcers (pressure/stasis) • Other skin problems requiring treatment • Prior pressure ulcer • Wound/ulcer care **Environmental assessment** • Home environment • Living arrangement **Service utilization** • Formal care (minutes rounded to even 10 minutes) • Special treatments therapies, programs • Management of equipment (in last 3 days) • Visits in last 90 days of since last assessment • Treatment goals • Overall change in care needs • Trade offs **Medications** • Number of medications • Receipt of psychotropic medication • Medical oversight • Compliance/adherence with medications • List of all medications

Dataset	Key Variables in Dataset
	Assessment information • Participation in assessment
Physician Characteristics	• Medical Services Provider number (encrypted) • Flag indicating general practitioner versus specialist • Specialty

Appendix F: Appropriateness of Care Toolkit - Tool #6

Important Documents Regarding Data

1. Data Sharing Schedule.

A Data Sharing Schedule is a legal document between the data owner and the party wishing to use data for a certain purpose. It outlines the terms of agreement for use of the data (data specifics, security, reporting conditions, etc.).

2. Patient Consent

If the project requires creating new databases and collecting new data, patient consent may be required. In most cases, because the data required is standard clinical information collected to treat the patient, consent is needed, not to collect the patient information, but rather to have the information used in another way (e.g. research, quality improvement). An example of a patient consent letter is provided on the following page.

Dear Patient;

As described in the attached brochure, your surgeon is partnering with the Health Quality Council (HQC) of Saskatchewan, a quality improvement organization that works closely with the health system, to better understand and improve the care available to patients in Saskatchewan. The vascular surgeon you are about to see is seeking to collect information on the course of your care. This is routine medical information that your surgeon already collects to assist with your care. Your surgeon has authorized specific personnel at the HQC to provide reports about the health services they provide and *with your consent*, your medical information will be shared, via secure transfer, with those **specific personnel** from the HQC. Your information will be shared and used in accordance with the requirements of the *Health Information Protection Act.*

In addition to your demographic information, diagnosis, medical history and the dates and types of service provided to you, the surgeons would like to collect the following information:

- ***EQ5D Survey – A quality of life survey to tell the surgeon about how your condition affects your daily life***
- ***Patient Satisfaction Survey- For you to tell the surgeon about your experience with receiving care***

Right now, you are asked to complete the *EQ5D survey*. You will be contacted on two occasions by phone and/or email by the personnel from the HQC that have been authorized to access your information, initially three months and then one year after the treatment you receive. In order to follow-up with you, the designated personnel from the HQC will require your contact information (name and phone number or email). The person (s) from the HQC who contacts you is authorized for this role by your surgeon and will be specifically trained to maintain your confidentiality. This survey information will help your surgeon follow up on your recovery as well as enable evaluation of the vascular surgical services available in Saskatchewan.

All information collected about you and your medical condition will be stored in your surgeon's office like the rest of your medical record. Additionally, information provided to HQC will be stored in a secure manner at the HQC. Only your surgeon, their office staff, and those specific individuals from the HQC will be allowed to access any information that directly identifies you. As part of the evaluation of vascular surgical services, the information collected from you may be linked to other health information about you (for example, prescription medications used; hospitalizations) that are collected by the Ministry of Health. This data linkage is done in a manner that protects your privacy by ensuring the information remains de-identified to all except your surgeon and his/her authorized health information service providers.

The information you provide will be kept secure and confidential. Your participation is voluntary. If you decline to participate your care will not be compromised in any way. You may withdraw your consent at any time. However, this withdrawal is not retroactive. If you have any questions please call the number on the brochure, or speak to your surgeon about why this project is important to them.

☐ I understand the information in this letter, and give my consent to the collection and use of information about me for the purposes of monitoring, evaluating and improving care provided by vascular surgeons.

I prefer follow-up contact to be by:
☐ Phone; Phone #: ______________________________ ☐ Email; Email Address: ______________________________
Name: (please print) ____
Signature:____Date (yyyy-mm-dd): ______________________________

Appendix F: Appropriateness of Care Toolkit - Tool #7

Surgical Variation and Appropriateness Working Group (Vascular Working Group)

1. Use of administrative data to identify problem

In 2012, the Saskatchewan Discharge Abstract Database (administrative database) was queried and age-standardized rates of 30 high volume surgical procedures were reported. The rates were stratified based on patient's health region of residence, not where the procedure occurred. A committee of health system administrators, policy consultants, and physician leaders reviewed the report and noted substantial variation in rates of procedure between health regions for some procedures. A Variation and Appropriateness Working Group (VAWG) Physician Group was developed for four clinical areas with variation. One of these groups included vascular surgeons from Saskatoon Health Region and Regina Qu'Appelle Health Region to explore perceived variation between rates of infra-inguinal bypass surgery.

2. Use of administrative data to further understand issue

To understand the root cause of the variation further queries were attempted with administrative databases to get more clinically detailed data. It was identified that the clinically detailed data needed was not available within existing data sets.

3. Processed map to identify key issues and metrics

The vascular surgeons recognized the importance of having this data to better understand patient outcomes and variation in patient populations and treatment process and supported the idea of developing a new data set. The group convened in March 2013 for a full day session. The patient process was mapped (from initial visit with the vascular surgeon through to the decision for medical treatment to follow-up). Variation in physician practice was noted on the process map as a key area to track.

After mapping the process they identified key outcome, process, and input metrics that would be important to capture to further understand patient outcomes. Examples of the key metrics identified include:

> *Outcome Metrics:* % of patients that experience a complication following an invasive treatment
>
> *Process Metrics:* By type, the % of patients that receive diagnostic imaging following a consult.
>
> *Input Metrics:* % of patients seen by a vascular surgeon for consult, by Rutherford classification (disease severity)

5. Considered the data needed to report metrics

The data needed to report each metric was identified. For example, for the process metric, *% of patients that receive diagnosis imaging following a consult* the numerator and the denominator for the calculation were identified.

6. Considered how data will be collected

All of the data required to report these metrics is information that is routinely collected throughout the course of providing care to the patient. It is the information that a physician needs to make treatment decisions (with the exception of Patient Reported Outcomes). Four key areas where physicians collect patient information were identified, and new information sheets that were organized in a standard way to collect data were created. These included:

1. Patient information sheet collected after the initial patient consult with the surgeon. This information sheet captures key patient comorbidities, medical history and next steps regarding treatment.
2. Procedure sheet that captures information about the patient's treatment.
3. Discharge sheet that captures information about the patient's post-procedure experience.
4. Follow-up information sheet that captures information about the patient's post-hospital experience and follow-up.

Additionally, a PROMs information sheet was implemented to capture patient's completed pre-treatment and post-treatment (3 months and 1 year) which reflects the patient's perspective of quality of life.

7. Consider how data will be transferred

A paper based data collection began with using the information sheets in the physician's offices and in the hospital. A flow process for the papers to move from the hospital, to the physician's office for collation, to the Health Quality Council for data entry and analysis was developed. This process involved hospital and office staff.

8. Considered how metrics would be reported back

Individual physician reports were developed to share with each vascular surgeon within the project team. The reports provided their individual data, Saskatoon Health Region and Regina Qu'Appelle Health Region data, and provincial data. These reports included tables and graphs to report the key metrics.

9. Transition to electronic data system

After 12 months using the paper based patient information forms to collect data, conversations with eHealth Saskatchewan were initiated to consider transitioning to an electronic system, which better integrates data collection into the physician's workflow.