

# **Empower, Enable and Encourage: Successfully Implementing Performance Management in Public Health**

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## Key Take Home Messages

1. Performance Management systems experience three phases of development: design, implementation and ongoing use. Research evidence supports building separate strategies for each phase.
2. While technical/system factors are important for successful design, organizational/political factors are more influential for successful implementation and ongoing use.
3. The main drivers for successful implementation are top management commitment to performance management goals and good system design.
4. An effective performance management system focuses on a relatively small number of measures that are simple, straightforward and address strategic and departmental priorities.
5. Stakeholder involvement during design facilitates system acceptance and implementation. Staff must be involved in the development of their own system, educated and trained on the measures, tools and procedures and be provided with opportunities and motivation to use the data provided by the system.
6. A quality improvement model that emphasizes learning offers greater potential benefit for managing performance than an assurance model which emphasizes external accountability.

# **Executive Summary**

## **Research Question**

The purpose of this review is to identify organizational and system factors that influence successful implementation of a performance management (PM) system in public sector organizations.

## **Context**

While Peel Public Health has traditionally used data to assess services, the use of such information varies widely across the department. Consistently measuring how well the organization is performing is a core feature of doing business the 'public health way'. The findings of this review will provide the Performance Management Steering committee with evidence-informed approaches to successfully implement a PM system.

## **Methods**

A search of electronic databases and the grey literature was conducted. The search was limited to literature published in English from 2000 to the present and resulted in the retrieval of 17 studies relevant to the research question. Following critical appraisal of 7 of these studies, 5 were included in this review: three systematic reviews and two books.

## **Key Findings**

Implementation of a PM system requires organizations to address design, implementation and ongoing use, with separate strategies required for each phase. Successful implementation depends on adherence to 14 guiding principles:

## **Design Phase**

1. Use a quality improvement PM model for greater organizational benefit.
2. Ensure the system demonstrates explicit links to an organizational strategy.
3. Select appropriate measures and targets to ensure successful implementation and use.
4. Select processes that encourage stakeholder involvement to influence acceptance of the system and future implementation.
5. Enhance organizational capacity at the beginning of the PM process.

## **Implementation Phase**

6. Include internal mechanisms for coordination and accountability.
7. Stage implementation in manageable steps.
8. Include communication mechanisms that encourage feedback, dialogue and participation.
9. Ensure top management commitment to the PM strategy.
10. Build on the skills of managers, consider their professional needs and use PM as a tool for management decision-making and learning.

## **Ongoing Use**

11. Build in flexibility and monitoring processes to allow for course corrections and continuous improvements.
12. Develop integrated processes that support use of data.
13. Integrate PM systems with other management practices.
14. Develop change management strategies that build trust.

## **Conclusion**

The findings of this review reveal 14 factors during design, implementation and ongoing use of PM systems that contribute to successful implementation.

# 1 Problem Statement

While Peel Public Health has traditionally used data to assess the success of services, the use of such information varies widely across the department. Consistently measuring performance is a core feature of doing business the ‘public health way’. Many organizations that have attempted to implement performance management (PM) systems have failed, an outcome often attributed to inappropriate design and implementation challenges<sup>1</sup>. A current state assessment of performance management conducted at Peel Public Health from 2009 to 2011 identified three pervasive problems: i) lack of accessible performance data on which to base program decisions, ii) inconsistent use of available data to make program decisions and iii) lack of a common language, process or tools for managing performance across the department.<sup>2</sup> The purpose of this review is to support the work of the PM Steering Committee by identifying evidence-informed approaches to implementing a successful PM system at Peel Public Health.

## ***Anecdote***

The question raised by the Steering Committee was: *“What will be different about the PM initiative at PPH?”* Preliminary discussions with the Public Health Management Team (PHMT) revealed negative encounters with previous PM experiences, often doing more harm than good. The prevailing themes through these discussions can be summarized by the following quotes: “We cannot use a cookie cutter approach.” “This cannot be a useless paper filling exercise.” “This is not about accountability; it has to be a meaningful tool for us.” In public health, as Dr. Mowat often reminds staff, “We must always be ready to demonstrate benefit”. The PM Steering Committee decided to consult the literature to identify factors that would enhance its success.

## 2 Context

Peel Public Health has an obligation to maximize public benefit through the effective and efficient use of resources to achieve public health outcomes. In 2009, performance management (PM) became one of five strategic infrastructure priorities within the ten-year strategic plan. As an infrastructure priority, managing performance operationalizes a core principle of doing business the “Public Health Way”. Performance Management initiatives are also happening in the broader environment. The Ministry of Health and Long-Term Care (MOHLTC) has implemented a PM system to evaluate the delivery of public health programs. The system includes a reporting process for 14 indicators based on the Ontario Public Health Standards.

As well, the Region of Peel introduced the Integrated Planning Framework Program (IPFP) in the Fall of 2009. The PM Steering Committee has reviewed these initiatives, and where appropriate, builds on the best ideas to avoid duplication of efforts. A recent current state assessment<sup>2</sup> identified core strengths that support a PM initiative, including a culture that values the use of data for decision-making, and a history of setting goals and divisional strategic priorities. However, areas of improvement identified in the report include the need for:

- stronger links between strategic goals and program objectives
- a clear and unified process for the selection of performance measures
- easily retrievable raw data
- a common process and tools for managing performance across the department.<sup>2</sup>

Performance measurement refers to the process of collecting and reporting on information, whereas performance management is a cyclical approach to management that integrates strategy,

resources, processes, measurement and reporting to set direction and make decisions. The goal of the PM Steering Committee is to develop and implement a system that will lead to organizational and program improvement and, ultimately, to the improved health of the population.

### 3 Conceptual Framework

A scoping review broadly identified factors that would influence the design, implementation and sustainability of PM systems. The factors were grouped into external factors (e.g. MOHTLC policies), organizational factors, PM system factors and general management processes. The focus of the PM Steering Committee was on implementation factors, and specifically those factors that would be within the influence of the steering committee: organizational factors and PM system factors. (Refer to Appendix A). While acknowledging the role of the external environment on PM, the committee agreed that these factors are largely outside of our control. General management processes were also defined as out of scope for this review.

### 4 Literature Review Question

Our research question is:

*What are the organizational and PM system factors that influence the successful implementation of PM within public sector organizations? (See Appendix G for a glossary of terms).*

In PICO format, this research question is:

Population (P)	Public Sector Organizations
Intervention (I)	PM System
Comparison (C)	No interventions
Outcome of Interest (O)	Factors that influence implementation (i.e. organizational and PM system factors)



## 5 Literature Search

The databases used in the search were OVID Medline, PsycInfo, Health Star, Global Health and the Cochrane Library; EBSCO's CINAHL, Health Business Elite, and Proquest's ABI Inform.

The search was limited to papers published in English from 2000 to the present. Other limiters within ABI Inform included books, reports, scholarly journals and systematic reviews.

The search also included hand searching of reference lists and specific business management journals. A search of the grey literature was also conducted by reviewing topic specific websites (e.g. websites for Schools of Management and PM). Emails and phone consultations with two PM experts from the Cranfield University, School of Management Centre for Business, Bedfordshire, UK. Performance also provided leads for both published and grey literature (Mike Bourne, MBA, PhD, Professor of Business Performance and Pietro Micheli, PhD, Senior Lecturer in Organizational Performance). There is currently no consensus in the PM literature on "intervention" search terms, therefore the search also included a number of related terms such as "performance measurement" and "performance evaluation". The Balanced Score Card is the PM framework most studied in the literature and was therefore included as an intervention search term. Details for the online and grey literature search strategies are found in Appendix C.

## 6 Relevance Assessment

Two reviewers assessed relevance based on title and abstract. Discrepancies were resolved by discussion. Papers were included or excluded based on the following criteria:

Inclusion:

- Main focus on PM Implementation: Organizational or system factors identified
- Systematic reviews, literature reviews, case studies involving several organizations

- Quantitative or qualitative studies
- For-profit/business organizations if there was potential application to a public sector environment (e.g. primary studies include a range of work environments with multiple objectives and services)

Exclusion:

- Performance Appraisals/Human Resource PM Systems
- Studies from non-Western contexts (e.g. developing countries, Asia, Eastern Europe)
- Small case studies
- Opinion, theoretical or conceptual papers

## 7 Search Results

The search yielded 295 studies, 278 of which did not meet the relevance criteria (based on title review). The remaining studies (17) were retrieved and assessed (full-text) based on adherence to the previously established inclusion criteria, resulting in 10 of these studies being excluded. One systematic review was included for review after the original search process, based on an emailed communication from one of the authors. Seven studies including three systematic reviews, two literature reviews and two books (one book in its entirety and one chapter) were assessed for quality. (Refer to Appendix C for the Search Flowchart).

## 8 Critical Appraisal

Two reviewers critically appraised the seven studies independently.<sup>1</sup> The two textbooks were assessed by the draft textbook/textbook chapter appraisal worksheet adapted internally.

Following independent appraisals, discrepancies were resolved with an additional reviewer. The

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<sup>1</sup> The Critical Appraisal Skills Programme (CASP) appraisal tool for systematic reviews was used to assess the systematic reviews and literature reviews.

two literature reviews retrieved through the grey literature were excluded based on weak ratings. Five studies were included. The book<sup>3</sup>, the book chapter<sup>4</sup> and one of the systematic reviews<sup>5</sup> were assigned moderate ratings. The remaining two systematic reviews were rated as strong<sup>6,7</sup>. The synthesis in the following section is based on findings from the five included studies.

## 9 Description of Included Studies

### Nature of Management Research

Management research differs from medical and health research in important ways, including how evidence is formulated and accepted. Studies in the field of management rarely address the same research problems, making traditional approaches to synthesis (e.g. meta-analysis) inappropriate. Alternate methods of synthesis are used to draw conclusions (e.g. realist synthesis, meta-synthesis, meta-ethnography)<sup>8</sup>. Other key differences are outlined in APPENDIX F. Some of the included studies for this review reflect these characteristics. However, the systematic reviews conducted by Franco-Santos et al<sup>6,7</sup> use principles outlined by Tranfield et al, to adopt a more systematic approach to their research<sup>8</sup>. Since management researchers are more concerned with understanding organizations and organizational processes than determining the effectiveness of specific interventions<sup>8</sup>, the findings from this rapid review are best understood and applied as processes that have been shown to impact (positively or negatively) the implementation of PM systems. The findings are presented with a business management “lens” using terminology often unfamiliar in a public health environment. A glossary of key terms is included in Appendix G to enhance understanding of findings.

Systematic Review # 1: An examination of the literature relating to issues affecting how companies manage through measures

Franco-Santos and Bourne<sup>6</sup> conducted a systematic review to examine factors that affect the ability of organizations to manage through measures of performance<sup>8 2</sup>.

The review included studies within the scope of information systems, accounting and management control, operations and production management, human resources and strategic control. Public sector studies were excluded from the review. However included studies represented a range of industries such as manufacturing, service, research and development and health-care and therefore met the inclusion criteria.<sup>3</sup> The authors have based their findings on 73 relevant studies that were included for analysis in the review. The authors use Pettigrew's change management framework to guide the thematic analysis of their findings<sup>4 9</sup>.

Systematic Review #2: Using performance indicators to improve health care quality in the public sector: a review of the literature (Freeman, 2002).

This review summarized the general empirical and theoretical studies of the use of performance indicators to improve health care quality<sup>5</sup>. The review outlines the aims and limitations of performance systems, and identifies lessons for implementation and ongoing use. It used a systematic search for studies focused on health-care management topics only. In order to be included, articles had to demonstrate empirical evidence or theoretical discussion about the use of performance indicators in assessing health care quality. Papers that focused on specific diseases or conditions were excluded.

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<sup>2</sup> Details about the systematic review process were provided by the authors in the form of a paper that was presented at an international conference. This paper was complementary to the published paper and was reviewed as a component of this study. Data extraction tables were not included in the conference paper, therefore details about primary study settings, populations, interventions, comparisons and outcomes are limited.

<sup>3</sup> Authors conclude that most empirical work in this field has occurred in the manufacturing sector and has been developed from a management control and accounting perspective.

<sup>4</sup> Pettigrew's framework considers the impact of organizational change processes (in this case effective implementation of PM systems) by exploring the context and process on the outcomes of interest.

A total of 125 empirical and theoretical papers were included in the review. Due to study diversity, papers were not appraised based on methodology. As well, details about primary study settings, populations, interventions, comparisons and outcomes were not included in the paper.<sup>5</sup> Findings were grouped into three broad categories: i) aims of performance indicator systems ii) perceived or reported problems iii) perceived or reported factors facilitating development, implementation or use. These categories were further refined and organized into major descriptive themes.

Systematic Review #3: Contemporary performance measurement systems: A review of their consequences and a framework for research

The purpose of this systematic review was to integrate knowledge on the consequences of contemporary PM (CPM) systems (See Appendix G for glossary of terms) and to identify the mechanisms by which CPM are presumed to impact behaviour, organizational capacity and performance<sup>7</sup>. The research team's primary interests were the mediating and moderating factors associated with CPM system consequences. The review explored how factors such as characteristics of the firm, organizational culture, type of system, system maturity and individual factors such as managerial educational level, experience, and self-efficacy influenced several outcomes. Academic papers were included for review if they met the following inclusion criteria: i) selected from a list of 15 journals previously ranked through the ABS Academic Journal Quality Guide (2010) as having three or more stars, ii) provided empirical evidence on the consequences of CPM in for-profit organizations, and iii) published from 1992 (birth of the balanced score-card) to October, 2011. Articles from journals with less than a two-star rating (ABS Academic Journal Quality Guide, 2010), conceptual/theoretical papers and studies from

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<sup>5</sup> The paper indicated that a full bibliography was available separately from the author. However this option was not pursued given the publication date (2002).

not-for profit and government organizations were excluded from this review. While included studies represented a range of industries predominated by manufacturing, they included service and other industries, therefore meeting the inclusion criteria.

Three databases including the ISI Web of Knowledge, EBSCO, ABI Proquest were used to search the 15 pre-determined journals resulting in 76 studies that met the inclusion criteria for this review. Data extraction tables were created to capture details about the main study variables and characteristics of each study. The authors then classified the types of CPM systems and the effects of CPM systems on three types of outcomes i) individual behaviour ii) organizational capabilities, and, iii) organizational performance. These categories were further refined and findings were organized into major descriptive themes.

Book #1: Performance-based management systems: Effective implementation and maintenance

The purpose of this book is to support practical efforts to build, use, and sustain PM systems as guided by the best empirical evidence available<sup>4</sup>. The author draws conclusions from a brief review of the literature (primarily US based), identification of a theoretical framework and finally, the results of her primary study which used quantitative & qualitative methodology. The author included lessons learned from 13 case studies of U.S. state and local governments that have experimented with performance measures. The study objectives were to identify factors affecting the adoption and implementation of performance measures. Specifically, de Lancer Julnes tested three hypotheses:

- 1) Utilization of performance measures is composed of two distinct stages: i) adoption and ii) implementation. (See Appendix G for a glossary of terms). Each stage is impacted differentially by contextual factors.
- 2) Rational/ technocratic factors have greater impact on adoption than on implementation.

