TOWARD A QUALITY OUTCOME ORIENTATION TO PRIMARY HEALTHCARE IN NOVA SCOTIA:

Practice Quality Indicator Inclusion And Payment Incentives

CONSENSUS STATEMENT, AUGUST 2012

Primary Care Research Unit | Department of Family Medicine

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Toward a Quality Outcome Orientation to Primary Healthcare in Nova Scotia: Practice quality indicator inclusion and payment incentives. Consensus Statement, August 2012.

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1 DISCLOSURE STATEMENT

Panellist votes and discussion were driven by the information sent to them prior to the meeting, by acceptability and feasibility results derived from an earlier phase of the project and presented during the consensus panel meeting and by their own personal experience. All participants had no financial conflict of interest. All contributed to the discussion and were provided the opportunity to review the statement prior to dissemination.

2 ABSTRACT

2.1 Objective

To bring together a consensus panel of Primary Healthcare (PHC) practitioners, decision makers and stakeholders and, based on the acceptability and feasibility results of Phases 1 and 2 of this study, initiate development of a comprehensive set of recommendations for future PHC quality indicator implementation, payment mechanisms and information technology (IT) needs.

2.2 Participants

The 12 member panel included representation from PHC providers (physicians, nurse practitioners, family practice nurses), key stakeholders with policy development responsibilities and others with IT responsibilities. This included representation from the Nova Scotia Department of Health and Wellness, the Capital District Health Authority and several provincial care programs. An experienced facilitator moderated the process in order to promote equal participation and ensure discussion remained on topic.

2.3 Meeting Process

Prior to the meeting each panel member was asked to review relevant background publications providing information about the international experience of QIs, payment mechanisms and considerations for application in Canada. The meeting began with a review of QIs in general and provision of international evidence and presentation of prepared key questions to be addressed over the next two days. Prior to the discussion of the key questions, background literature and results from the initial two phases of the research study (acceptability and feasibility) were presented. An anonymous formal voting procedure was used for the primary voting questions; secondary questions were discussed in depth by all. A draft consensus statement was circulated shortly following the meeting and panel members were encouraged to provide feedback.

2.4 Conclusions

The panel made recommendations to accept 17 QIs as acceptable and feasible for initial implementation in Nova Scotia and recommended 14 QIs as acceptable to have a payment link associated with their achievement. The enhancement of software to aid in the measurement and reporting of these QIs was emphasized as well as recommendations targeting patient group achievements, mitigating factors, the need for evaluation and the focus of future research.

3 INTRODUCTION

3.1 Background

Health indicators are "standardized measures that can be used to measure health status and health system performance and characteristics across different populations, between jurisdictions, or over time".<1> Such health indicators are "tools" for measuring the quality of care for use in "strategic planning and priority setting, supporting quality improvement and for conveying important health information to the public". Quality of care indicators (also referred to as quality indicators, performance indicators or performance measures) for primary healthcare (PHC) have been developed and subjected to preliminary testing over the past decade in a number of countries worldwide.<2-4> More recently, quality indicators (QIs) for PHC use in Canada have been devised provincially <5> and nationally.<6> The most comprehensive set of indicators was released in 2006 by the Canadian Institute for Health Information (CIHI) and encompass all aspects of PHC practice in response to the objectives of the Primary Health Care Transition Fund National Evaluation Strategy.<6>

The next stage of PHC indicator development in Canada is application. Although in varying use in other countries, broader assessment of the acceptability of including QIs as a component of possible payment strategies for practitioners has not been explored in the Canadian setting. In addition, at the present time, comprehensive data sources do not exist to calculate many of the CIHI indicators.<6> However, it is probable that many of these QIs may be captured in the future with the implementation of fully integrated electronic health records. As such, assessment of the feasibility of the current systems to capture the information required for QI development is required in order to guide modifications to existing data capture strategies and sources.<7>

3.2 Present State of Knowledge

3.2.1 Primary Healthcare in Canada and Nova Scotia

Primary healthcare (PHC) serves as the first point of contact for patients to the Canadian health system.<8> PHC also provides "a coordination function to ensure continuity and ease of movement" through the acquisition of care from other services. Nearly all Canadians (94%) access PHC annually; with the physicians' office the most frequent point of initiation to PHC services.<9> As such, a large portion of our national healthcare dollar goes to support the provision of PHC services.<7>

Increased focus on PHC in Canada began with the federal Health Transition Fund (1997). This was followed in September 2000, by the First Ministers call for improvements. In response, the Primary Health Care Transition Fund (PHCTF) was created by the federal government to support provincial and territorial initiatives.<10> The Romanow Report placed further emphasis on strengthening PHC by recommending PHC become the nucleus of the healthcare system, rather than hospitals, to improve the health of Canadians. Information on the structure of the PHC system, how PHC services are provided, quality of PHC, and the evolution of PHC services is, however, very limited.<6,11>

In Nova Scotia, the "Strengthening Primary Care Initiative" (SPCI) was created to implement and evaluate new models of primary care at four sites.<12> To meet the goals set out by the funders, nurse practitioners were hired to practice collaboratively with family physicians; alternative payment mechanisms for physicians were adopted; and computerized information systems were implemented. The SPCI evaluation of the impact of these interventions provided policy makers, providers and the public with some early information about the quality of PHC in Nova Scotia.<12,13> More recently, our research team has completed baseline assessments of the public's perception of PHC comprehensiveness, accessibility, integration and quality of care in Capital, South West and Pictou County District Health Authorities.<14-16>

3.2.2 Primary Healthcare Quality Indicators

An indicator is an evidence- or consensus-based standardized measure that conveys a dimension of health system structure, healthcare process (interpersonal or clinical) or health outcome.<3> Indicators can be used to: assess performance; monitor health status; provide information for program or policy planning, evaluation and resource allocation; explore equity; "track changes over time"; "identify gaps in health and healthcare";<6> and achieve accountability.<1,17>

The Pan-Canadian Primary Health Care Indicators were developed and selected in a multi-stage process that included an environmental scan, consensus conferences, working groups, pan-Canadian and international consultations and a modified Delphi process.<6> The PHC indicators can be classified into eight domains: "access to PHC through a regular provider; comprehensive care, preventive health and chronic condition management; continuity through integration and coordination; 24/7 access to PHC; patient-centred PHC; enhancing population orientation; quality in PHC – primary prevention, secondary prevention for chronic conditions, patient safety, treatment goals and outcomes; and PHC input and support – health human resources, interdisciplinary teams, information technology, provider payment method".<6> The indicators selected for this study are all included under the "quality in PHC domain", and represent those for which we have the greatest PHC "data-gap" Canada-wide.