3) Politics and culture have a greater impact on implementation than on adoption

State and local government organizations functioned as the main unit of analysis. The main study conclusions were based on quantitative survey results (N=934) of a mailed survey (1997) to state and local government employees across the US who were designated as ‘opinion leaders’. Study conclusions were also based on qualitative follow-up telephone interviews.

Book #2: Measuring Performance in Public and Nonprofit Organizations- Chapter 14:

Implementing Effective Measurement Systems

Poister provides managers with strategies for designing and implementing effective performance measurement systems in public & non-profit organizations<sup>3</sup>. Chapter 14 summarizes common problems encountered in the development and implementation of PM systems and identifies specific strategies for successful implementation. Elements of success are drawn from best practices from public agencies and private firms as summarized in the National Performance Review<sup>10</sup>. Poister then cites specific implementation challenges identified in empirical studies. These challenges are provided in summary format only. The specific details of settings, populations, interventions and outcomes for the individual studies are not provided. Finally Poister uses these collective insights to create 30 practical strategies for successful implementation. These strategies are organized within seven themes.

## **10 Synthesis of Findings**

The included studies reflect three organizational contexts: public administration, health sector and for-profit environments. However there was consistency in the findings among the studies in many areas. Data from the data extraction tables were synthesized using content analysis methodology to identify, code, and categorize the findings<sup>11</sup>. There are three phases of a PM system with different factors impacting the success of each. The included studies emphasize the

importance of addressing factors along the continuum of design, implementation and ongoing use <sup>3,4,6</sup>. Findings also confirmed the need to build separate strategies for adoption (design) and implementation (includes ongoing use) <sup>4</sup>. Findings were organized by phase (i.e. design, implementation, use) and then by system (i.e. elements within the PM system) or organizational factors (i.e. characteristics of the organization). (Refer to Appendix G for detailed definitions). Key findings have been summarized into 14 guiding principles. Table 1 provides this summary by phase:

**Table 1. Factors that Promote Effective Implementation of a PM System**

	PM System Phase		
	Design	Implementation	Ongoing Use
PM System Factor	1. Quality Improvement Model 2. Linked to organizational strategy <b>3. Appropriate indicators and targets</b> <sup>6</sup> <b>4. Stakeholder involvement</b>	<b>6. Coordinated organizational response</b> 7. Staged implementation <b>8. Effective communication strategies/Feedback loops</b>	<b>11. Continuous monitoring and review</b> 12. Integrated processes to manage and use data
Organizational Factor	5. Organizational capacity	<b>9. Top management commitment</b> 10. PM System used as management decision-making tool	<b>13. Integration with other management practices</b> <b>14. Trust-building change management strategies</b>

### **Design Phase**

Good system design (adoption) was the strongest predictor of successful implementation <sup>4</sup>. The review identified several system design features that are associated with more successful PM systems.

### **System Factors**

<sup>6</sup> Bolded statements indicate consensus among at least 3 of the 5 studies included in this review.



**Principle #1: Use a quality improvement PM model for greater organizational benefit.**

A quality improvement PM model offers greater potential benefit for organizations than the assurance model which emphasizes external accountability<sup>5</sup>. Assurance systems which use performance indicators prescriptively to make judgements of care quality have prevailed in the UK health care sector and have led to negative results and the corrupting of the indicators<sup>5</sup>. In a summary of 13 US government agencies, the emphasis on accountability was found to be threatening for managers<sup>4</sup>. A formative model which emphasizes learning to promote continual improvement and interpretive use of the data fosters trust and communication between clinicians and managers<sup>5</sup>. The design of a system should be consistent with its purpose. In an improvement model information is produced to enhance program learning and information is used as a means to understand program accomplishments and how to improve them<sup>4</sup>. Therefore a quality improvement approach requires less robust data but more processes that encourage discussion of results<sup>5</sup>.

**Principle #2: Demonstrate explicit links to an organizational strategy and cause and effect relationships among measures.**

Four types of PM systems (CPM) have been identified in the literature<sup>7</sup> (Refer to Appendix E). The Type B system has explicit links to an organizational strategy and demonstrates cause and effect relationships among the measures. These relationships are identified through organizational planning processes and are often articulated through strategic plans or strategy maps<sup>6</sup>. Use of the Type B system is associated with increased manager's perceptions of self-efficacy and goal attractiveness and decreased role ambiguity, particularly when the level of system complexity is low and manager experience is very low (less than 2 years) or very high (20 + years)<sup>7</sup>. Such systems provide managers with performance information that increases their

knowledge of the organization's strategic goals and helps them to place their work within the series of activities leading to the desired outcomes. The literature does not support linking PM systems to monetary rewards or individual incentives (Type D). Type D systems have been found to have negative effects on motivation, perceptions of subjectivity, justice and trust <sup>7</sup>.

**Principle #3: Select appropriate measures and targets in the design phase to ensure success in the implementation and use phases.**

Many of the perceived or reported problems with performance indicator systems are related to indicator and data selection. Common issues include: indicators from existing information systems that are not valid, reliable or comparable; multiple competing objectives; lack of robustness, sensitivity and specificity, over-reliance on data systems, data manipulation <sup>5</sup>, lack of benchmarks and setting goals too high <sup>4</sup>. Ideally, good performance measures:

- Have high strategic alignment, controllability, timeliness and technical validity <sup>7</sup>
- Address only strategic priorities and departmental results to avoid irrelevant data collection <sup>4</sup>
- Measure what is important to customers (stakeholders)<sup>4</sup>
- Are results driven rather than data driven in the search for relevant measures. <sup>3</sup>
- Focus on a relatively small number of measures that are simple and straightforward <sup>3</sup>
- Are tailored (measures, reporting frequencies and presentation formats) to the intended audience <sup>3</sup>
- Are developed (i.e. multiple sets) for different audiences <sup>3</sup>
- Emphasize comparisons in reporting <sup>3</sup>
- Are diverse (i.e. multi-faceted) <sup>6</sup>

Work teams that have more diverse performance measures achieve higher performance (based on self-assessment).<sup>7</sup> PM systems that have controllable, attainable targets positively impact staff motivation<sup>7</sup>. Organizations with well-defined and specified performance measures result in higher levels of perceived procedural justice and trust in supervisors<sup>7</sup>.

**Principle #4: Design processes that encourage stakeholder involvement and system acceptance to enhance implementation.**

Organizations should begin by identifying the organization's internal and external interest groups<sup>4</sup> and adopt a fair, transparent and consultative process that allows for staff to identify performance criteria, measures, targets and data collection systems to build ownership<sup>3,7</sup>.

**Organizational Factors**

**Principle #5: Enhance organizational capacity at the beginning of the PM process.**

The adoption of performance measures is significantly and positively predicted by:

- an internal policy supporting the use of performance measures
- commitment of resources to collect and evaluate performance measurement data
- consensus on program goals and goal orientation within the organization
- staff with the technical knowledge to conduct and implement performance measurement<sup>4</sup>

**Implementation Phase**

The literature on the implementation and use of PM systems is not as extensive as the literature on design<sup>6</sup>. However key system and organizational factors have been linked to successful implementation.

**System Characteristics**

**Principle #6: Include internal mechanisms for coordination and accountability.**

The PM process is best managed strategically with a designated coordinator<sup>4</sup>. Accountability is fostered in a PM system when staff are identified to manage the results<sup>3,6</sup>. Staff who are assigned to performance measurement activities are responsible for developing methodologies<sup>6</sup> and maintaining or improving performance on key output and outcomes measures<sup>3</sup>. PM systems must also create expectations for use with a constant connection between information and action<sup>4,5,6</sup>.

**Principle #7: Stage implementation in manageable steps.**

Organizations should consider implementing the system by division or program, to work out problems and demonstrate success in small steps<sup>3,4</sup>. Staging also allows organizations to be more realistic about time and cost estimates associated with implementing a PM system<sup>3</sup>.

**Principle #8: Include effective communication mechanisms that encourage feedback, dialogue and participation.**

One-way reporting generates tensions that contribute to a climate of distrust and alienation<sup>7</sup>. It is important that program managers and staff have the opportunity to review and correct data prior to sharing at the executive level<sup>3</sup>. Employee feedback should include verbal and non-verbal communication strategies including presentations, reports and manuals that clarify all aspects related to the measures and the system<sup>6</sup>.

**Organizational Factors**

While successful adoption (design) is the largest predictor of successful implementation, not all organizations that adopt successfully implement<sup>4</sup>. While resources and information continue to be important throughout implementation, political/cultural factors within an organization are more influential in the implementation phase<sup>4</sup>. Five of the seven most common implementation challenges identified by Poister can be attributed to political/cultural factors: lack of utilization,

lack of stakeholder buy-in, internal resistance, goal displacement and gaming (see Appendix G for a glossary of terms) and system abuse<sup>3</sup>. The implementation of performance measures is significantly and positively predicted by the support of elected officials and the public, a culture characterized by openness to change and reward systems that support risk taking<sup>4</sup>.

**Principle #9: Ensure top management commitment to the PM strategy.**

Top management agreement about PM strategy, goals, measures and performance targets and commitment to these goals has been identified as the main driver for successful implementation of the PM system<sup>6</sup>. Organizations that support a culture of change are more likely to ensure that resources are available to implement PM efforts<sup>3</sup>. Senior managers play an important role in leading a culture of change, ensuring adequate resources for implementation (e.g. staff, technical capacity to interpret data, availability of benchmarks)<sup>3</sup> and demonstrating use of performance measures themselves<sup>3,4</sup>.

**Principle #10: Build on the skills of managers, consider their professional needs and use PM as a tool for management decision-making and learning.**

To be effective, PM systems must build on employees' professionalism, acknowledge the organization's previous experience, access existing skills and allow experimentation with measures<sup>7</sup>. When implemented effectively, PM systems positively impact the decision making, learning and self-monitoring of managers (particularly those with low experience and those of long-tenure) and confirm managers' mental models of how their business operates<sup>7</sup>. PM systems are also effective mechanisms for engaging managers in strategy formulation, translating strategy into operational terms and encouraging continuous strategic alignment<sup>7</sup>. Barriers to implementation include manager perception of increased workload and also the anticipated visibility of performance results<sup>7</sup>.

## Ongoing Use

### System Factors

Many of the same factors associated with successful implementation (.e.g. communication) apply to the system's ongoing use. However there are some system characteristics that are emphasized in the literature pertaining to ongoing use.

**Principle #11: Build in flexibility and monitoring processes to allow for course corrections and continuous improvements.**

PM systems require a continuous review of the measures, results and impact on goals and strategy and cost-effectiveness to ensure relevance to the organization and its users <sup>4,5,6</sup>. Effective systems build in formal processes to ensure on-going review <sup>6</sup>.

**Principle #12: Develop integrated processes that support use of data.**

Organizations are encouraged to build on existing data and performance systems and to use existing or readily available data when appropriate, and to avoid costly new data collection efforts unless essential <sup>3,4</sup>. Organizations that implement PM systems successfully have strong information infrastructures <sup>6</sup>, find ways to integrate indicators into everyday work practices, develop IT systems to capture data and automate data collection, input, analysis, retrieval and dissemination <sup>5</sup>.

### **Organizational Factors**

**Principle #13: Integrate PM systems with other management practices.**

PM systems must be part of a larger effort and should be linked with management systems and decision-making processes already in place <sup>3,4,6</sup>. Poister refers to this as “omni directional alignment” across various management processes, noting that performance measurement is a

necessary but insufficient condition for results-oriented management without linkages to other management or other decision-making processes <sup>3</sup>.

**Principle #14: Develop change management strategies that build trust.**

Managing for results is a cultural shift. Organizations should anticipate resistance, denial, disbelief <sup>4,5</sup>, goal displacement, gaming and system-abuse <sup>5</sup>. Strategies to minimize such behaviours include balancing measures and incorporating quality assurance procedures to ensure data integrity <sup>3</sup>, communicating to managers and staff how and why measures are being used and reassuring staff that the system will not produce across-the-board actions such as budget cuts or layoffs <sup>3</sup>. PM systems increase employee job satisfaction when employees trust their supervisor and perceive fairness in the way performance is evaluated <sup>7</sup>. Franco-Santos and Bourne frame successful implementation from the perspective of the three E's: empower, enable and encourage. Staff should be: involved in developing their own system (empowerment), provided with education and training on the measures and related tools and procedures (enable), and given opportunities and motivation (encouragement) to use the data provided by the system <sup>6</sup>.

**Summary**

The literature guiding PM emphasizes design with less focus on successful implementation and ongoing use. This review identifies key factors that are important for successful design, implementation and ongoing use based on moderate evidence. These factors have been summarized as 14 key guiding principles. While system factors (technical/rational) are critical for successful design, organizational factors (particularly political factors) are more influential in determining the success of implementation and ongoing use.

## 11 Applicability and Transferability

Following the findings of the rapid review, the Performance Management Steering Committee and Working Group faced an important decision: Should the team proceed with PM implementation using the factors identified in the findings to maximize success? The applicability and transferability of findings were assessed by potential users of the PM system<sup>7</sup>.

### **Transferability**

Concern was expressed that findings were based, in part, on findings from the private sector, therefore not directly applicable to a public health setting. However, there was general consensus among the group that the findings were consistent with program experience, and many program examples were used to confirm key findings (e.g. the breastfeeding team's attempt to find the most useful breastfeeding duration indicator illustrated the importance of choosing a small number of appropriate indicators).

### **Applicability**

There was also agreement among the group that pursuing and communicating PM activities would be viewed by Regional Council as fiscally responsible and would meet public expectations for increased transparency even when communicating areas of under-performance. The team believed the PM system would be supported internally if the PM initiative was framed in terms of emotional benefits for staff (e.g. team pride in what they are doing), in addition to population outcomes. Fundamentally, staff members want to know that their programs work. However if the PM system is not implemented well or if it is not seen as adding value, the group predicted there would be staff "push back". The team identified the following themes cited in the

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<sup>7</sup> The Applicability and Transferability tool was adapted from the National Collaborating Centre for Methods and Tools.



review as critical for acceptability of the PM system at PPH: use of a learning model, provision of extensive training, customization of processes and creation of a safe environment. An early focus on the training of supervisors and managers who are currently engaged in training and development for other new initiatives was viewed as essential as they will be expected to lead this change. Finally, given the timing of this initiative in relation to the other strategic priorities, understanding and communicating PM as a synthesizing strategy and integration tool would decrease the stress associated with doing something new.

It was recognized that the PM initiative would be time-intensive. Since the PM initiative will be implemented with no new staff resources, an open discussion about resources, particularly staff time would be critical. Approving staff time to train and build competencies across the organization was viewed as the most essential investment in organizational capacity. This was described by the group as creating the “mental space” for staff to do this work. The ideal training strategy recommended by the team is a tailored, just in time approach which includes mentoring. There was a strong favourable response to staged implementation which was perceived as a practical way to ensure organizational capacity. Synthesis with other management processes (as recommended in the literature) such as the PPE process was also viewed as contributing to organizational capacity.