Quality indicators (QIs) should be meaningful and easy for end-users to interpret.<18> A "robust" tool to investigate quality of care should include separate indicators relating to all aspects of PHC (screening, prevention, promotion, diagnosis and treatment) and cover a variety of symptoms and diagnoses.<19> Although some of the chosen indicators assessed in this study are outcomes or biological markers, the majority are process of care measures of health promotion, disease prevention, screening, chronic disease management and acute care. Chronic disease management is a top priority for federal, provincial and territorial governments.

There are several advantages to the assessment of process measures over outcome measures.<20,21> It generally takes years to determine if changes in patient care result in improved health outcomes. However, tracking processes of care that have evidence-based links to improved outcomes can reveal a more immediate picture of the quality of care. In addition outcome indicators often need to be risk-adjusted to account for patient characteristics (e.g., co-morbidities) whereas process measures apply only to patients that meet specific criteria obviating the need for complicated risk adjustment strategies.<20,21> Furthermore, practice comparisons are facilitated as smaller sample sizes are required to detect significant differences in process of care measures than are needed to determine differences in outcome measures.<20> It is important to note that adjustment for patient characteristics differences between practices are required no matter which type of measures are used.

Although health outcomes (e.g. hospital admission rates) yield important information about the health of a population, they are not necessarily good measures of performance. Factors such as socioeconomic issues, availability of health services and presence of co-morbidities that impact outcome measures are generally beyond the control of the PHC practitioner.<22> Acceptable quality control measures should be ameliorative; hence, improvement in QI should be within the realm of PHC practitioners.<22> As such our focus was largely on the assessment of process indicators to which improvements are well within the locus of control of PHC providers.

3.2.3 Indicator Acceptability: Phase 1

The use of quality or performance indicators in PHC in Canada will require general acceptance by different stakeholder groups before they can be used. These groups include healthcare providers (family physicians, nurses, nurse practitioners, pharmacists, dieticians, etc.), funders (such as provincial ministries of health who pay for the health services provided) and patients. Patients are best able to report on quality of care domains such as access to and satisfaction with the services provided. They are less able to evaluate the technical effectiveness of the quality of care provided (such as the treatment of diabetes according to the best available evidence). Our previous work on creating the Primary Care Practice Survey meets these patient reporting needs. It is now time to understand the acceptability of QIs to the PHC providers and funders in order to reach agreement on which ones to use and how remuneration might be linked to the indicators.

Indicator acceptance by PHC providers can be a determining factor in indicator utility. Providers, although very interested in providing high quality technically effective care, are somewhat anxious about the implementation of performance measurement in PHC as in other clinical settings. There is, as expected, the risk of feelings of threats to professionalism, autonomy and job satisfaction, especially if the "rules" about the measures are made in isolation by funders.<23> There are also concerns about the measures themselves: are they valid and evidence-based; are there accepted standards for satisfactory performance; can the data be collected in standardized, reliable ways; are there enough patients in the practice to arrive at reliable estimates of performance; is there ability to adjust for confounding patient factors (such as co-morbidities, socioeconomic factors and patient preferences); is the care being measured attributable to the PHC provider and are the data feasible to collect?<23-28> In addition, providers have voiced unease regarding the limited clinical benefit some performance measures may have on outcomes, the lack of weighting of measures, and the unintended consequences on care of conditions which are not being measured.<26,29,30> Finally, belief that improvement in a process measure leads to improvement in outcome is key to provider indicator acceptability.<27,31>

Linking the use of QIs to payment strategies is also new in the Canadian setting. Some experience has been gleaned in other countries. Most notably, the UK has implemented the Quality and Outcomes Framework for general practice in 2005.<32-34> This very large, health system wide natural experiment, provides practices with incentive money depending on their ability to reach certain performance targets with respect to QIs. The indicator set is comprised of both process and outcome measures. Different clinical issues receive different weightings in the re-imbursement amounts. For example, cardiovascular disease with substantial evidence for targets is heavily weighted. Payment is calculated both on achieving patient-based and practice-based activities. Similar efforts have been used in large American health provider organizations such as Kaizer-Permanente and the Veterans' Administration. In Canada, very early efforts are underway in British Columbia and Ontario by paying for efforts toward chronic disease care and some prevention strategies.<35,36> In Nova Scotia, the Department of Health and Wellness has begun the conceptual move to such strategies and is now ready to examine the details necessary before such possible "pay for performance" policies are developed.

However, the acceptability to health providers and funders of the methods used to link pay to performance is not widely described. Issues concerning the acceptability of payment include such things as whether payment should occur at the payment system level, at the provider group level or at the individual physician/provider level; whether there are absolute, relative or threshold performance goals; whether payment should be linked to efforts made for individual patients; and how to adjust for complexity of patients (for example co-morbidities, socioeconomic status or age-sex distributions in practices). Two systematic reviews of pay for performance<37,38> report that such payment appears to have positive but not necessarily large effects on provider behaviour and patient outcomes but conclude much more research is needed. They also report on possible unintended consequences including the possible decline in the quality of care for conditions not included in the indicator initiatives and "gaming" to keep complex or patients less likely to achieve a target out of the calculations. Although studies of implementing pay for performance exist, few were found that report on the providers' and funders' views of the payment strategies used to date.<27,28>

For the first phase of this study we explored the acceptability of a subset of pan-Canadian CIHI QIs as measures of the technical quality of care in PHC and the potential link to payment incentive tools. A modified Delphi approach based on the RAND consensus panel method was used with an expert panel comprised of PHC providers (family physicians, nurses and nurse practitioners) and decision makers with no previous experience of "pay for performance". Using a 9-point Likert scale, panellists rated the acceptability of 35 selected CIHI QIs in community practice and the acceptability of

a payment mechanism being associated with each. QIs rated with disagreement were discussed and re-rated in a face-to-face meeting. The panel rated 19 QIs as 'acceptable' with a final score of greater or equal to seven (Appendix A). The majority of acceptable QIs were process oriented with a focus on prevention. Ten QIs assessed primary prevention strategies, four examined secondary prevention performance, four targeted proxy outcomes (two indicating treatment had been given and two indicating clinical targets were met) and one was a patient safety QI. Acceptable QIs were viewed by most panel members as being evidenced based, timely, under PHC control, easy to measure, clearly worded and with clearly defined criteria.

Payment incentives being associated with these QIs were acceptable for 13. Most QIs rated as acceptable indicators of quality of care tended to also score higher with respect to the acceptability of a payment link. The primary exceptions were associated with QIs assessing performance outcomes such as blood pressure control for hypertension and glycemic control for diabetes where the acceptability of a payment link was rated relatively lower than that for the QI itself. Several factors emerged that were common to the less appealing QIs with respect to payment linkage, many of which have been reported in the literature. For instance, some voiced concern for additional incentives being provided for what is considered the standard of care, the ability to account for patients who refuse care or those with contraindications, the need to adjust for patient mix and interference with the provider-patient relationship by forcing attention away from patient agendas to issues that increased income for the provider. Additional concerns included potential 'gaming' by providers and the assessment of QIs which may be beyond provider control, such as those targeting outcomes and tests that were not readily available.<39>

3.2.4 Indicator Feasibility: Phase 2

Why is a feasibility study a necessary next step in indicator development? In a feasibility study of PHC indicators among 18 practices in the UK, data for all 26 indicators could only be derived at three practices.<40> The median number of indicators derived was 12. The investigators identified several issues in deriving the indicator data, the biggest obstacle being the use of different computer systems by the various practices. Indicator data could not be electronically extracted from some of the systems.<40> Other issues included difficulty in determining diagnosis and controversy among providers over threshold criteria for some interventions. In another UK study conducted to determine the feasibility of devising a primary care database, the frequency of specific events being recorded in computerized patient charts was compared against national rates to determine completeness of recording.<41> Using this method, the level of recording was found to be satisfactory in most practices. Perhaps the difference in the findings of these two

UK studies may be related to the actual indicators that were calculated. Persell et al. have outlined a need to find better ways to routinely collect quality data from electronic health records in the ambulatory care setting in the US.<42> We need to determine if it is feasible to collect PHC process of care measures in Canada.

Aspects of indicator feasibility to consider when field-testing include: a) sample size - is there enough representation to show a difference? b) data sources and c) cost of indicator assessment and dissemination of results.<43> Marshall defines feasibility as both "probable data availability and reporting burden for the provider organizations and national bodies".<44>

"Data must be accessible, valid, complete and relevant."<22> Unfortunately our chart audit experience for the Strengthening Primary Care Initiative (SPCI) and the literature indicate this is often not the case. In an assessment of charting accuracy using standardized patients it was found that all aspects of care provided may not be recorded and sometimes recorded care was not actually given.<45> Correct diagnosis was only recorded 40% of the time. Certain aspects of care such as counselling and prevention activities are less apt to be recorded than are procedures and investigations.<45,46> Thus, audits alone will not capture all indicator data.<46> If information to assess a QI cannot be found in 10% or more charts then that indicator should not be used or the information needs to be collected through a different method.<47> Use of various data sources will provide a better understanding of care provided.<48>

The feasibility of any QI is increased if data can be captured on a routine basis with minimal costs.<31> Much of the data required for evaluating process measures can only be obtained by chart abstraction and/or patient survey.<20> Despite recording issues, the ideal scenario, as other countries have found, is to use computer accessible indicators only.<49> However, although improving, penetration of electronic record systems in PHC is estimated to be relatively low in Canada. According to the National Physician Survey 2004, only 14% of family physicians used electronic records.<50> However these numbers are reported to have steadily increased from 37% in 2009 to 56% in 2012.<51> In Nova Scotia, approximately 40% of physicians (33% in PHC) are current users of an EMR.<52,53>

Nevertheless, Canada Health Infoway had a goal to ensure 50% of the population has an electronic health record (EHR) by 2010<54> and, then this goal was further pushed (January 2006), by Health Council of Canada to 100% of Canadians by 2010.<55> Clearly not yet achieved, such EHRs also require broad uptake of electronic medical records (EMR) into PHC practices.

Given the financial support ministries of health are now giving to PHC practices to advance this process and the clear direction from other jurisdictions that performance measurement requires advanced IT support, Phase 2 of this study examined the feasibility of collecting clinical data, to populate the measurement requirements of the 19 QIs deemed as 'acceptable' in Phase 1, in practices with established EMR systems. Two aspects of feasibility were assessed, implementation feasibility, (the practice can provide patient records for abstraction purposes that can be extracted easily) and measurement feasibility (the QI can be accurately measured in the practice using the EMR). In mathematical terms, implementation feasibility represented the ability to identify the denominator of the QI or the practice population of interest and measurement feasibility, represented the ability to obtain the numerator or clinical information targeted by the QI. Similar to the modified Delphi/RAND approach of Phase 1, a 9-point Likert scale was be used to rate measurement and implementation feasibility. Scores > 7 were considered clearly feasible.