Given the applicability and transferability of review findings, the steering committee should consider the following evidence-based strategies for design, implementation and on-going use:

### **Design Phase**

1. Implement a quality improvement model to emphasize learning and organizational improvement.
2. Develop strategies to address the following rational/technocratic factors:

- Develop an internal policy supporting the use of performance measures
- Ensure adequate commitment of resources to collect and evaluate performance measurement data
- Gather consensus on goals and strategies
- Ensure that the implementation team includes staff with the technical knowledge of how to conduct and implement performance measurement

3. Select processes that encourage staff involvement to ensure acceptance of the system

### **Implementation Phase**

4. Establish clear mechanisms for coordination and accountability by the identification of a staff or department lead and development of processes that ensure ownership across the organization.

5. Build in change management strategies that demonstrate top management commitment, encourage organizational openness to change and risk-taking and create effective communication mechanisms that encourage dialogue and participation.

6. Build on the skills of managers to use the PM system as a tool to encourage decision-making.

### **Ongoing Use**

7. Find ways to integrate indicators into everyday work practices by developing processes that support the use of data. This includes developing IT systems that automate collection, analysis, retrieval and dissemination for PPH staff.

8. Integrate PM systems with current Peel Public Health management systems and decision-making processes (e.g. Program Planning and Evaluation, Evidence Informed Decision-making, workforce development).

9. During this phase, focus change management strategies on trust-building to reduce resistance or gaming behaviours. Emphasize involvement, training and opportunities to use the data provided by the system.

## References

- (1) Neely, A, Bourne, M. Why some performance measurement initiatives fail: lessons from the change management literature, 2003; 5(2/3): 245-268.
- (2) Mawunganidze, L. Public Health Performance Management Current State Report. Health Performance and Accountability, Internal Client Services, 2012. (In Draft).
- (3) Poister, T.H. Implementing effective measurement systems, in measuring performance in public and nonprofit organizations. Jossey-Bass Nonprofit and public management series, 2003 Jossey & Bass, San Francisco, CA: 255-274.
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- (5) Freeman, T. Using performance indicators to improve health care quality in the public sector: a review of the literature 2002 May; 15(2):126-137.
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- (10) National Performance Review. Serving the American public: best practices in PM. Benchmarking study report, 1997. [www.npr.gov/library/papers/benchmark/nprbook.html](http://www.npr.gov/library/papers/benchmark/nprbook.html).
- (11) Patton, M. Qualitative Research and Evaluation Methods, 2002, (3<sup>rd</sup> Ed.) Sage: California.

## **Appendices**

**Appendix A: Concept Model**

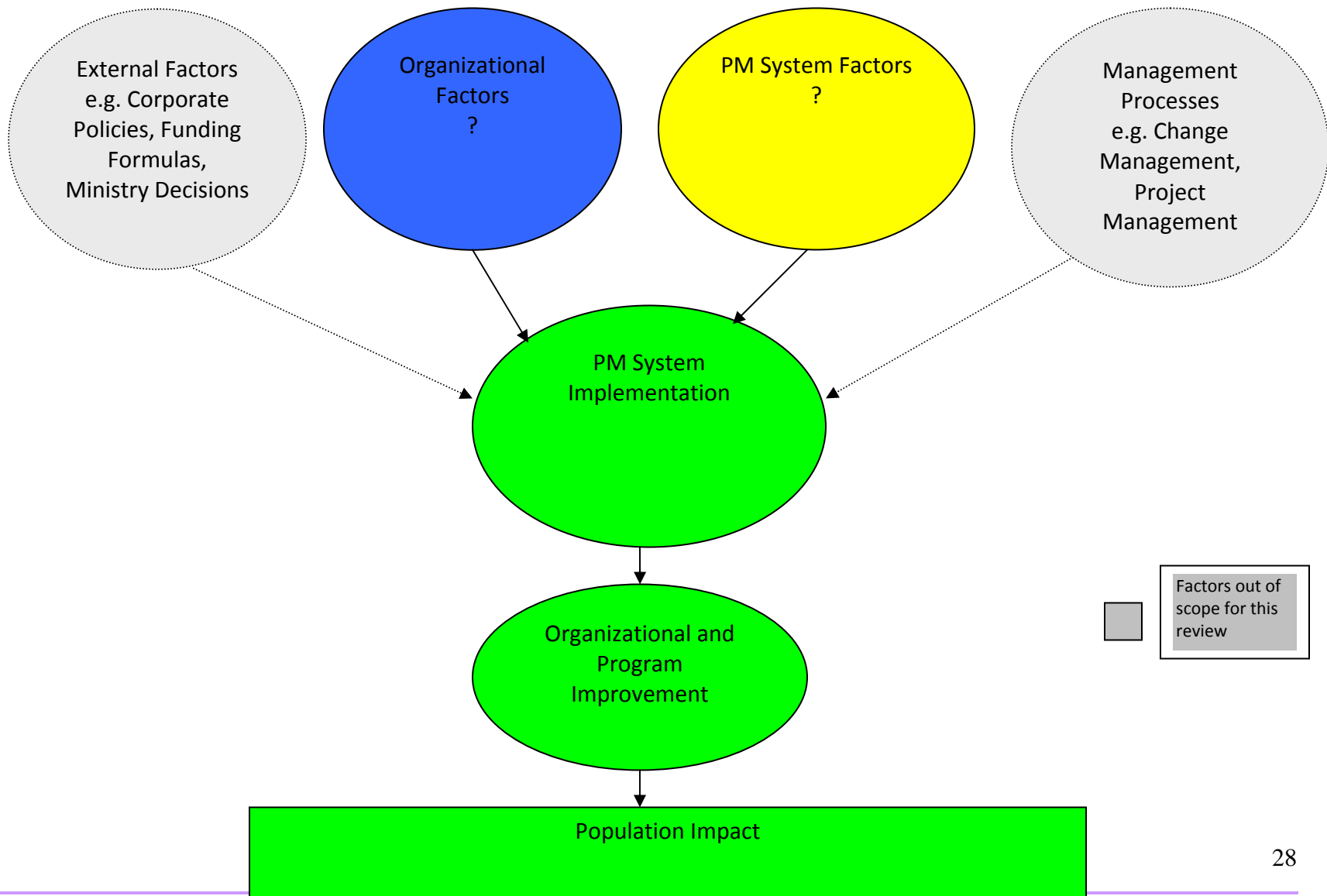
**Appendix B: Search Strategy**

**Appendix C: Literature Search Flowchart**

**Appendix D: Data Extraction Tables**

**Appendix E: Applicability & Transferability Worksheet**

## Appendix A: Concept Model: Factors that Influence the Successful Implementation of Performance Management within an Organization



## Appendix B: Search Strategy

### OVID Medline Search

Database: EBM Reviews - Cochrane Database of Systematic Reviews <2005 to November 2011>, EBM Reviews - ACP Journal Club <1991 to October 2011>, EBM Reviews - Database of Abstracts of Reviews of Effects <4th Quarter 2011>, EBM Reviews - Cochrane Central Register of Controlled Trials <4th Quarter 2011>, EBM Reviews - Cochrane Methodology Register <4th Quarter 2011>, EBM Reviews - Health Technology Assessment <4th Quarter 2011>, EBM Reviews - NHS Economic Evaluation Database <4th Quarter 2011>, Global Health <1973 to October 2011>, Ovid Healthstar <1966 to October 2011>, Ovid MEDLINE(R) <1948 to November Week 2 2011>, Ovid MEDLINE(R) In-Process & Other Non-Indexed Citations <November 16, 2011>, PsycINFO <2002 to November Week 3 2011>

Search Strategy:

- 
- 1 ("PM" or "performance measurement").ti,ab. (2896)
  - 2 exp Health Personnel/ (705871)
  - 3 1 and 2 (248)
  - 4 remove duplicates from 3 (128)
  - 5 meta-analysis.mp, pt. (135340)
  - 6 (search or systematic review or medline).tw. (354413)
  - 7 cochrane database of systematic reviews.jn. (23594)
  - 8 5 or 6 or 7 (431519)
  - 9 exp guideline/ (50964)
  - 10 (practice guideline or guideline).pt. (45966)
  - 11 9 or 10 (58605)
  - 12 8 or 11 (487491)
  - 13 (comment or letter or editorial or note or erratum or short survey or news or newspaper article or patient education handout or case report or historical article).pt. (2616004)
  - 14 12 not 13 (471032)
  - 15 4 and 14 (2)
  - 16 ("PM system" or "performance measurement system").ti,ab. (240)
  - 17 2 and 16 (17)
  - 18 remove duplicates from 17 (8)
  - 19 1 or 16 (2896)
  - 20 2 and 19 (248)
  - 21 exp public sector/ (14452)

- 22 exp nonprofit organizations/ (30783)
- 23 exp government agencies/ (103202)
- 24 public health/ (152740)
- 25 exp public health administration/ (27348)
- 26 21 or 22 or 23 or 24 or 25 (318045)
- 27 19 and 26 (243)
- 28 remove duplicates from 27 (175)
- 29 14 and 28 (6)
- 30 27 not 2 (233)
- 31 "health care workers".sh. (7689)
- 32 27 not 31 (242)
- 33 exp ambulatory care/ (85863)
- 34 32 not 33 (241)
- 35 exp hospitals/ (376274)
- 36 34 not 35 (235)
- 37 exp Asia/ (1048669)
- 38 exp India/ (170885)
- 39 exp South America/ (213316)
- 40 exp Africa/ (392726)
- 41 37 or 38 or 39 or 40 (1620635)
- 42 36 not 41 (232)
- 43 limit 42 to yr="2001 - 2011" [Limit not valid in DARE; records were retained] (193)
- 44 limit 43 to english language [Limit not valid in CDSR,ACP Journal Club,DARE,CCTR,CLCMR; records were retained] (192)
- 45 remove duplicates from 44 (141)

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ProQuest

Advanced Search

Look Up Citation | Command Line | Find Similar | Obituaries

Thesaurus | Field codes | Tips

EXACT("High performance systems" OR "Business metrics" OR "Balanced Scorecard") in Subject heading (all) — SU Look up Subject

AND ▾ EXACT("Public sector") in Subject heading (all) — SU Look up Subject

AND ▾ ( ) OR ( ) in All fields (no full text) — ALL

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Date range: After this date... Search for documents published on or after a specific year, month, or date

December 31 1999 (yyyy)

Show less ▲

Company/organization: Look up Company/organization

Person: Look up Person

Location: Look up Location

Classification code: Look up Classification code

NAICS: Look up NAICS codes

Show more fields

Source type:  Select all

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Person: Look up Person

Location: Look up Location

Classification code: Look up Classification code

NAICS: Look up NAICS codes

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Source type:

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- Magazines
- Newspapers
- Other Sources
- Pamphlets & Ephemeral Works
- Reports
- Scholarly Journals
- Trade Journals

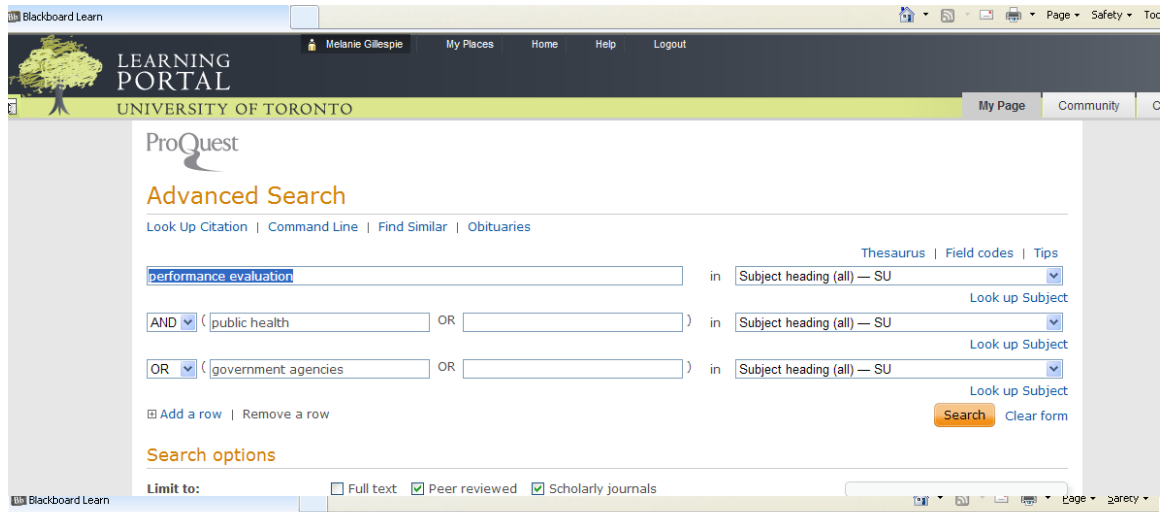
English Only

**Source Type:** Books, Reports and Scholarly Journals

English Only

**Yield:** 50 Citations

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### ProQuest Advanced Search

Look Up Citation | Command Line | Find Similar | Obituaries

Thesaurus | Field codes | Tips

performance evaluation in Subject heading (all) — SU [Look up Subject](#)

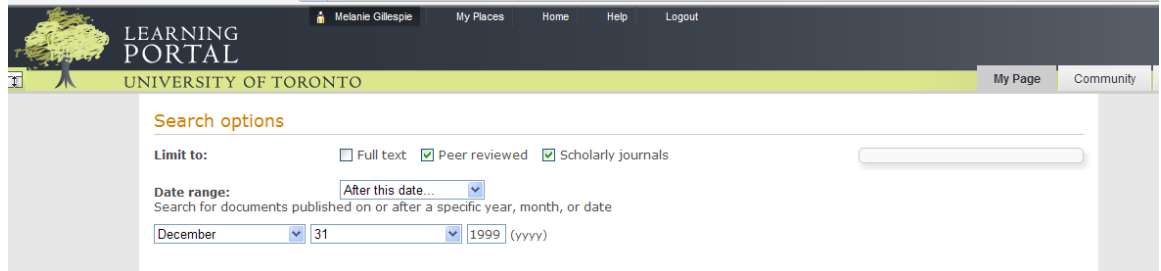
AND ( public health OR ) in Subject heading (all) — SU [Look up Subject](#)

OR ( government agencies OR ) in Subject heading (all) — SU [Look up Subject](#)

[Add a row](#) | [Remove a row](#) [Search](#) [Clear form](#)