For implementation to be considered feasible, the identification and extraction of the patient population or subgroup of interest for each QI must be demonstrated. This included the ability to limit the practice population to active patients, being with the practice for a specific amount of time, by a specific provider and to a specific time frame (such as the last 24 months). Depending on the QI being evaluated, additional subgroup criterion would include limits by sex, age, health conditions and various exclusion criteria such as past diagnoses. Upon identification of the patient subgroups of interest, the ability to export the data and create a random sample was desired. To demonstrate measurement feasibility, the specific clinical information required to fulfill each QI must be able to be found on the EMR (e.g. blood pressure measures). The ease of finding this information was also considered, for example in a standardized field versus within text- based progress or encounter notes.

Feasibility was examined within six PHC practices and the use of two competing EMR products. Results of this examination suggested relatively poor implementation feasibility. It was not possible to limit the practice population (denominator) by all inclusion and exclusion criteria for any of the 19 QIs under study. Neither EMR product in use were able to limit the search to active patients, being with the practice for a specific amount of time, to a specific time frame (visit within past 24 months) and, at the same time, by sex, age and diagnosis or my multiple conditions. However, it was feasible to limit by provider, patient sex, age and one diagnosis. Only one of the two EMR products had the capability, at the practice level, to export identified records in order to generate a random sample. Factors that facilitated the identification of the patient populations of interest included up to date problem lists, the use of standardized terms, the ability to easily set limits, the ability to choose output factors and quick patient record access following the search.

Results associated with measurement feasibility varied. Most primary prevention QIs such as cervical cancer screening, dyslipidemia screening and influenza immunization were considered as clearly feasible (scores >7). The measurement feasibility of secondary prevention QIs tended to be scored lower. This was primarily due to difficulties finding blood pressure and/or obesity screening information. Scores associated with QIs targeting outcomes scores were variable and was dependent on whether the information required was recorded in a structured field or required a free text search within the notes. In general, measurement feasibility was greatest if the required information was recorded in a specific, standard section of the EMR such as immunizations, laboratory or diagnostic tests and within structured fields. Additional facilitators included the availability of up-to-date proactive care and vitals sections, scanned files of older records (e.g. Immunizations) and consultation reports and limited use of free text to record essential information.

4 METHOD

4.1 Consensus Development

For the third and final phase of the project, consensus methods were used to begin the process of creating recommendations for QI initiatives within PHC in Nova Scotia taking into account the results of the initial two phases of the study. Consensus development is a formal method of bringing together a panel of expert and stakeholder groups to facilitate group decision making by fostering debate and discussion. The ultimate goal, the consensus statement, was developed from the consideration of predefined key questions and with the equal participation of all panel members. <56-58>

To achieve this goal, an 12 member expert panel was assembled which included representation from PHC professionals (family physicians (4), a nurse practitioner, family practice nurses (2)), provincial and regional PHC decision makers (2), provincial chronic disease programs (1) and electronic medical record (EMR) expertise (1). The meeting was moderated by an experienced facilitator and field notes were recorded of the proceedings.

Prior to the meeting each panel member was asked to review relevant background publications providing information about the international experience of QIs, payment mechanisms and considerations for application in Canada. The meeting began with a review of QIs in general and provision of international evidence. Next, key questions which had been formulated in advance by the research team planning committee to be addressed over the next two days were presented. Key questions were grouped according to targeted goals: QI acceptability/feasibility, Payment Incentives and Other Considerations. Prior to the discussion of each group of questions, background literature

and results from the initial two phases of the research study (acceptability and feasibility) were presented. An anonymous voting process followed the discussion of primary key questions. Areas where consensus was not initially achieved were re-addressed until agreement among the majority was reached.

4.2 Key Questions

The following key questions were addressed by the consensus panel:

Acceptability/feasibility

1. Which of the rated quality indicators (QI)s should form an initial set for implementation taking into account the acceptability and feasibility results? *(Primary voting question)*

a. What information technology (IT) and other support systems are recommended in order to enable the ability to permit indicator measurement?

Payment Incentives

2. Of the QIs deemed acceptable and feasible to form the initial set for implementation, which QIs could potentially be linked to a payment incentive? *(Primary voting question)*

a. Are there any additional IT supports required to enable payment incentives to be linked to agreed upon indicators?

b. If the indicator is linked to payment should it be associated with achievement by individual patients or by achievement within a group of patients?

Other Considerations

3. What mitigating factors should be considered in the achievement of quality indicators? (e.g. patient age, sex, co-morbidities, social deprivation)

4. In what direction should future research pertaining to quality indicators in primary healthcare and potential payment incentives be focused?

A formal voting procedure was used for the two primary voting questions. Ballots were circulated following the discussion and debate of the key question and completed anonymously.

For the first primary voting question (key question 1, which QIs should form an initial set for implementation), the panel felt that certain broad assumptions or caveats were necessary before proceeding with recommendations for which QIs should form the initial set for implementation. Caveats agreed upon by the panel were recorded by the facilitator and displayed for all to keep in mind during the voting process.

4.2.1 Accepted Caveats

1. Exclusions: In the measurement of QIs, it would be possible to exclude patients that the provider would consider 'ineligible' from the subgroup of interest (denominator). This could include patients such as those where the service is contraindicated (e.g. allergies, current diagnosis with disease being screened).
2. Mitigating factors: All practice populations are not the same. However, in the selection of QIs it was assumed all populations are equal and differences would be accounted for following measurement when necessary.
3. Software: Assume capacity is available to obtain the data required to populate the indicator.
4. Indicators with multiple requirements: Several QIs require multiple tasks for achievement such as the majority of the secondary prevention QIs. It was assumed that the indicator as a whole would be reported as well as each individual component.
5. Receipt of a test or procedure: Record of an offer of a test or procedure will be considered as being done or received since providers cannot control the patient's compliance.
6. Indicator definitions: QI definitions as currently written are not static but will be updated with changes in practice guidelines.

The first ballot provided panellists with three response options: 1) include the QI for initial implementation, 2) do not include, or 3) a conditional yes. This third conditional option was presented in order to identify QIs which the panellists considered as acceptable but had concerns about practical issues that would first need to be resolved. If this option was selected they were asked to include their concerns in a comment field.

For the second primary voting question (key question 2: which QIs could potentially be linked to a payment incentive) panellists were provided two response options: 1) payment link was acceptable, or 2) payment link was not acceptable.

Agreement for a QI was considered where a single response received more than 50% of votes.

5 RESULTS AND RECOMMENDATIONS

5.1 Acceptability/feasibility

5.1.1 Quality indicator set for initial implementation

Recommendation 1
That 17 quality indicators be included as an initial set for implementation in Nova Scotia. Two quality indicators should be considered for future implementation.

After presentation of the evidence, lengthy discussion and an anonymous vote the following were agreed upon to form the initial set:

Primary prevention

1. Cervical cancer screening (CIHI50)
2. Pneumococcal immunization, 65+ (CIHI42)
3. Breast cancer screening (CIHI49)
4. Bone density screening (CIHI51)
5. Dyslipidemia screening for men (CIHI53)
6. Influenza immunization (CIHI41)
7. Blood pressure testing (CIHI54)
8. Colon cancer screening (CIHI48)
9. Dyslipidemia screening for women (CIHI52)

Secondary Prevention

10. Screening for modifiable risk factors in adults with diabetes (CIHI57)
11. Screening for modifiable risk factors in adults with coronary artery disease (CIHI55)
12. Screening for modifiable risk factors in adults with hypertension (CIHI56)
13. Screening for visual impairment in adults with diabetes (CIHI58)

Outcomes

14. Treatment of dyslipidemia (CIHI61)
15. Blood pressure control for hypertension (without diabetes or renal failure) (CIHI40)
16. Glycemic control for diabetes (CIHI39)
17. Treatment of congestive heart failure (CIHI60)

Panellists felt the remaining two QIs could be considered for potential implementation in the future if practical concerns are addressed. The following two QIs were conditional:

Primary Prevention
1. Childhood immunization (CIHI 44)

Concerns:
The panellists felt that regional differences within Nova Scotia should first be identified. Within some regions of the province, Public Health is responsible for childhood immunizations and therefore less in the control of the PHC provider. Practice records would benefit if public health information could be linked to practice EMRs in the future.

In addition, it was noted that current childhood immunization rates are very close to their maximum threshold in Nova Scotia. It would therefore be difficult to positively impact this QI.

Patient Safety
2. Maintaining medication and problem lists in PHC (CIHI70)

Concerns:
Panellists believed that the definition of the QI as it stood currently required clarification, in particular, how medication and problem lists are to be identified as 'current'. Unlike the other QIs under consideration, this indicator is a measure pertaining to the PHC organization, not a measure of a service provided to a patient by providers. At this time, some panel members were not comfortable with the organizational perspective. There was a suggestion that the EMR should update lists automatically.

Although the panel were encouraged to take into account both the acceptability and feasibility results of the first two phases of the study, an imbalance in how this information was used by the panel when making their recommendations was evident. Acceptability of the QI was viewed by most to be the predominant factor in the selection of an initial set for implementation. Although the measurement of many recommended QIs clearly lacked current feasibility, the panel felt that if acceptable QIs were implemented then requirements to aid feasibility will happen.

5.1.2 Information technology and support system needs

Recommendation 2
That EMR vendors be required to enhance the software programs for use in Nova Scotia to facilitate measurement.

Enhancements included the need to provide standardized structured fields to capture data required to populate the recommended QIs, a shift away from free text boxes, the standardization of terms, automatic prompts, automatic cross population of data, enhanced reporting abilities, reminders, links to other patient data, and ongoing EMR education.

The panel felt it important that structured fields be available (and used) and a shift away from free text boxes for data was required to populate recommended QIs. This would include the availability of drop down boxes to indicate if a procedure or test had been offered, discussed or received. The panel believed that there was a significant difference between the offer and actual completion of a test that should be noted in the patient chart.

The panellists would also like to see the use of free text for clinical reports being sent to the PHC provider be discouraged. For example, notes sent to the primary care physician regarding mammograms could simply state "Normal- repeat in one year", "Normal- repeat in two years", "Abnormal", etc. and be recorded in a drop down type box. Receipt of only the needed information would reduce the amount of data entry time and effort.

Recommendations were made for the standardization of structured fields and terms used for QI measurement within all EMR software being used in the province. Automatic prompts for required clinical manoeuvres (e.g. screening, immunization or testing) were viewed as beneficial particularly if the field was automatically updated when the screen was completed.

At the present time there are multiple locations where the same information may be entered, such as blood pressure. It was recommended that there be only one place such information is recorded or, if alternate locations are necessary, a function which automatically fills or cross populates alternate locations with the same data be available.

An enhancement in the current reporting capabilities of the present EMRs in use today was recommended. This would include a greater ability to identify patient populations by activity, provider, multiple diagnoses and exclusion criterion. Fields provided in the report itself should be flexible and able to be uploaded to alternative software. Evaluation capabilities need be part of the EMR design.