#### Search options

Limit to:  Full text  Peer reviewed  Scholarly journals



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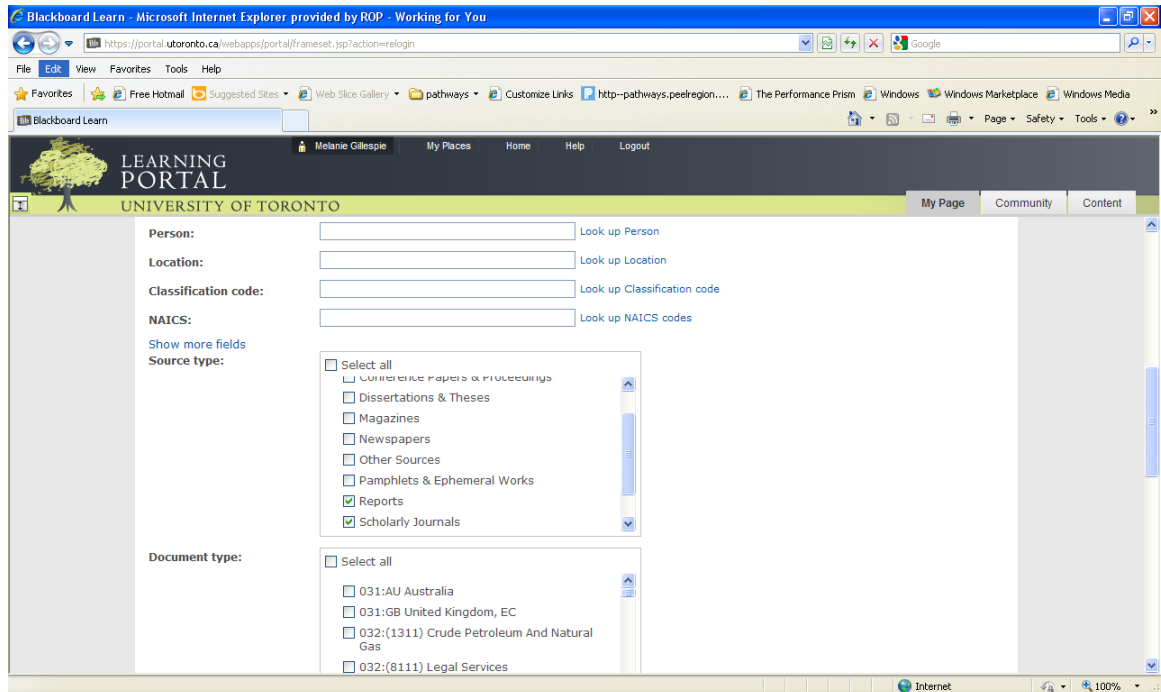
#### Search options

Limit to:  Full text  Peer reviewed  Scholarly journals

Date range: [After this date...](#)

Search for documents published on or after a specific year, month, or date

December 31 1999 (yyyy)



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Classification code:  [Look up Classification code](#)

NAICS:  [Look up NAICS codes](#)

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Source type:

- Select all
- Conference Papers & Proceedings
- Dissertations & Theses
- Magazines
- Newspapers
- Other Sources
- Pamphlets & Ephemeral Works
- Reports
- Scholarly Journals

Document type:

- Select all
- 031:AU Australia
- 031:GB United Kingdom, EC
- 032:(1311) Crude Petroleum And Natural Gas
- 032:(8111) Legal Services

**Source Type:** Books, Reports and Scholarly Journals

**English Only**

**Yield:** 88 Citations

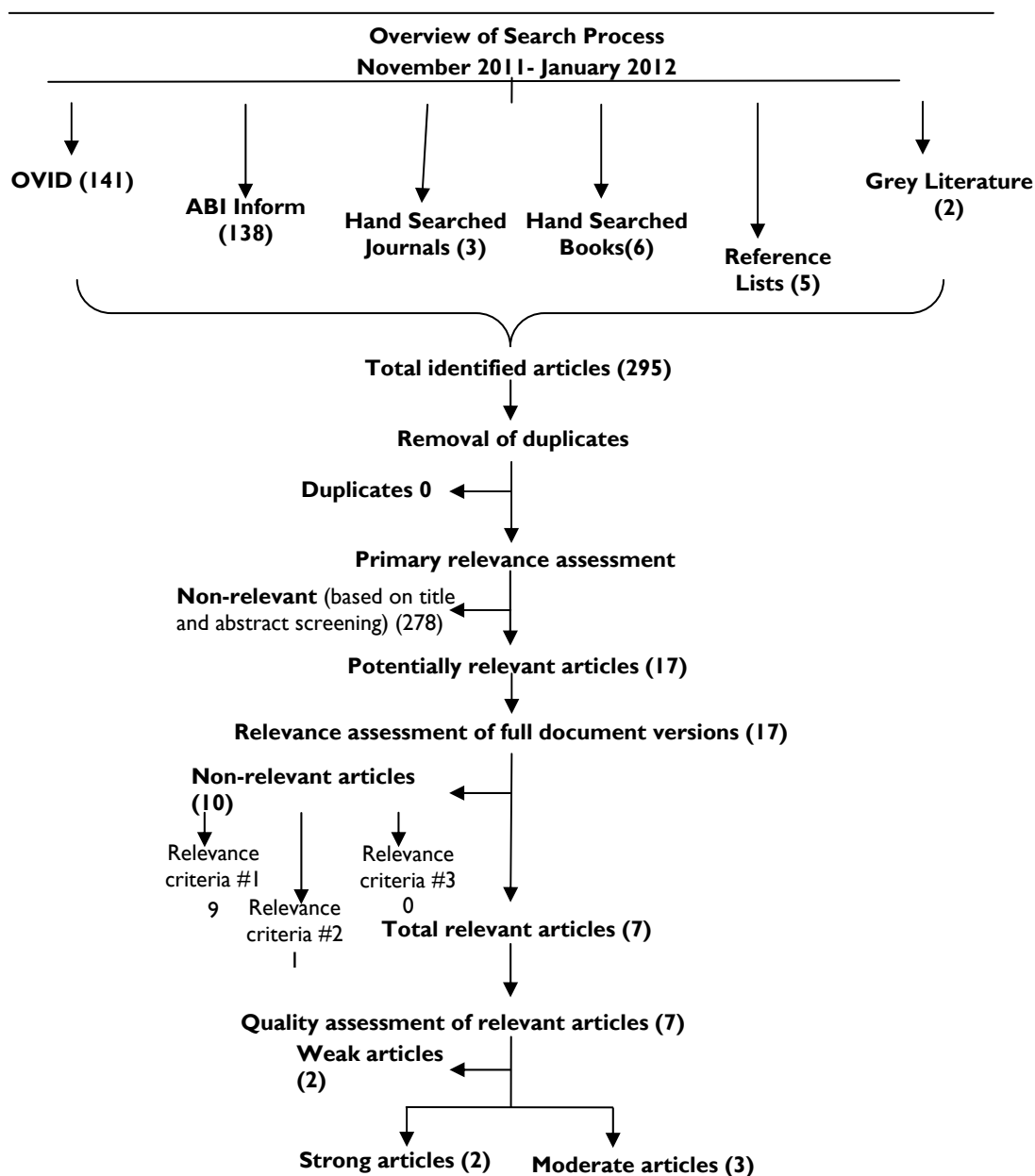
## Grey Literature Search

*Question: What are the organizational and PM system factors that influence the successful implementation of performance?*

<b>Date Retrieved</b>	<b>Name of Organization</b>	<b>Website (&amp; or URL to paper)</b>	<b># Papers Retrieved</b>	<b>Level of Evidence</b>	<b>Title</b>	<b>Author(s)</b>	<b>Date Published</b>
2012-01-18	Cranfield University School of Management Centre for Business Performance	<a href="http://www.som.cranfield.ac.uk/som/p1052/Research/Research-Centres/Centre-For-Business-Performance">http://www.som.cranfield.ac.uk/som/p1052/Research/Research-Centres/Centre-For-Business-Performance</a>	2 Reports	Executive Briefing Report (Working Paper)  Literature Review	Acting on information: PM for the public sector  Literature Review on Performance Measurement and Management	Neely, Micheli, Martinez  The Centre for Business Performance, Cranfield School of Management.	2006  n.d.
2012-02-02	Development Dimensions International	<a href="http://www.ddiworld.com/ddiworld/media/white-papers/gettingthemoost_wp_ddi.pdf">http://www.ddiworld.com/ddiworld/media/white-papers/gettingthemoost_wp_ddi.pdf</a>	1 report	Consultants report	White Paper – Getting the most from your PM system	Patricia Davis & Robert W. Rogers	n.d.
2012-02-06	Turning Point PM National Excellence Collaborative (PMC)	<a href="http://www.phf.org/resourcestools/Documents/PMCliteraturereview.pdf">http://www.phf.org/resourcestools/Documents/PMCliteraturereview.pdf</a>	1 report	Literature Review (Annotated bibliography)	PM in Public Health	Public Health Foundation	n.d.

## Appendix C: Literature Search Flowchart

What are the organizational and PM system factors that influence the successful implementation of PM within public sector organizations?



Health-evidence.ca. (2009, November 25). *Keeping Track of Search Results: A Flowchart*. Retrieved [insert date you downloaded this document e.g., January 13, 2010], [http://www.health-evidence.ca/public/tools/10/Keeping\\_Track\\_of\\_Search\\_Results\\_-\\_A\\_Flowchart.ppt](http://www.health-evidence.ca/public/tools/10/Keeping_Track_of_Search_Results_-_A_Flowchart.ppt).

## Appendix D: Data Extraction Tables

Data	Data Extraction Details
<b>General Information &amp; Quality Rating for Systematic Review #1</b>	
1. Author(s) and Date	Franco-Santos, M. & Bourne, M. 2005
2. Country	UK
3. Quality Rating	<ul style="list-style-type: none"> <li>• Strong</li> </ul>
4. Objectives of Review	<ul style="list-style-type: none"> <li>• To contribute to existing knowledge on business PM systems (BPM) by examining factors that affect the ability of organizations to manage through measures.</li> <li>• Highlights the fact that most of the BPM literature focuses on how to develop and implement the systems and we know less about why some organizations are better able to manage through measurement than others</li> </ul>
<b>Details of Review</b>	
5. Number of primary studies Included	<ul style="list-style-type: none"> <li>• 73 primary studies included from an original search of 1563 studies</li> </ul>
6. Types of Studies	<ul style="list-style-type: none"> <li>• Included descriptive studies (theoretical research), descriptive with empirical evidence, literature reviews, archival studies, experiment, field studies (e.g. case studies), survey, survey and field study</li> </ul>
7. Search Period	1980- 2003
8. Number of databases searched/ Other search strategies	<ul style="list-style-type: none"> <li>• Used the Social Science Citation Index (SSCI) electronic database to locate list of major management journals (37)</li> <li>• Reference lists of 5 previous literature reviews</li> <li>• Studies identified through the review panel</li> </ul>
9. Inclusion and Exclusion Criteria	<ul style="list-style-type: none"> <li>• <u>Inclusion:</u> <ol style="list-style-type: none"> <li>1. Research related to the process of measuring business performance within an organization</li> <li>2. Research within the scope of Information Systems, Accounting &amp; Mgt. Control, Operations &amp; Production mgt., HR and Strategic control</li> <li>3. Descriptive and empirical research</li> <li>4. Academic and practitioner research</li> </ol> </li> <li>• <u>Exclusion:</u> <ol style="list-style-type: none"> <li>1. Research related to the control of machine or mechanical processes</li> <li>2. Research in sectors designated as out of scope (e.g. public sector was out of scope for the review)</li> <li>3. Research pre-1980</li> <li>4. Research that did not pass the quality assessment</li> </ol> </li> </ul>
<b>Details of Interventions</b>	
10. Description of interventions	<ul style="list-style-type: none"> <li>• Description of the individual studies are not provided</li> </ul>
11. Intervention settings	<ul style="list-style-type: none"> <li>• Most BPM studies has been researched from 2 perspectives: management control and accounting, and production and</li> </ul>

Data	Data Extraction Details
	<p>operations mgt. within the manufacturing and service industries</p> <ul style="list-style-type: none"> <li>• Most research is US based followed by the UK</li> </ul>
12. Theoretical frameworks	<ul style="list-style-type: none"> <li>• Pettigrew's Change Management Framework was used to organize thematic analysis</li> </ul>
13. Target groups	<ul style="list-style-type: none"> <li>• Description of the individual studies are not provided however a data extraction form was used to gather the following information from each study: Reference details, study methodology, country, industry, sample ,approach, focus of the findings, perspective and source of paper</li> </ul>
14. Primary Outcomes	<p>(As defined for inclusion in the review) Use of BPM to:</p> <ul style="list-style-type: none"> <li>• Evaluate whether intended strategy has been implemented</li> <li>• Communicate strategic goals and achievements</li> <li>• Validate intended strategy</li> <li>• Facilitate individual, group and organizational learning and improvement</li> </ul>
<b>Results of Review</b>	
15. Meta-analysis?	<ul style="list-style-type: none"> <li>• Not appropriate for meta-analysis; a thematic analysis was used to group findings</li> </ul>
16. Analytic Framework	<ul style="list-style-type: none"> <li>• Findings are based on the inclusion of 73 primary studies</li> <li>• Key findings are drawn directly from specific primary studies and are referenced throughout the findings on a one-to-one basis</li> </ul>
17. Main Results of Review	<ul style="list-style-type: none"> <li>• Review indicates that there are 16 factors (11 process factors and 5 context factors) that facilitate more effective use of BPM systems (can be used as a checklist)</li> <li>• Analytical framework that was used considered both context and process factors (Pettigrew's Change mgt. framework)</li> <li>• Process factors were grouped according to design, implementation and use factors</li> <li>• Context factors were grouped as internal/external</li> <li>• Overall, the implementation factors were identified in the reviewed studies as crucial</li> <li>• The sixteen factors identified were: <ul style="list-style-type: none"> <li><b><u>Process: (Design phase)</u></b> <ul style="list-style-type: none"> <li>▪ Use of BPM framework and strategy map</li> <li>▪ Selection of appropriate measures and targets</li> <li>▪ Alignment (vertical &amp; horizontal), integration &amp; linkage of mission, vision, strategy and operations; alignment of BPM system with other key mgt. systems (planning &amp; budgeting)</li> <li>▪ Information infrastructure; including appropriate IT system to support tasks related to collection, analysis, and reporting data efficiently</li> <li>▪ Accountability; assignment of each measure to a manager who is held responsible for developing its methodologies</li> </ul> </li> <li><b><u>(Implementation Phase)</u></b> <ul style="list-style-type: none"> <li>▪ Top management agreement about BPM strategy, goals, measures and performance targets &amp; commitment to these goals identified as main driver</li> <li>▪ The 3 E's: empower (involvement of middle mgrs and employees), enable (training on measures, tools &amp; procedures for data collection, analysis, interpretation &amp; use of IT) &amp; encourage (actions that motivate people to use the data provided by</li> </ul> </li> </ul> </li> </ul>

Data	Data Extraction Details
	<p>the system, activities that reduce resistance)</p> <ul style="list-style-type: none"> <li>▪ Communication: feedback of results to employees; use of verbal and non-verbal communication strategies</li> </ul> <p><u>(Use phase)</u></p> <ul style="list-style-type: none"> <li>▪ Commitment to review &amp; update measures</li> <li>▪ Ability to translate data into insights (ie. Taking data from analysis &amp; interpretation to decision-making &amp; action)</li> <li>▪ Use of rewards (research indicates conflicting conclusions)</li> <li>▪ Development of tools and specific mgt. processes that facilitate use of performance measures</li> </ul> <p><b><u>Contextual Factors</u></b></p> <ul style="list-style-type: none"> <li>▪ Less studied; few authors consider contextual issues in the literature</li> </ul> <p><u>Internal</u></p> <ul style="list-style-type: none"> <li>▪ Assurance that a firm strategy is being implemented; limited evidence of relationship between mgt. control systems (including BPM) and organizational strategy; strategies that focus on quality are more likely to be compatible with BPM systems</li> <li>▪ Culture- consensus that BPM systems are impacted by organizational culture but no definition re. what type of culture is referred to or how this alignment should be developed</li> <li>▪ Organizational structure and size- directly impacts design of a BPM system &amp; indirectly impacts implementation &amp; use of measures; one study found that as size increases, organizations find it more practical &amp; useful to emphasize a BSC (balanced score card) that supports their strategic decision-making</li> </ul> <p><u>External</u></p> <ul style="list-style-type: none"> <li>▪ Few authors have focused on the relationship between external contextual factors and BPM systems; external factors were excluded from this review</li> <li>▪ Industry characteristics have been studied and contrasted: e.g. monopoly or competitive markets, public sector vs. competitive sector, however no clear conclusions drawn</li> <li>▪ Environment has most often referred to the economy, supplier characteristics or demand uncertainty, no conclusions drawn</li> </ul> <p><u>Impact of BPM on outcomes</u></p> <ul style="list-style-type: none"> <li>▪ Work teams that have more diverse performance measures achieve higher self-assessed performance (e.g. significant positive relationship between organizational performance and the use of a diverse set of performance measures related to the 4 balanced scorecard categories)</li> <li>▪ However most findings on outcomes are based on manager and/or employee perception of achieved outcomes or test only limited aspects of the impact of BPM systems</li> <li>▪ Conclusion that more empirical evidence is required to answer a number of research questions and to fill in gaps (e.g. impact of strategy or success maps, validity &amp; reliability of measures, impact of BPM systems on performance –still largely assumed)</li> </ul>