The panel would like to see a system in place, such as check boxes, to act as a reminder to ensure that the patient chart is up to date. This would be particularly valuable with respect to the review of medication and problem lists. Links in the future to information collected by provincial programs (e.g. diabetes, cardiovascular, cancer etc.), Vital Statistics (for death information) and pharmacies was also suggested.

Ongoing IT education was viewed as very important. PHC providers and staff require continual updates and explicit aid to ensure effective and efficient use of their EMR.

5.1.3 Other acceptability/feasibility concerns

The panel was concerned some QIs may be out of their control. For example, a blood collection requisition could be given to a patient for a lab test, but the hours of operation of blood collection clinics may make it difficult for the patient to follow through.

Another concern was the province's move toward patient self-referred procedures such as colon cancer and breast health screening. The panel was clear that this should not mean the physician no longer has a responsibility to promote these screening procedures or the promotion of preventive care. However, it must be noted that the provider does not have control over the end result.

5.2 Payment Incentives

5.2.1 QIs to potentially link to a payment incentive

Recommendation 3
That the Department of Health and Wellness and Doctors Nova Scotia consider the use of payment links for 14 QIs deemed acceptable for that use.

All 19 QIs deemed acceptable and feasible to form the initial set for implementation (17 recommended fully and two conditional) by the panel were discussed with respect to a potential link to payment incentives and brought to a formal vote by ballot.

QIs recommended for a payment link included:

Primary prevention

1. Pneumococcal immunization, 65+ (CIHI42)
2. Breast cancer screening (CIHI49)
3. Bone density screening (CIHI51)
4. Dyslipidemia screening for men (CIHI53)
5. Blood pressure testing (CIHI54)
6. Colon cancer screening (CIHI48)
7. Dyslipidemia screening for women (CIHI52)

Secondary Prevention

8. Screening for modifiable risk factors in adults with diabetes (CIHI57)
9. Screening for modifiable risk factors in adults with coronary artery disease (CIHI55)
10. Screening for modifiable risk factors in adults with hypertension (CIHI56)
11. Screening for visual impairment in adults with diabetes (CIHI58)

Outcomes

12. Treatment of dyslipidema (CIHI61)
13. Glycemic control for diabetes (CIHI39)
14. Treatment of congestive heart failure (CIHI60)

The following indicators did not reach a payment link consensus, three of which resulted in a tie.

Primary Prevention

1. Influenza immunization (CIHI41)
2. Childhood immunization (CIHI 44)
3. Cervical Cancer Screening (CIHI 50)

Outcomes

4. Blood pressure control for hypertension (without diabetes or renal failure) (CIHI40)

Patient Safety

5. Maintaining medication and problem lists in PHC (CIHI 70)

The topic of payment incentives or pay-for-performance in PHC can be relatively controversial and hence garnered much discussion. It was noted that within other industries people are rewarded for a job well done and perhaps this should be viewed in the same way.

Panellists agreed that incentives should be directed toward areas where improvement is most required. They noted that for some activities measured by the QIs under discussion, additional fees were already being applied in Nova Scotia, such as influenza immunizations and cervical cancer screening. They also voiced common concerns raised by others with respect to potential gaming, disruption of the patient-provider relationship and concerns about responsibility for QI achievement among patients with multiple providers.

Further discussion of the three QIs, where voting resulted in a tie, followed presentation of the voting results. Concerns were noted. However, due to the absence of two panellists at this time, a second vote was not initiated.

Primary Prevention: Cervical Cancer Screening (CIHI 50)
Discussion: Panellists wishing to retain this indicator for a payment incentive noted this screening procedure was effective and very much in the control of the PHC provider. In addition, current screening rates are relatively low and therefore there is room for improvement. Panellists voting against the indicator being associated with payment noted that cervical cancer screening currently has financial incentives in place. Others believed this a fundamental procedure and should be performed without additional pay. During discussion, it came to light that many on the panel were not aware of the under screened areas and did not consider the impact of an incentive in these areas. Such knowledge prior to vote may have influenced their initial response.

Outcomes: Blood pressure control for hypertension (without diabetes or renal failure) (CIHI40)
Discussion: Panellists took issue with the definition of the indicator. They suggested that a patient with hypertension should have multiple measures in a feasible timeframe and the indicator should encompass that.

Patient Safety: Maintaining medication and problem lists in PHC (CIHI 70)
Discussion: Although the panel felt maintaining medication and problem lists was very important and fundamental to patient safety, there were questions about the definition of words used in the description of the indicator itself, in particular, how 'current' will be defined and what is considered an 'organization' (see Appendix A for definition). Many believed software changes would prove valuable to maintain up-to-date lists. Because this QI targeted the organization, not a service provided to a patient or client, some considered it as reflecting system integration more than quality of care or performance.

5.2.2 Additional IT supports to enable payment incentives to be linked to agreed upon indicators

Recommendation 4
That a clear, standardized and user friendly process be implemented for facilitation of data extraction and submission of indicator information.

The panel discussed the ease of extracting the data for payment in the current system. The point was raised that if the extraction of data was too difficult or time consuming then the physician may choose not to take the incentive, but rather use that time to bill for another patient visit.

The need for increased education for providers about the capability of the EMR was also voiced. If providers felt more confident and empowered in their EMR usage they may be more likely to take the incentive. The panel felt that perhaps the EMR vendor could be involved. When a new incentive begins the EMR should be ready to document the information required.

As previously noted, structured fields for data entry would facilitate information being recorded in the necessary location for extraction. Prompts could remind the physician about important QI requirements to be checked each visit, particularly those pertaining to targeted conditions.

A tool or method providing the identification of the practice population, practice demographics and patient subgroups of interest was raised as an important issue. The panel believed that physicians knowing the population they are responsible for is important for establishing a baseline in order to assess future change.

The issue was raised that linking payment to performance will require a fundamental shift in funding. More than just billing data will be required. The panel was concerned about patient and provider privacy. This raised the issue of who would provide/extract the data for quality indicator measurement (i.e. the practice or the funder).