Data	Data Extraction Details
18. Comments/Limitations	<p>Major limitations reported by authors: A number of factors have not been well-researched including;</p> <ul style="list-style-type: none"> <li>• Little empirical evidence to support the real impact of strategy maps</li> <li>• Validity &amp; reliability of measures used</li> <li>• Advantage of BPM systems focusing on aggregate vs. individual measurement</li> <li>• Lack of guidelines supporting the ID and selection of targets and milestones</li> <li>• Dearth of academic studies focusing on implementation; most papers are based on practitioner experience</li> <li>• Inconclusive research on use of rewards/incentives</li> <li>• Limited knowledge of “firm strategy”, &amp; culture and other internal context factors</li> <li>• Little focus on the impact of external factors</li> </ul> <p>Additional limitations (noted through critical appraisal):</p> <ul style="list-style-type: none"> <li>• While the additional information provided by the authors was helpful in identifying their systematic process, details about the included studies were not included (e.g. data extraction tables) therefore findings are presented in summary format only</li> <li>• Superficial/weak conclusions drawn about process factors (not in-depth enough)</li> <li>• Some terminology unclear “e.g. firm strategy”</li> <li>• While there is application to public sector setting it is NB to note that public sector environments were excluded from this review , therefore any insights from this sector are not part of this review</li> </ul>
Items Reviewed	Review #1 (Freeman, T. 2002)
<b>General Information &amp; Quality Rating for Systematic Review #2</b>	
1. Author(s) and Date	Freeman, T. (2002)
2. Country	United Kingdom
3. Quality Rating	<p>Moderate</p> <ul style="list-style-type: none"> <li>• Relevant review that uses multiple sources with both empirical and theoretical studies to provide an overview. However, inclusion and exclusion criteria are not provided within the report.</li> </ul>
4. Objectives of Review	<ul style="list-style-type: none"> <li>• To summarize the general empirical and theoretical studies of the use of performance indicators to improve health care quality. Outline the aims and limitations of performance systems, as well as identify lessons for implementation and use.</li> </ul>
<b>Details of Review</b>	
5. Number of primary Studies Included	<p>Unknown</p> <ul style="list-style-type: none"> <li>• A total of 125 articles were included in the review</li> </ul>
6. Types of Studies	Unknown
7. Search Period	January 1985 to July 2011
8. Number of databases searched	4 [Medline, HMIC, ASSIA and BIDS]
9. Inclusion and Exclusion Criteria	<p>Not explicit</p> <ul style="list-style-type: none"> <li>• <u>Inclusion:</u> Contains empirical evidence or theoretical discussion on generic issues in the use of performance indicators in assessing health care quality</li> </ul>



Data	Data Extraction Details
	<ul style="list-style-type: none"> <li>• <u>Exclusion:</u> Disease- and condition-specific papers without general import. Papers detailing the reliability and validity testing of specific outcome indicators.</li> </ul>
<b>Details of Interventions</b>	
10. Description of interventions	N/A
11. Intervention settings	N/A
12. Theoretical frameworks	N/A
13. Target groups	N/A
14. Primary Outcomes	<p>Article findings were classified into three broad categories: aims of performance indicator systems; perceived or reported problems; and perceived or reported factors facilitating derivation, implementation or use.</p> <p>Perceived or reported problems and perceived or reported facilitating factors were further organized into the following themes:</p> <ul style="list-style-type: none"> <li>• Conceptual</li> <li>• Technical</li> <li>• Indicator selection</li> <li>• Data availability and reliability</li> <li>• Data validity and confounding</li> <li>• Dealing with confounding</li> <li>• Indicators robustness, sensitivity and specificity</li> <li>• Indicators promoting action and change</li> <li>• Derivation</li> <li>• Implementation</li> </ul>
<b>Results of Review</b>	
15. Meta-analysis?	N/A
16. Analytic Framework	<ul style="list-style-type: none"> <li>• Findings are based on the inclusion of 125 primary studies</li> <li>• Key findings are presented in summary form, illustrating key points. Example references are presented for each theme. A full bibliography is available through the author.</li> </ul>
17. Main Results of Review	<p>There are two main principle uses for performance indicator systems:</p> <ul style="list-style-type: none"> <li>• A summative mechanism for external accountability and verification in assurance systems (Assurance Model)</li> </ul> <p>A formative mechanism for internal quality improvement (Quality Improvement Model) emphasizes learning to promote continual improvement. Change oriented. Formative emphasis, interpretive use of data, therefore lower precision required. This improvement approach fosters trust and communication. Indicators should therefore be used to trigger further investigation and discussion and not simply taken as is. Well derived indicators can be a catalyst for change and can help avoid a proliferation of indicators which makes it difficult to use those indicators efficiently.</p> <p>Assurance systems tend to use indicators prescriptively, to make comparisons which lead to judgements of care quality (i.e blame and shame approach) use of statistics; precision required. Noted that the assurance model has prevailed in the UK and has shaped system development and feedback to PM.</p>

Data	Data Extraction Details
	<p>Perceived or reported problems with performance indicator systems:</p> <ul style="list-style-type: none"> <li>• Conceptual: over-reliance on data systems (assurance model)</li> <li>• Technical: Indicators based on information in previously existing info. systems may not be valid, reliable and comparable</li> <li>• Indicator selection: multiple competing objectives</li> <li>• Data- availability and selection: often problems with availability of data; measure what is available</li> <li>• Data-validity and confounding: may be potentially misleading and could be misinterpreted</li> <li>• Dealing with confounding: other population characteristics that may confound that cannot standardize for them.</li> <li>• Indicators: robustness ,sensitivity and specificity: conclusions drawn on weak and ambiguous evidence (e.g. small number of cases, poor sensitivity and specificity)</li> <li>• Indicators: promoting action and change: indicators give rise to perverse incentives and unintended consequences; distort behaviour in unintended ways (e.g. manipulated records, pursuit of strategies that enhance the measure vs. associated objective, organizational paralysis) (see Smith’s conclusions in Table 2)</li> </ul> <p>Perceived or reported factors facilitating the derivation, implementation and use of performance indicators:</p> <ul style="list-style-type: none"> <li>• Analysis of the work environment, prior to developing indicator systems to identify and address barriers</li> <li>• Derivation: all stakeholders share a common understanding of the intended use of indicators (i.e. internal quality improvement or external accountability); each approach has different requirements for information and different implementation processes (e.g.. – quality improvement approach requires less robust data but more processes that encourage discussion of results vs. Assurance model requires investment in valid and reliable data collection &amp; modelling); involve all stakeholders, indicators are only meaningful if they are markers of outcomes or processes under their influence</li> <li>• Implementation: anticipate resistance, integrated indicators into everyday work practices, development of IT systems to capture data, automated collection, input, analysis, retrieval and dissemination helpful</li> <li>• Use: Interpretation – adjust raw figure for social and environmental factors; participants require learning-focus, non-judgemental feedback; multidisciplinary performance improvement teams should discuss identified problems; avoid external release of indicators designed for internal quality improvement purposes; goals indicators require continuous evaluation to ensure relevance</li> </ul> <p>Overall:</p> <ul style="list-style-type: none"> <li>• Use of indicator systems as a summative tool for external accountability (basis for praise or sanction) leads to negative results and corrupting of the indicators</li> <li>• Use of indicators in a formative model is of far greater potential benefit; this approach fosters trust and communication between clinicians and managers and therefore enhanced ability to work through problems and improve quality</li> </ul>
18. Comments/Limitations	<p>Major limitations reported by authors:</p> <ul style="list-style-type: none"> <li>• The study methodologies of the reviewed articles were not evaluated due to their discursive nature</li> </ul> <p>Additional limitations (noted through critical appraisal):</p>

Data	Data Extraction Details
	<ul style="list-style-type: none"> <li>• Search terms were limited to one term.</li> <li>• The reviewers did not necessarily try to identify all relevant studies (e.g., only health databases were searched).</li> <li>• Review included published studies only</li> <li>• The review discussed relations between clinicians and managers but did not provide much discussion on the impact of the performance indicator systems with other stakeholders such as the public and government (funding agencies)</li> <li>• Review is 10 years old, primary studies are dated</li> <li>• Study context is health services management and appears to be highly applicable to public health context</li> </ul>
Items Reviewed	Review #3: (CPM:A review of their consequences and a framework for research)
<b>General Information &amp; Quality Rating for Systematic Review #3</b>	
1. Author(s) and Date	Franco-Santos, Lucianetti, Bourne, 2012
2. Country	UK
3. Quality Rating	<ul style="list-style-type: none"> <li>• Strong</li> </ul>
4. Objectives of Review	<ul style="list-style-type: none"> <li>• To integrate knowledge on the consequences of contemporary PM (CPM )systems and to identify the mechanisms by which CPM is presumed to impact behaviour, organizational capacity and performance. 2 Questions: <ol style="list-style-type: none"> <li>1. What are the consequences of CPM systems?</li> <li>2. What theories have been used to explain the consequences of CPM systems?</li> </ol> </li> </ul>
<b>Details of Review</b>	
5. Number of primary Studies Included	<ul style="list-style-type: none"> <li>• 76</li> </ul>
6. Types of Studies	<ul style="list-style-type: none"> <li>• Archival, survey, experiment, quasi-experiment, case/field study, mixed methods</li> </ul>
7. Search Period	<ul style="list-style-type: none"> <li>• 1992- October 2011</li> </ul>
8. Number of databases searched/ Other search strategies	<ul style="list-style-type: none"> <li>• 3: ISI Web of Knowledge, EBESCO, ABI Proquest used to search 15 pre-determined journals (based on scoping search and on quality rankings)</li> <li>• Added papers based on checking the reference lists</li> </ul>
9. Inclusion and Exclusion Criteria	<ul style="list-style-type: none"> <li>• <u>Inclusion:</u> Years 1992-2012, 15 journals representing sub-disciplines of accounting, operations and general management, based on empirical evidence</li> <li>• <u>Exclusion:</u> articles from journals with less than a 2 star rating (ABS Academic Journal Quality Guide, 2010), conceptual/theoretical papers, studies from not-for profit and government organizations</li> </ul>
<b>Details of Interventions</b>	
10. Description of interventions	<ul style="list-style-type: none"> <li>• Intervention in all studies was the design, implementation and/or use of a CPM system</li> </ul>
11. Intervention settings	<ul style="list-style-type: none"> <li>• CPMs implemented in various industries including: manufacturing, hotel, financial services, communication technology, management accounting practices, banking, service industry, retail</li> </ul>

Data	Data Extraction Details
12. Theoretical frameworks	<ul style="list-style-type: none"> <li>• Use of theory for one third of the primary studies was not explicit, however theories used to explain outcomes were identified in several studies</li> <li>• Theories identified included: agency theory, contingency theory, goal-setting theory, equity theory and procedural and distributive justice theory</li> </ul>
13. Target groups	<ul style="list-style-type: none"> <li>• In several studies managers were targeted, CEOs/senior VPs, in others management students, in other studies target audience not stated</li> </ul>
14. Primary Outcomes	<ul style="list-style-type: none"> <li>• Level of analysis varied from individual to team, to business units, to organizational</li> <li>• Consequences of CPM systems on: i) people’s behaviour, ii) organisational capabilities iii) performance</li> <li>• Outcome examples include: management practices, communication, strategic focus, organizational learning, financial performance, perceived financial/non-financial performance, role clarity, role conflict, organizational citizenship, participation, motivation, job satisfaction, trust, perceived fairness, cooperation, performance improvement, strategic alignment, management practices, interdepartmental relationships, workload, visibility</li> <li>• contextual variables were also documented (i.e. factors in the literature associated with CPM system consequences (e.g. characteristics of the firm, BSC (Balanced Score Card) format, managerial educational level and experience, CPM maturity, organizational culture, manager’s self-efficacy</li> <li>• Also type of CPM considered to be a moderating variable: for purposes of this study CPM systems were divided into 4 types: i) CPM A – systems that include financial as well as non-financial performance measures implicitly or explicitly linked to strategy and ii) CPM B –system is similar to A but shows explicit cause and effect relationships among the measures iii) similar to A or B but also used to evaluate organizational and managerial performance (without linking the performance evaluation results to monetary rewards and iv) CPM D – similar to C but managerial performance is linked to monetary rewards</li> </ul>
<b>Results of Review</b>	
15. Meta-analysis?	<ul style="list-style-type: none"> <li>• No- not appropriate; conceptual framework used to generate and organize themes</li> </ul>
16. Analytic Framework	<ul style="list-style-type: none"> <li>• Findings are based on the inclusion of 76 papers</li> <li>• Key findings are drawn directly from specific primary studies and are referenced throughout the findings on a one-to-one basis</li> </ul>
17. Main Results of Review	<p><u>General findings:</u></p> <ul style="list-style-type: none"> <li>• Consensus in the literature that CPM systems do not automatically improve performance</li> <li>• Evidence confirms that CPM systems significantly affect people’s behaviour, organizational capabilities and performance</li> <li>• E.g. CPM systems are effective mechanisms for engaging managers in strategy formulation, facilitating translation of strategy into operational terms, encourages perception of strategy development as a continuous process and improving strategic alignment</li> <li>• Evidence also supports the claim that the extent to which CPM system is able to positively influence peoples behaviour, organizational capabilities and performance is directly related to the way the system is designed, developed, and used, and to how well it fits in the context in which it operates; internal and external factors mediate success</li> </ul> <p><b>System-related factors</b></p> <ul style="list-style-type: none"> <li>• To be effective, CPM systems must include performance measures and targets that have high strategic alignment,</li> </ul>