5.2.3 Payment link to achievement by individual patients or by achievement within a group of patients

Recommendation 5

That the Department of Health and Wellness and Doctors Nova Scotia consider indicator achievement as it occurs within a group of patients and as opposed to achievement by individual patients.

Some panellists believed that payment on an individual patient level was "pay for delivery" not "pay for performance". Providers are already paid for healthcare delivery and incentives should be used to impact the health status of the population.

Concern was expressed about the equitable distribution of any incentive in a collaborative practice when there are multiple providers of care paid in a variety of ways (e.g. family practice nurses, nurse practitioners, etc.).

5.2.4 Other payment incentive concerns

Concerns were raised regarding the types of practices that would be targeted for the incentives. Practices in certain communities may have much room for improvement, while others already provide a very high standard of care. A mixed model approach may be necessary where practices are rewarded for achievement of a certain benchmark or a certain improvement in patient care. The panel believed that flexibility would be needed in order to help practices who need it but to also challenge practices that are already doing well.

How a QI would be assessed as achieved was raised. The majority preferred consideration of relative change as opposed to absolute change or the attainment of a set benchmark.

The point was raised that incentives for QIs need to be timely and transparent. Incentives need to be prospective instead of retrospective; that is, healthcare providers need to know of the incentive guarantee with enough advance warning to permit achievement of the targets.

A possible structure was suggested for the trajectory/evolution of payment incentives.

EMR for Performance
↓
Standardize for Performance
↓
Measure for Performance
↓
Compare for Performance
↓
Pay for Performance

Some panellists believed that work must be done on the QI implementation before payment is linked. If the average EMR user is not skilled enough it may cost more, in terms of their time, to have an incentive than to not.

Other forms of incentives

The panellists believed it was important to discuss other types of incentives other than financial that could be used to advance quality of care. Feedback to the provider regarding their quality of care was considered as a motivator for change. Others suggested incentives such as reports about the community's health status, educational opportunities (times/costs), additional practice resources such as a dietician, practice manager and a health and wellness program for the providers themselves. The panel believed EMR education and support as well as public recognition for reaching targets (e.g. plaque in the office) could also act as motivators for change. Additional potential incentives noted were locums, support for practices that were moving on to furthering their next QI, and incentives to patients for desired behaviours. Some felt there should be a distinction between an incentive and a reward for having achieved targets as measured by the indicators.

5.3 Other Considerations

5.3.1 Mitigating factors

Recommendation 6
That migrating factors be considered where possible and the identification of adjustment strategies be the topic of further research and debate.

Mitigating factors identified by the panellists included a wide range of patient, social, cultural and societal factors. Patients within a practice differ, people within a community differ, communities within a region differ and regions within the province differ. Because of these differences adjustments made should be dependent on the purpose of QI measurement, such as an evaluation of within practice change, comparison across practices in the same region or comparison across regions and systems. At the same time the panel expressed concern not to 'adjust away' differences between practices that require individual attention.

5.3.2 Future Quality Indicator Research

Recommendation 7
That the processes and application of a quality orientation to Primary Healthcare in the practice setting be evaluated prior to system wide implementation and that future research focus on implementation, process needs and impacts associated with indicator achievement feedback.

Panel suggestions pertaining to quality in PHC included an examination of incentive types meaningful to providers, the need for knowledge transfer and exchange and the impact of quality of care practice feedback ('report card') on future provider care. Also suggested was a study asking why quality initiatives currently offered by the province are not being embraced.

5.4 Other Important topics raised by panellists

The panellists believed that EMR education for a new generation of healthcare providers was important. It is important to remember that this new generation has not been exposed to paper charts and therefore do not necessarily view the EMR as primarily a paper substitute. It is important that those more familiar with the past 'paper-only' ways do not bias this future generation with their personal issues and preferences. At the same time, we must also be wary of teaching or using too many 'care' templates to ensure new doctors maintain their medical training and skills.

Some panellists believed that there may be areas of unintended risk with the implementation of QIs in PHC practices. It is possible that there could be unintended consequences of technology such as less conversation with patients due to the over availability of information and stringent indicator measurement affecting patient care.

6 CONCLUSIONS

Following a review of relevant literature, acceptability and feasibility study results and extensive reflection and discussion, the 12 member panel that represented a range of PHC professionals reached consensus on seven recommendations they felt would help enable Nova Scotia to move forward with a quality orientation to PHC.

Seventeen of the 19 initial QIs were agreed upon as acceptable and feasible to form an initial set for implementation in Nova Scotia. From their focus, it was evident the panel viewed acceptability of the QI as the most important factor in this selection. The lack of current feasibility for the measurement of some QIs was viewed as a problem that would be remedied with the implementation of QIs in practice. This view was reflected in the list of agreed upon caveats prior to selection and highlighted by subsequent recommendations of enhancements to current EMR software as a requirement to facilitate QI measurement. Evaluation capabilities were viewed as necessary for future EMR design.

Payment or incentive linkages were agreed upon for 14 QIs and included the recommendation for a clear, standardized and user friendly process to obtain and submit the required information. The panel agreed any incentive should be associated with QI attainment within a group of patients and not by individual patients. The majority preferred consideration of relative change as opposed to absolute change or the attainment of a set benchmark to mark QI achievement. The panellists believed it was important to discuss other types of incentives other than financial that could be used to advance quality of care.

Mitigating factors were viewed as very important and felt further research and debate was required in order to identify adjustment complexities. Before the widespread implementation of QI and incentive schemes, it was recommended that the processes and application of a QI orientation to PHC practice first be evaluated.

7 CONSENSUS DEVELOPMENT PANEL

Please note that opinions expressed by each panel member were their own, given their role experience, and not to be viewed as representative of the organization to which they belong.