Data	Data Extraction Details
	<p>controllability, timeliness and technical validity (particularly when linked to compensation)</p> <ul style="list-style-type: none"> <li>• To be effective CPM systems must be explicit in relationships between cause-and effect</li> <li>• In development phase system must adopt a fair, transparent and consultive process that allows people to be empowered and involved</li> <li>• CPM system must be iterative and incremental to allow for continuous improvements</li> <li>• Balance of purpose must be sought (ie. Diagnostic versus interactive; informational versus motivational but the literature does not provide much guidance regarding how to achieve this balance)</li> </ul> <p><b>Organizational/Contextual factors</b></p> <ul style="list-style-type: none"> <li>• Effectiveness of CPM systems is moderated by internal contingencies such as employee’s experience or organization’s strategic orientation, structure, information systems, culture and management style, as well as external contingencies such as competition or degree of environmental uncertainty</li> </ul> <p><b>CPM System impact on organizational leadership and culture</b></p> <ul style="list-style-type: none"> <li>• CPM systems both influence and are influenced by organizational culture; CPM can lead cultural change and to a more participative and consultative leadership style (Bititci et al, 2006; Jazayeri &amp; Scapens 2008; Ukko et al, 2007); CPM system improves quality and content of the conversations managers have with employees, brings about new routines, and enhances information sharing; all of these actions combined alter the organization’s culture (Ukko et al, 2007)</li> </ul> <p><u>Specific Contextual Variables (Mediating Factors)<sup>8</sup>:</u></p> <p><b>Outcomes: Individual Behaviours</b></p> <p><b>1. Motivation</b></p> <ul style="list-style-type: none"> <li>• <b>Iterative and consultative process</b> required for CPM development and implementation enhances participation (Butler et al, 1997)</li> <li>• Degree to which employee motivation is generated is influenced by <b>degree of participation in the measurement process</b> (Godener and Soderquist, 2004)</li> <li>• However, adoption of <b>CPM D system</b> (linked to monetary incentives) has negative effects on motivation (Malina &amp; Selto, 2001; Decoene &amp; Bruggeman (2006).</li> <li>• CPM system stimulates motivation when <b>performance measures and targets are controllable, attainable and related to meaningful rewards</b> (Malina and Selto, 2001)</li> <li>• CPM system must be supported by an <b>effective communication mechanism</b> that encourages feedback, dialogue and participation (Malina and Selto, 2001)</li> <li>• Use of a <b>CPM B system</b> (strong cause and effect relationships among its performance measures) increases manager’s perceptions of self-efficacy and goal attractiveness (anticipated satisfaction from goal achievement) and thereby enhances motivation (Burney &amp; Widener, 2007; Hall, 2008) Hall’s explanation: CPM system provides managers with performance information that increases knowledge of the organization’s strategic goals and helps them understand potential effects of their</li> </ul>

<sup>8</sup> Mediating variables mediate the relationship between the predictor and outcome variable and largely explain *how and why* the effects occur.

Data	Data Extraction Details
	<p>actions on the organization's value chain</p> <p><b>2. Role Understanding and Job Satisfaction</b></p> <ul style="list-style-type: none"> <li>• Adoption of <b>CPM type B</b> systems facilitates provision of job-relevant information which in turn decreases role ambiguity; however the association between CPM type B and reduced role conflict is true when i) the level of system complexity is low (i.e. 10 measures or less) ii) manager experience is low (2.2 years) or high (20 years) vs. moderate experience (Burney and Widener, 2007)</li> <li>• Use of CPM systems increase employee job satisfaction when employees <b>trust their supervisor and perceive fairness</b> in the way performance is evaluated (Lau and Sholihin, 2005)</li> <li>• CPM systems help managers learn about how best to improve their performance when <b>appropriate feedback mechanisms</b> are in place (Tuomela, 2005)</li> </ul> <p><b>3. Decision-making, learning and self-monitoring</b></p> <ul style="list-style-type: none"> <li>• CPM systems impact decision making, learning and self-monitoring of managers particularly <b>managers with low experience</b> and/or from small-sized business units; CPM systems confirm managers' mental models of how their business operates (Hall, 2010)</li> </ul> <p><b>3. Subjectivity, justice and trust</b></p> <ul style="list-style-type: none"> <li>• Subjectivity is more problematic when the CPM system is used to decide monetary rewards (ie. <b>CPM type D</b>)</li> <li>• Perception of justice is influenced by the extent to which <b>the type D system reflects a strategic causal model</b> and the extent to which the system is <b>technically valid</b> (Burney et al, 2009)</li> <li>• Organizations with <b>well-defined and specified performance measures</b> result in higher levels of procedural justice and trust in supervisors which then results in higher employee satisfaction (Lau &amp; Sholihin, 2005)</li> <li>• When <b>subjectivity is understood as perceptions of unfairness</b>, evidence suggests employees may be disappointed with the use of CPM systems; however when <b>subjectivity is perceived in terms of flexibility</b>, data show that CPM systems can support organizational change</li> </ul> <p><b>4. Conflicts and Tensions</b></p> <ul style="list-style-type: none"> <li>• One-way reporting generates tensions that contribute to climate of distrust and alienation (Malina &amp; Selto, 2001)</li> <li>• <b>Top managements' use of CPM systems</b> can generate tension during the development of new measures and initiatives (Marginson, 2002)</li> <li>• Reluctance to use CPM systems by managers who experience <b>increased workload</b> and <b>visibility of performance</b>; results in tensions</li> <li>• Development, implementation, use and maintenance of CPM systems are costly, time consuming, generating conflicts and tensions (Ahn 2001, Butler, 1997)</li> </ul> <p><b>Outcomes: Organizational Capabilities</b></p>

<sup>9</sup> Moderating variable is a variable that influences the direction or strength of relationship between a predictor and outcome variable, and largely explains *when* certain effects will hold true.

Data	Data Extraction Details
	<ul style="list-style-type: none"> <li>• Appropriate balance between diagnostic and interactive uses of CPM systems can encourage the utilization and development of organizational capabilities such as organizational learning, entrepreneurship and market orientation; impact of CPM on innovation remains unclear</li> <li>• Specific organizational capabilities are summarized below: <ol style="list-style-type: none"> <li><b>1. Strategic processes: alignment, development, implementation and review</b></li> <li>• Extent to which CPM systems are able to influence an organization’s strategy processes is shaped by i)the cognitive limitations of managers ii) way in which system is designed, developed and used</li> <li><b>2. Communications</b></li> <li>• CPM has a positive effect on communication when system is supported by <b>two-way communications</b> to encourage knowledge-sharing, trust and avoid resistance</li> <li><b>3. Innovation and Organizational Learning</b> <ol style="list-style-type: none"> <li>1. CPM systems impact organizational innovation <b>positively only in firms with low levels of innovation</b>, while it <b>mitigates against innovation in firms with high innovation</b></li> <li>2. Organizational learning is facilitated when <b>the focus is on action and improvement</b> versus on reporting and control (Godener &amp; Soderquist, 2004; Ahn 2001)</li> <li>3. Interactive use of CPMs fosters organizational innovation, organizational learning, entrepreneurship, market orientation; <b>diagnostic use of CPM systems</b> weakens these capabilities (Henri, 2006).</li> <li><b>4. Management practices</b> <ul style="list-style-type: none"> <li>• To be effective, CPM systems must be developed and implemented <b>building on employees’ professionalism</b>, should acknowledge organizations’s <b>previous experience and access existing skills</b>, <b>allow experimentation with measures and encourage transparency</b> (Wouters and Wilderom, 2008)</li> <li>• Impact of CPM systems on management practices highly depends on <b>maturity of the system, organization’s culture, way the system is used</b> and <b>characteristics of system’s users</b> (e.g. education, work experience)</li> </ul> </li> </ol> </li> </ol> </li> <li><b>Outcomes: Consequences for Performance</b> <ul style="list-style-type: none"> <li>• Impact on CPM systems on <i>reported performance</i> is unclear; literature is inconclusive; quantitative studies on perception of performance tend find a positive association between CPM systems and perception of organizational performance; however in qualitative studies, the impact of CPM systems on perceptions of a firms performance is not always positive and is highly dependent on the way the CPM system is developed and used</li> </ul> </li> <li><b><u>Specific Contextual Variables (Moderating Factors)<sup>9</sup>:</u></b> <ol style="list-style-type: none"> <li><b>1. Team performance</b> <ul style="list-style-type: none"> <li>• CPM systems improve team performance when team members participate in the setting of performance targets and team work is encouraged</li> </ul> </li> </ol> </li> <li><b>Managerial Performance</b> <ul style="list-style-type: none"> <li>• Inconsistency in the literature: one study finds that short-tenure managers respond better to CPM systems (Hall, 2010) while another study finds that those with long-tenure respond better to CPM systems (Griffith &amp; Neely, 2009)</li> </ul> </li> <li><b><u>Useful Theories used the literature to explain the effects of CPM:</u></b></li> </ul>

Data	Data Extraction Details
	<ul style="list-style-type: none"> <li>• <b>Agency Theory:</b> addresses the problem created by differing goals between a principal and agent; used in CPM research to make a case for multi-criteria performance measures that reduce information asymmetry between agents (managers) and principals (stakeholders)</li> <li>• <b>Contingency Theory:</b> predicts that the relationship between an organization’s characteristics (e.g. CPM and organizational performance depends on specific contingencies; therefore CPMs cannot be universally appropriate, in the literature this theory has been used to highlight specific contingencies that may reduce or enhance impact (e.g. strategic orientation)</li> <li>• <b>Resource-based view of the firm Theory:</b> organizations are conceptualized as bundles of resources and in order to gain competitive advantages, they need to find those resources deemed valuable, rare and essential; these capabilities are enhanced by joint use of CPM systems for diagnostic and interactive purposes</li> <li>• <b>Cognitive and information-processing theories:</b> main premise is that individuals’ decision-making processes are not entirely rational, therefore in the context of CPM, managers evaluate and interpret data in ways consistent with their preferences (e.g. may impact choice of measures, but in the literature largely impacts CPM Type D systems)</li> <li>• <b>Goal Setting Theory:</b> Goals set by individuals have an impact on performance, i.e., use of specific and challenging goals produces greater performance effects than “do your best” goals; in CPM literature used as an argument for setting technically valid performance measures; clear, specific performance measures are associated with reduced ambiguity about strategic direction</li> <li>• <b>Equity, distributive and procedural justice theories:</b> explains behaviours resulting from individuals’ beliefs about fairness for work contributions. If inequities are perceived, they will be motivated to seek justice; used in CPM research (Types C &amp; D) to explain behaviours that are consistent with dissatisfaction with the system (Ittner et al, 2003); when notions of fairness and justice have been taken into consideration, likelihood of design, implementation and use is higher (Burney et al, 2009)</li> </ul>
18. Comments/Limitations	<p><b>Major limitations reported by authors:</b></p> <ul style="list-style-type: none"> <li>• Despite being systematic and rigorous, the review might have missed some relevant work in journals outside of the ones selected, work outside of the sub-fields of accounting, operations and strategy, has been published in a non-English-language journal or refers to public sector organizations</li> <li>• Authors’ judgment and analysis used to interpret the work of qualitative studies included in the review and may not correspond with original interpretations</li> </ul> <p><b>Additional limitations (noted through critical appraisal):</b></p> <ul style="list-style-type: none"> <li>• When discussing contextual variables, not enough detail provided (e.g. organizational culture – what aspects of the culture are facilitative or prohibitive?)</li> <li>• Quality assessment was not done for individual papers; evaluated based on journal rankings; therefore strength of evidence ambiguous in some cases</li> <li>• Use of theories provided description for how they have been used in previous research but review does not assess or comment on the utility of these theories in enhancing decision-making</li> <li>• Generally, paper has breadth and covers a broad range of studies but lacks depth in some areas</li> </ul>



Data	Data Extraction Details
	<ul style="list-style-type: none"> <li>While there is application to public sector setting it is NB to note that public sector environments were excluded from this review , therefore any insights from this sector are not part of this review</li> <li>May have missed critical opportunities with large bodies of work in the fields of public administration, government, non-profit environments</li> </ul>
Items Reviewed	<b>Book</b>
<b>General Information &amp; Quality Rating for Book #1</b>	
1. Author(s) and Date	de Lancer Julnes, P.
2. Country	USA
3. Quality Rating	<ul style="list-style-type: none"> <li>Moderate</li> </ul>
4. Objectives of Book/Chapter	<ul style="list-style-type: none"> <li>Purpose of the book is to support practical efforts to build use, and sustain PM systems as guided by the best empirical evidence available.</li> <li>Book focuses on building theory that can help develop and sustain effective PM systems in recognition that despite it's potential contributions, PM information appears to be not widely used.</li> </ul>
<b>Details of Book Chapter</b>	
5. Intended audience	<ul style="list-style-type: none"> <li>Practitioners within public organizations, students in public administration</li> </ul>
6. Objective reasoning	<ul style="list-style-type: none"> <li>Conclusions are drawn from a review of the literature, identification of a theoretical framework and results of author's primary study which used a mixed methodology (quantitative &amp; qualitative)</li> <li>Conclusions are empirically-based</li> </ul>
7. Coverage (Types and scope of references used)	<ul style="list-style-type: none"> <li>References used extensively in the literature review, and to underpin the theoretical framework</li> <li>References also used to contextualize and interpret results</li> <li>References included a range of journal articles (peer reviewed), textbooks and handbooks on PM and related disciplines (e.g. program evaluation, knowledge utilization, change management; references also included to support research methodology and analyses used</li> </ul>
<b>Details of Interventions</b>	
8. Description of proposed interventions/strategies	<ul style="list-style-type: none"> <li>Literature Review: Conclusions drawn from empirical and practical considerations identified in the literature; conclusions drawn from studies of PM interventions taking place in public service organizations</li> <li>Study conclusions are based on quantitative survey results (N=934) drawn from mailed survey to state and local government employees across the US and included auditors, managers, and analysts; included 599 designated 'opinion leaders'; Drawn from a pre-determined sampling frame</li> <li>Study conclusions are also based on qualitative follow-up telephone interviews</li> <li>Focus of the study was on organizational use of PM systems</li> </ul>
9. Intervention settings or contexts	<ul style="list-style-type: none"> <li>Government departments: state, municipal and county levels</li> </ul>
10. Theoretical frameworks	<ul style="list-style-type: none"> <li>Knowledge Utilization Framework (de Lance Julnes, 2004) used as the foundational concept for understanding the utilization of PM information</li> </ul>

Data	Data Extraction Details
	<ul style="list-style-type: none"> <li>• Organizational theory (Rational model of organizational innovation and change vs. political-cultural model of organizations) is used and challenged to support main study hypotheses:               <ul style="list-style-type: none"> <li>○ Hypothesis 1: Utilization is composed of 2 distinct phases- adoption and implementation each affected differentially by contextual factors</li> <li>○ Hypothesis 2: Rational factors will have greater impact on adoption than on implementation</li> <li>○ Hypothesis 3: Politics and culture will have a greater effect on the implementation stage than on the adoption stage</li> </ul> </li> </ul>
11. Target groups	<ul style="list-style-type: none"> <li>• Managers, decision-makers, employees within public sector organizations</li> </ul>
12. Primary Outcomes	<ul style="list-style-type: none"> <li>• Levels of PM adoption and implementation (i.e. efficiency, outcome and output measures developed and used)</li> <li>• Impact of rational factors including: access to information, management involvement, committed resources, staff assignment, training, use of benchmarks, communication</li> <li>• Impact of culture &amp; politics: promotion of PM by managers, employees, elected officials, non-management understands and accepts, management implements, risk taking is rewarded</li> </ul>
<b>Conclusions of Book Chapter</b>	
13. Analytic Framework	<ul style="list-style-type: none"> <li>• Key findings are presented from 13 case studies of government departments, factor analysis of survey data and regression models, and themes drawn from 18 qualitative telephone interviews</li> </ul>
14. Main conclusions drawn from Book Chapter	<ul style="list-style-type: none"> <li>• Key findings from 13 case studies of governments using PM: (p. 36)</li> <li>• Organizational involvement               <ul style="list-style-type: none"> <li>○ Involve staff in creating outcome measures to increase use; entire organization needs to be involved</li> <li>○ Staff may not see performance measures as a critical part of daily work and may see it as an add-on</li> <li>○ PM information should be available to all decision makers at all levels of the organization; enhanced by systematic processes for data collection, analysis and reporting, communication of results</li> <li>○ Involve elected officials in developing and using indicators</li> </ul> </li> <li>• Performance measures               <ul style="list-style-type: none"> <li>○ Setting goals too high &amp; lack of benchmarks are issues</li> <li>○ Critical to develop only those indicators that address strategic priorities and departmental results to avoid irrelevant data collection</li> <li>○ PM must be part of a larger effort</li> <li>○ Measure what is important to customers</li> <li>○ Performance data must be used in tangible ways; must be constant connection between information and action</li> <li>○ Performance measures should not be used to reward or punish</li> <li>○ Building on existing data and performance systems may save time and maintain morale</li> </ul> </li> <li>• PM System               <ul style="list-style-type: none"> <li>○ Takes time to develop a good system; requires a coordinator</li> <li>○ Emphasis on accountability can be threatening for managers; managing for results represents a cultural change- anticipate resistance, denial, disbelief</li> </ul> </li> </ul>

Data	Data Extraction Details
	<ul style="list-style-type: none"> <li>○ Process of developing performance measures is iterative; system should be flexible enough for course corrections</li> <li>● Findings support the need to build separate strategies for adoption and implementation of PM as they are 2 distinct processes</li> <li>● Rational/technocratic factors are more influential in the adoption phase (i.e., internal requirements, resources, goal orientation and information)</li> <li>● Political/cultural factors are more influential in the implementation phase (i.e., attitudes about risk taking, external interest groups); however resources and information are also important rational factors</li> <li>● The influence of internal interest groups is most critical during the adoption phase; while the influence of external interest groups is most impactful during the implementation phases; ie. Continued support of elected officials and the public (e.g. budget approvals for improvements), expectations for the use of performance measures)</li> <li>● Recommendations include: <ul style="list-style-type: none"> <li>○ Conduct an assessment of organization’s readiness to develop and implement performance measures</li> <li>○ Identify and involve the organization’s internal and external interest groups</li> <li>○ Involve employee unions</li> <li>○ Support the adoption of performance measures even if organization is not able to implement performance measures in a short period of time; awareness and culture that adoption can create may improve the chances for implementation later on</li> <li>○ Emphasize the need to develop a “performance culture”</li> </ul> </li> <li>● Need to conceptualize PM in terms of its main drivers (purpose) and knowledge use; author identifies a need for a sound theory of performance measurement utilization</li> <li>● Survey results and follow-up interviews confirmed the author’s conceptualization of PM as knowledge use (Figure 9.2): <ul style="list-style-type: none"> <li>○ E.g. if main driver of PM system is accountability then information is produced for reassurance and compliance, information is used to convey value to external audiences</li> <li>○ If main driver of PM system is improvement then information is produced to enhance program learning and information is used as a means to enhance understanding of program accomplishments and how to improve them</li> <li>○ If main driver of PM system is understanding then information is produced for enlightenment (evidence supports this as the most prevalent use of PM in the public sector)and is used to make more informed decisions based on insights (e.g. how to improve or shift assumptions )</li> <li>○ If main driver is mobilization (e.g. support for increased funding) then information is produced to legitimize and is used to validate, rationalize past, current and future courses of action ( PM can be used as an advocacy tool for mobilizing external support (see figure 9.2)</li> <li>○ Findings from the literature review chapter:</li> </ul> </li> <li>● Based on empirical evidence (survey results) 2 main themes: i)complexity- to be successful someone needs to be in charge, the process must be managed strategically and there are significant costs involved but they will diminish over time</li> <li>● ii) PM systems have both instrumental and symbolic use and the non-instrumental uses (e.g. program learning which does not immediately lead to program change) should also be identified as interim successes</li> </ul>

Data	Data Extraction Details
	<ul style="list-style-type: none"> <li>• Qualitative findings: Major strategies for addressing challenges: (p. 193) <ul style="list-style-type: none"> <li>○ Performance measures must be used by top leadership</li> <li>○ Provide training on PM</li> <li>○ Take small steps</li> <li>○ Create expectation for use</li> <li>○ Show example that it can be done</li> <li>○ Include stakeholders</li> <li>○ Provide incentives for use of the information</li> </ul> </li> </ul>
15. Component(s) of research question addressed	<ul style="list-style-type: none"> <li>• Addresses all components of the research question comprehensively</li> </ul>
16. Limitations	<p>Major limitations reported by authors:</p> <ul style="list-style-type: none"> <li>• Author critiques previous literature but does not provide discussion of limitations for her study</li> </ul> <p>Additional limitations (noted through critical appraisal):</p> <ul style="list-style-type: none"> <li>• Provides a great deal of information; attempts to provide chapter summaries somewhat helpful, however a more condensed version and summary of findings required</li> <li>• Literature review not comprehensive</li> <li>• Case studies and research is US based and some findings may be specific to US government contexts</li> <li>• Needs a stronger link (e.g. specific references to findings) between theoretical framework and findings</li> <li>• Findings are based largely from 1997 (summary based on old data)</li> <li>• Findings based on public sector environments with high applicability for public health setting</li> </ul>
17. Comments	<ul style="list-style-type: none"> <li>• Reading is quite dense but a number of useful findings</li> </ul>
Items Reviewed	Book/Chapter #14 (Poister, T.H. 2003)
<b>General Information &amp; Quality Rating for Book/Book Chapter #2</b>	
1. Author(s) and Date	Poister, T.H. (2003)
2. Country	USA
3. Quality Rating	<ul style="list-style-type: none"> <li>• Moderate</li> </ul>
4. Objectives of Review	<ul style="list-style-type: none"> <li>• To provide strategies for developing and implementing performance measurement systems in public &amp; non-profit organizations.</li> </ul>
5. Intended audience	<ul style="list-style-type: none"> <li>• Practitioners within public organizations, students in public administration</li> </ul>
6. Objective reasoning	<ul style="list-style-type: none"> <li>• Recommendations appear to reflect both fact and opinion. References are provided generally at the end of the book. Most findings and recommendations are not supported by specific references.</li> </ul>
7. Coverage (Types and scope of references used)	<ul style="list-style-type: none"> <li>• Comprehensive reference list included in the back of the book (No chapter-based reference lists)</li> <li>• Most references U.S. based</li> <li>• Most references from within the discipline of public administration; inclusive of peer journals (e.g. Public Administration)</li> </ul>

Data	Data Extraction Details
	Review) and books (i.e. textbooks, handbooks) <ul style="list-style-type: none"> <li>Includes author's previous research (i.e. 10 citations ; 6 of which were empirical or conceptual papers in peer reviewed journals)</li> </ul>
<b>Details of Interventions</b>	
8. Description of proposed interventions/strategies	<ul style="list-style-type: none"> <li>The focus of this review was on chapter 14 which summarizes common problems encountered in the development and implementation of PM systems and identifies specific strategies for successful implementation</li> </ul>
9. Intervention settings or contexts	<ul style="list-style-type: none"> <li>Chapter 14 represents a synthesis of common problems noted in research and within practice settings</li> <li>Conclusions are drawn primarily from the within the discipline of public administration.</li> <li>Elements for successful implementation are drawn from best practices from public agencies and private firms as summarized in the National Performance Review (1997, US). Poister then cites specific implementation challenges identified in empirical studies. These challenges are provided in summary format only with no specific reference to individual studies.</li> </ul>
10. Theoretical frameworks	<ul style="list-style-type: none"> <li>Atheoretical approach</li> <li>Strategies for successful implementation are provided within the context of the design and development cycle for performance measurement systems that is common to the field</li> <li>Poister offers a 10 step process:               <ol style="list-style-type: none"> <li>Secure management commitment</li> <li>Organize the system development process</li> <li>clarify purpose and system parameters</li> <li>Identify outcomes and other performance criteria</li> <li>Define, evaluate, and select indicators</li> <li>Develop data collection procedures</li> <li>Specify system design</li> <li>Conduct a pilot and revise if necessary</li> <li>Implement full-scale evaluation</li> <li>Use, evaluate and modify system as appropriate</li> </ol> </li> </ul>
11. Target groups	<ul style="list-style-type: none"> <li>Managers, decision-makers, employees within public sector organizations</li> </ul>
12. Primary Outcomes	<ul style="list-style-type: none"> <li>N/A</li> </ul>
<b>Conclusions of Book Chapter</b>	
13. Analytic Framework	<ul style="list-style-type: none"> <li>As a book there is no information on the criteria used to select sources. However, the chapter does reference conclusions about effectiveness drawn from previous literature,</li> <li>Full list of references used in the book is located at the end of the book.</li> <li>Poister's list of 30 practices to ensure usefulness of PM systems is not referenced and may reflect a summary of practical ideas.</li> </ul>
14. Main conclusions drawn from Book Chapter	<ul style="list-style-type: none"> <li>Although measurement can help public sector organizations manage for results there is a substantial amount of scepticism about feasibility and utility of measurement systems</li> <li>Measurement systems without a strong link to management and decision-making process, may generate useful information but will not lead to better decisions, improved performance, or more effective accountability and control; this link between</li> </ul>

Data	Data Extraction Details
	<p>systems and decision-making is vital</p> <ul style="list-style-type: none"> <li>• Poister offers 30 strategies for developing and implementing performance measurement systems to address 7 common challenges in the literature, associated with implementation: i) usefulness of information provided, ii) Resource Requirements, iii) Lack of utilization iv) lack of stakeholder buy-in , v)internal resistance vi) goal displacement and gaming vii) system abuse</li> </ul> <p>i)Usefulness of information produced</p> <ol style="list-style-type: none"> <li>1. Clarify missions, strategy, goals and objectives and program structure as a prelude to measurement</li> <li>2. Develop logic models to identify the linkages between programmatic activity and outputs and outcomes, and use this framework to define appropriate measures</li> <li>3. Be results driven rather than data driven in the search for relevant measures</li> <li>4. Work toward “omni directional alignment” across various management processes</li> <li>5. Periodically review the measures and revise them as appropriate</li> </ol> <p>ii)Resource Requirements</p> <ol style="list-style-type: none"> <li>6. Be realistic in estimating how long it will take to design and implement a particular measurement system</li> <li>7. Develop a clear understanding of the full cost of supporting and maintaining a measurement system, keep it reasonable in relation to the information produced</li> <li>8. Use existing or readily available data whenever appropriate, and avoid costly new data collection efforts unless essential</li> </ol> <p>iii)Lack of Utilization</p> <ol style="list-style-type: none"> <li>9. Tailor measures, reporting frequencies and presentation formats to the intended use to encourage utilization</li> <li>10. Focus on a relatively small number of important measures of success (no magic number)</li> <li>11. Keep it simple and straightforward</li> <li>12. Emphasize comparisons in reporting</li> <li>13. Develop multiple sets of measures, if necessary, for different audiences</li> <li>14. Identify “results owners”, the individuals or organizational units that have responsibility for maintaining or improving performance on key output and outcomes measures</li> </ol> <p>iv) Lack of Stakeholder Buy-in</p> <ol style="list-style-type: none"> <li>15. Informally monitor usefulness and cost-effectiveness of the measurement system and make adjustments accordingly</li> <li>16. Build ownership by involving stakeholders in identifying performance criteria, measures, targets and data collection systems</li> <li>17. Consider clients and customers throughout the process and involve them when practical</li> <li>18. Generate leadership to develop buy-in for the measures, and demonstrate executive commitment to using them</li> </ol> <p>v) Internal Resistance</p> <ol style="list-style-type: none"> <li>19. Communicate to managers and employees how and why measures are being used</li> <li>20. Provide early reassurance that the system will not produce across-the-board actions such as budget cuts, layoffs, or furloughs</li> <li>21. Consider implementing the system in layers, or by division or program, to work out problems and demonstrate success</li> <li>22. Make sure that program managers and staff see performance data first and have a chance to check and correct them, if necessary, before sending reports up to the executive level</li> </ol>

Data	Data Extraction Details
	<p>23. Include field in the reporting formats for explanatory comments along with the quantitative data</p> <p>24. Delegate increased authority and flexibility to both program managers and staff administrators in exchange for holding them accountable for results</p> <p>25. tie performance appraisal system, incentive system and recognition program to the measurement system</p> <p>vi) Goal Displacement and Gaming</p> <p>26. Anticipate possible problems of goal displacement and gaming the system and avoid them by balancing measures</p> <p>27. Install quality assurance procedures to ensure the integrity of the data, and impose sanctions to minimize cheating</p> <p>vii) System Abuse</p> <p>28. Be wary of misinterpretation and misuse of measures</p> <p>29. Use measurement systems constructively, not punitively, at least until it is clear that sanctions are needed</p> <p>30. Recognize and use the measures as indicators only</p> <ul style="list-style-type: none"> <li>• Performance measurement is a necessary but insufficient condition for results-oriented management. For measurement to be useful, it must be effectively linked to other management and decision-making processes</li> </ul>
15. Component(s) of research question addressed	<ul style="list-style-type: none"> <li>• Offers practical strategies for addressing 7 common implementation challenges. Most of the solutions address PM system factors and the process that will support successful implementation</li> </ul>
16. Limitations	<p>Major limitations reported by authors:</p> <ul style="list-style-type: none"> <li>• None noted by author.</li> </ul> <p>Additional limitations (noted through critical appraisal):</p> <ul style="list-style-type: none"> <li>• The publication uses mostly American sources – lacks an international perspective</li> </ul> <p>Most of the sources are from the 1990s – limited ideas on current thinking</p>
17. Comments	<p>Information provided in the chapter is highly relevant to the topic and provides specific strategies for implementing a performance measurement system.</p>

## Appendix E: Four Types of Contemporary PM Systems Found in the Literature

Type of PM System	Description	Primary Purpose
Type A CPM	Includes financial and non-financial performance measures implicitly or explicitly linked to strategy	Used to inform management decision-making and to evaluate organizational performance
Type B CPM	Includes financial and non-financial performance measures implicitly or explicitly linked to strategy <b>and shows explicit cause and effect relationships among the measures</b>	Used to inform management decision-making and to evaluate organizational performance
Type C CPM	Includes financial and non-financial performance measures implicitly or explicitly linked to strategy	Used to inform management decision-making and to evaluate organizational <b>and managerial performance (without linking the performance evaluation results to monetary rewards)</b>
Type D CPM	Includes financial and non-financial performance measures implicitly or explicitly linked to strategy	Used to inform management decision-making and to evaluate organizational performance <b>and influence monetary rewards</b>