Lewis Bedford (Capital Health, Primary Healthcare)
Ian Bekker (Family Physician)
Deborah Dicks (Community Nurse Practitioner)
Rick Gibson (Community Family Physician; Capital Health Family Medicine Chief)
Lisa Grandy (Director, Primary Healthcare, Nova Scotia Department of Health & Wellness)
Ajantha Jayabarathan (Community Family Physician)
Alethea Lacas (Academic Family Physician)
Lisa Napier (Program Manager, Primary Health Care Information Management, Nova Scotia Department of Health)
Jennifer Payne (Dalhousie University, Capital Health Diabetes Care Program)
Patsy Smith (Family Practice Nurse)
Elizabeth Smith (McCrossin) (Family Practice Nurse)
Christine Tompkins (Capital Health, Primary Healthcare)

8 PLANNING COMMITTEE

Fred Burge (Principal Investigator) MD, FCFP, MSc, Research Director, Dalhousie Family Medicine
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APPENDIX A

Quality indicators deemed acceptable in Phase 1

Indicator and definition provided by the Canadian Institute for Health Information (CIHI)

Primary prevention

Childhood immunization (CIHI44)
% of PHC clients/patients who received required primary childhood immunizations by 7 years of age.

Cervical cancer screening (CIHI50)
% of women PHC clients/patients, ages 18 to 69 years, who received papanicolaou smear within the past 3 years.

Pneumococcal immunization, 65+ (CIHI42)
% of PHC clients/patients, 65 years and over, who have received a pneumococcal immunization.

Breast cancer screening (CIHI49)
% of women PHC clients/patients, ages 50 to 69 years, who received mammography and clinical breast exam within the past 24 months.

Bone density screening (CIHI51)
% of women PHC clients/patients, 65 years and older, who received screening for low bone mineral density at least once.

Dyslipidemia screening for men (CIHI53)
% of men PHC clients/patients, 40 years and over, who had a full fasting lipid profile measured within the past 24 months.

Influenza immunization (CIHI41)
% of PHC clients/patients, 65 years and over, who received an influenza immunization within the past 12 months.

Blood pressure testing (CIHI54)
% of PHC clients/patients, 18 years and over, who had their blood pressure measured within the past 24 months.

Colon cancer screening (CIHI48)

% of PHC clients/patients, 50 years and over, who received screening for colon cancer with Hemoccult test within the past 24 months.

Dyslipidemia screening for women (CIHI52)

% of women PHC clients/patients, 55 years and over, who had a full fasting lipid profile measured within the past 24 months.

Secondary prevention

Screening for modifiable risk factors in adults with diabetes (CIHI57)

% of PHC clients/patients, 18 years and over, with diabetes mellitus who received annual testing, within the past 12 months, for all of the following:

- Hemoglobin A1c testing (HbA1c);
- Full fasting lipid profile screening;
- Nephropathy screening (e.g. albumin/ creatinine ratio, microalbuminuria);
- Blood pressure (BP) measurement; and
- Obesity/overweight screening.

Screening for modifiable risk factors in adults with coronary artery disease (CIHI55)

% of PHC clients/patients, 18 years and over, with coronary artery disease who received annual testing, within the past 12 months, for all of the following:

- Fasting blood sugar;
- Full fasting lipid profile screening;
- Blood pressure measurement; and
- Obesity/overweight screening.

Screening for modifiable risk factors in adults with hypertension (CIHI56)

% of PHC clients/patients, 18 years and over, with hypertension who received annual testing, within the past 12 months, for all of the following:

- Fasting blood sugar;
- Full fasting lipid profile screening;
- Test to detect renal dysfunction (e.g. serum creatinine);
- Blood pressure measurement;
- Obesity/overweight screening

Screening for visual impairment in adults with diabetes (CIHI58)

% of PHC clients/patients, 18 to 75 years, with diabetes mellitus who saw an optometrist or ophthalmologist within the past 24 months.

Outcomes

Treatment of dyslipidema (CIHI61)

% of PHC clients/patients, 18 years and over, with established CAD and elevated LDL-C (i.e. greater than 2.5 mmol/L) who were offered lifestyle advice and/or lipid lowering medication.

Blood pressure control for hypertension (without diabetes or renal failure) (CIHI40)

% of PHC clients/patients, 18 years and over, with hypertension for duration of at least one year, who have blood pressure measurement control (i.e. less than 140/90 mmHg).

Glycemic control for diabetes (CIHI39)

% of PHC clients/patients, 18 years and over, with diabetes mellitus in whom the last HbA1c was 7.0% or less (or equivalent test/reference range depending on local laboratory) in the last 15 months.

Treatment of congestive heart failure (CIHI60)

% of PHC clients/patients, 18 years and over, with CHF who are using ACE inhibitors or ARBs.

Treatment of dyslipidema (CIHI61)

% of PHC clients/patients, 18 years and over, with established CAD and elevated LDL-C (i.e. greater than 2.5 mmol/L) who were offered lifestyle advice and/or lipid lowering medication.

Blood pressure control for hypertension (without diabetes or renal failure) (CIHI40)

% of PHC clients/patients, 18 years and over, with hypertension for duration of at least one year, who have blood pressure measurement control (i.e. less than 140/90 mmHg).

Glycemic control for diabetes (CIHI39)

% of PHC clients/patients, 18 years and over, with diabetes mellitus in whom the last HbA1c was 7.0% or less (or equivalent test/reference range depending on local laboratory) in the last 15 months.

Treatment of congestive heart failure (CIHI60)

% of PHC clients/patients, 18 years and over, with CHF who are using ACE inhibitors or ARBs.

Patient safety

Maintaining medication and problem lists in PHC (CIHI70)

% of PHC organizations with a process in place to ensure that a current medication and problem list is recorded in the PHC client/patient's health record.