## Appendix F: Comparison of Medical vs. Management Systematic Reviews

	Medical Systematic Reviews	Management Systematic Reviews
<b>Types of Studies Used</b>	<ul style="list-style-type: none"> <li>▪ Based on a hierarchy of evidence</li> <li>▪ Favour RCT designs</li> </ul>	<ul style="list-style-type: none"> <li>▪ Incorporation of both quantitative and qualitative studies (qualitative methodologies including case studies are popular methods for primary studies)</li> </ul>
<b>Inclusion/Exclusion Criteria</b>	<ul style="list-style-type: none"> <li>▪ Inclusion/exclusion criteria are expressed in protocol to ensure review of best available evidence</li> </ul>	<ul style="list-style-type: none"> <li>▪ Inclusion/exclusion criteria are often not formally, applied, recorded or monitored</li> <li>▪ Reviews are based on studies that appear relevant</li> </ul>
<b>Quality Assessment</b>	<ul style="list-style-type: none"> <li>▪ Studies are assessed against pre-determined criteria</li> <li>▪ are drawn from theme-based (and sometimes theory-based) synthesis Internal validity of study is judged</li> <li>▪ Including and assessing qualitative studies is problematic</li> </ul>	<ul style="list-style-type: none"> <li>▪ Quality assessment focused on fit between research methodology and research question</li> <li>▪ Formal quality assessment criteria are not applied to included articles; instead, ratings are based on the quality rating of the journal</li> </ul>
<b>Availability of raw data and approach to synthesis</b>	<ul style="list-style-type: none"> <li>▪ Analyze raw data from primary studies to draw conclusions (i.e. meta-analysis)</li> </ul>	<ul style="list-style-type: none"> <li>▪ Raw data from primary studies are not often available in articles; analysis is based on summarized study findings</li> <li>▪ Conclusions are drawn from theme-based (and sometimes theory-based) synthesis</li> </ul>

# Appendix G: Glossary of Terms and Definitions

## GLOSSARY OF TERMS AND DEFINITIONS

**Adoption Phase:** The development of efficiency, output and outcome measures. <sup>3</sup>

**Assurance Model versus Internal Quality Improvement Models of PM:** Two principle uses for PM systems are identified in the literature i) a summative mechanism for external accountability (assurance model) and ii) a formative mechanism (internal quality improvement). <sup>4</sup>

**Contemporary PM System:** In the for-profit sector traditional PM focused almost exclusively on financial measures; contemporary PM systems refer to the use of financial and non-financial measures to operationalize strategic objectives and have the following features: i) role of the CPM is to evaluate performance for informational or motivational purposes, ii) comprises a supporting infrastructure and iii) involves specific processes of information provision, measure design and data capture. <sup>6</sup>

**Design Phase:** This phase, referred to as “adoption” by de Lancer Julnes, is inclusive of deciding on a PM framework, identifying and selecting appropriate measures, identifying, selecting and developing an appropriate information infrastructure, determining reporting formats and assigning responsibilities for maintaining the system. <sup>1,2,4,5</sup>

**Gaming:** Occurs when performance standards are poorly balanced or defined, and allow staff to “game the system” in order to look good on measures while not truly achieving goals. <sup>2</sup>

**Implementation Phase:** The use of measures to make decisions. <sup>3</sup>

**Organizational Factors:** Refer to characteristics of the organization and can include management behaviours, policies, resources, culture and work environment.

**PM System:** The Steering Committee’s working definition of a well-functioning PM system is a “*comprehensive, cyclical approach to management that integrates strategy, resources, processes, people, measurement, and reporting in order to set direction, improve decision-making and drive change.*”

**Political/Cultural Factors:** Refers to a model of organizational change that identifies the significance of powerful interest groups and organizational culture in preventing or promoting organizational change. <sup>2</sup>

**System factors:** Refer to elements within the PM system and can include type of framework (e.g. Balanced Scorecard), measures and indicators, and monitoring and communication processes.

**Rational/Technocratic Factors:** Based on the rational model of organizational innovation and change which suggests that organizational change is a matter of rationality, and policy decisions or directives will automatically result in behavioural change. Rational factors can include organizational goals, technical capacity, and commitment of resources and access to information.<sup>2</sup>

## Appendix H: Four Types of Contemporary PM Systems Found in Literature

Factors	Questions	Notes
<b>Applicability (feasibility)</b>		
Political acceptability or leverage	<ul style="list-style-type: none"> <li>• Will the intervention be allowed or supported in current political climate?</li> <li>• What will the public relations impact be for local government?</li> <li>• Will this program enhance the stature of the organization?               <ul style="list-style-type: none"> <li>◦ <i>For example, are there reasons to do the program that relate to increasing the profile and/or create a positive image of public health?</i></li> </ul> </li> <li>• Will the public and target groups accept and support the intervention in its current format?</li> </ul>	<p><b>External Audiences</b></p> <ul style="list-style-type: none"> <li>- taxpayers are concerned that money is spent well</li> <li>- initiative will be viewed by Council as consistent with fiscal responsibility (i.e spending money wisely)</li> <li>- Council has already determined performance management to be a regional priority</li> <li>- we now have to sign accountability agreements with the MOHLTC which is focused on performance indicators</li> <li>- potential risks: what if we end up with results that are less than stellar? If performance management reveals problems with service this can be politically difficult</li> <li>- we have already set precedence: i.e. cancel programs that are not shown to be effective</li> <li>- we have been transparent with Council, therefore we have already assumed risk</li> <li>- our approach to Council has been to acknowledge negative results then to do something about it (e.g. immunization risk mitigation strategy)</li> <li>- it is better to be proactive – this helps to identify and manage our risks</li> <li>- the public has also voiced their expectations for increased transparency</li> <li>- we are under extreme resource constraints, therefore there must be recognition that performance management is expensive to correct and is conducted at the cost of other programs</li> <li>- demonstrating quality service enhances the status of PPH</li> </ul>

Factors	Questions	Notes
<b>Applicability (feasibility)</b>		
Social acceptability	<ul style="list-style-type: none"> <li>• Will the target population find the intervention socially acceptable? Is it ethical?               <ul style="list-style-type: none"> <li>○ <i>Consider how the program would be perceived by the population.</i></li> <li>○ <i>Consider the language and tone of the key messages.</i></li> <li>○ <i>Consider any assumptions you might have made about the population. Are they supported by the literature?</i></li> <li>○ <i>Consider the impact of your program and key messages on non-target groups.</i></li> </ul> </li> </ul>	<p><u>Internal Audiences</u></p> <ul style="list-style-type: none"> <li>- staff will support because they want to know that their programs work</li> <li>- however if the system doesn't add value, there will be push back</li> <li>- there is potential for confusion (e.g. ministry reporting vs. our internal reporting)</li> <li>- Capacity of the teams to do the thinking required in performance management is highly variable across public health (this is supported by the results of the organizational assessment)</li> <li>- decision-making capacity among teams will be variable</li> <li>- there was a large training component for PPE (Performance Planning and Evaluation), the Performance Management initiative will require a lot of training</li> <li>- feedback from the organizational assessment was largely positive</li> <li>- the PM initiative has positive potential if we can successfully implement a learning model</li> <li>- we need to tailor processes to meet the teams where they are at; it is important to introduce PM to teams in a way that encourages and supports uptake</li> <li>- "within public health, we are not one business" which presents a real challenge for public health</li> <li>- process of developing measures and processes will vary widely across teams</li> <li>- proper selection of indicators is a big motivator for managers and staff who want to see their successes</li> <li>- due to the long-term nature of our desired health outcomes we need to be able to select "soft indicators" that can be motivating to staff</li> <li>- key to success is that it must be customized for each team</li> <li>- the exercise will force us to examine what we do and why we do it</li> </ul>

Factors	Questions	Notes
<b>Applicability (feasibility)</b>		
		<ul style="list-style-type: none"> <li>- what makes it exciting is analyzing everything we're doing in terms of links to the strategic plan</li> <li>- the performance management initiative must be framed in terms of emotional benefits in addition to population outcomes (e.g. team pride in what they are doing)</li> <li>- group was affirmed that their experience with emphasizing "managing" versus "measuring", was validated by the literature</li> <li>- NB key messaging: performance management is not your individual Performance Appraisal</li> <li>- we're all doing performance management to some degree if its presented as an enhancement and not something new this will increase acceptability</li> <li>- we need to understand and communicate performance management as a coordinating and synthesizing strategy</li> <li>- good time to start the Performance Management initiative after EIDM and workforce development, PM can be positioned as a "synthesizer"</li> <li>- feedback around the table was that relative to some of the other priorities that are completely brand new, they do not sense the same stress levels with the PM initiative</li> <li>- Focus on supervisors and managers (in the literature) fits very well with the other things they are learning</li> <li>- The review assumes that people understand business lingo. How will we change the language of the recommendations to be understood by public health professionals?</li> <li>- (When asking about program performance) These are tough questions – need to create a safe environment for teams to be truthful and forthcoming</li> <li>- "Integration is our best sell"</li> <li>- The main motivator for participation (burning platform) in performance management is determining the value of what we do</li> </ul>

Factors	Questions	Notes
<b>Applicability (feasibility)</b>		
		<ul style="list-style-type: none"> <li>- Budget constraints is key driver – need to make clear decision about workload</li> <li>- “when you’re at the bottom (in terms of funding) all decisions count</li> </ul>
Available essential resources (personnel and financial)	<ul style="list-style-type: none"> <li>• Who/what is available/essential for the local implementation?</li> <li>• Are they adequately trained? If not, is training available and affordable?</li> <li>• What is needed to tailor the intervention locally?</li> <li>• What are the full costs? <ul style="list-style-type: none"> <li>○ <i>Consider: in-kind staffing, supplies, systems, space requirements for staff, training, and technology/administrative supports.</i></li> </ul> </li> <li>• Are the incremental health benefits worth the costs of the intervention? <ul style="list-style-type: none"> <li>○ <i>Consider any available cost-benefit analyses that could help gauge the health benefits of the intervention.</i></li> <li>○ <i>Consider the cost of the program relative to the number of people that benefit/receive the intervention.</i></li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>☞ Will be important very early in the design phase to have open discussion about resources, particularly staff time available</li> <li>☞ it is not likely that the PM initiative will include additional staff resources; it will be a trade-off between service delivery and performance management</li> <li>☞ no new resources at the team level, initiative needs to be viewed as part of the PPE process</li> <li>☞ biggest cost is staff time to train and build competency</li> <li>☞ other costs include systems and technology (we are currently looking for an interim solution)</li> <li>☞ will use the pilots to estimate and document costs/resources</li> <li>☞ IT resources are extremely limited</li> <li>☞ Encourage the teams to choose “high yield” indicators</li> <li>☞ Keep indicators focused on improved service to the public</li> </ul>
Organizational expertise and capacity	<ul style="list-style-type: none"> <li>• Is the intervention to be offered in line with Peel Public Health’s 10-Year Strategic Plan (i.e., 2009-2019, ‘Staying Ahead of the Curve’)?</li> <li>• Does the intervention conform to existing legislation or regulations (either local or provincial)?</li> <li>• Does the intervention overlap with existing programs or is it symbiotic (i.e., both internally and externally)?</li> <li>• Does the intervention lend itself to cross-departmental/divisional collaboration?</li> <li>• Any organizational barriers/structural issues or approval processes to be addressed?</li> </ul>	<ul style="list-style-type: none"> <li>- it is resource intensive to get to something meaningful; need mental space at the team level</li> <li>- program example: it took 18 months for the breastfeeding team to figure out that in order to influence women’s breastfeeding rates at 2 weeks, they needed to influence breastfeeding at discharge</li> <li>- helpful to have an external facilitator to take the team through the process</li> <li>- need to train people using a tailored, just in time approach (e.g. how to guides, mentoring - group of super users</li> <li>- trying to implement training across the organization</li> </ul>

Factors	Questions	Notes
<b>Applicability (feasibility)</b>		
	<ul style="list-style-type: none"> <li>• Is the organization motivated (learning organization)?               <ul style="list-style-type: none"> <li>◦ <i>Consider organizational capacity/readiness and internal supports for staff learning.</i></li> </ul> </li> </ul>	<p>(e.g. supervisors, managers)</p> <ul style="list-style-type: none"> <li>- agree with the literature on staging and small groups</li> <li>- There is a profound need for mentorship – need mentors to get teams through the process – don't have many mentors at the supervisors or manager level</li> <li>- At the team level: PM needs to be part of the PPE process</li> <li>- Take teams that are currently going through the PPE process and mentor them through the "Evaluation" phases to create a seamless process between PPE and Performance Management (PM fit with the other strategic priorities):</li> <li>- We need a systems approach and conceptual model that places performance management in an existing planning process</li> <li>- we need a model that identifies how all of the strategic priorities fit together</li> <li>- PM infrastructure priority has not been factored into the EIDM model yet; the Public Health Way is foundational</li> <li>- PM should be conceptualized as the synthesizer</li> <li>- the group expressed the need for the strategic leads to meet and come to consensus about a conceptual model of how the strategic priorities fit together</li> </ul>

Factors	Questions	Notes
<b>Transferability (Generalizability)</b>		
Magnitude of health issue in local setting	<ul style="list-style-type: none"> <li>• What is the baseline prevalence of the health issue locally?</li> <li>• What is the difference in prevalence of the health issue (risk status) between study and local settings?               <ul style="list-style-type: none"> <li>◦ <i>Consider the Comprehensive Health Status Report, and related epidemiological reports.</i></li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>☞ baseline: every team/program does its own planning using separate processes</li> <li>☞ PM is already a major initiative across PPH</li> <li>☞ will require intensive change management efforts as teams are not using PPE very much</li> <li>☞ Main target population is supervisors and managers; they will be expected to lead this change</li> </ul>



Factors	Questions	Notes
<b>Transferability (Generalizability)</b>		
Magnitude of the “reach” and cost effectiveness of the intervention above	<ul style="list-style-type: none"> <li>• Will the intervention appropriately reach the priority population(s)? <ul style="list-style-type: none"> <li>○ What will be the coverage of the priority population(s)?</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>☞ Use a pilot test model initially</li> <li>☞ Eventually the reach will be all PPH programs</li> </ul>
Target population characteristics	<ul style="list-style-type: none"> <li>• Are they comparable to the study population?</li> <li>• Will any difference in characteristics (e.g., ethnicity, socio-demographic variables, number of persons affected) impact intervention effectiveness locally? <ul style="list-style-type: none"> <li>○ <i>Consider if there are any important differences between the studies and the population in Peel (i.e., consider demographic, behavioural and other contextual factors).</i></li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>☞ focus of the research was mostly industry rather than public sector organizations – not sure if all areas can be directly applicable</li> <li>☞ no specific public health examples</li> </ul>
<p><b>Proposed Direction (after considering the above factors):</b>  A decision was made by the Steering Committee to use the 14 principles as a framework to further guide implementation activities. The Steering Committee and the Working Group will work jointly to develop knowledge translation strategies and to incorporate the principles into planning steps.</p>		

Form Completed by: Melanie Gillespie on behalf of Aileen Baird

**Worksheet adapted from:** Buffet C., Ciliska D., and Thomas H. National Collaborating Centre for Methods and Tools. November 2007. *Can I Use this Evidence in my Program Decision? - Assessing Applicability and Transferability of Evidence.*