Change towards outcome based performance management

An Expedited Synthesis
Appendix 3: Selected Case Examples

April 2011

By
Raisa Deber, Corrine Davies-Schinkel, Kathleen Gamble, Tim Walker

Funded by the CIHR Expedited Knowledge Synthesis Program, ETP-100086

Principal Investigator: Raisa Deber, PhD
Department of Health Policy, Management and Evaluation
Faculty of Medicine, University of Toronto
Health Sciences Building
155 College Street Suite 425
Toronto, ON M5T 3M6
E-mail: raisa.deber@utoronto.ca

Appendix 3 to the Expedited Synthesis: Change towards outcome based performance management, briefly describes selected case examples by jurisdiction. It is part of a report that synthesizes what we learned about the introduction and use of outcome based performance management systems for public health organizations. Each begins with a brief overview of that jurisdiction, the general model for financing and delivering care, and how public health is delivered. The particular cases are then described. Note that each case example is also classified in terms of the program management ladder we developed. In this appendix, the sources are given by case example. A full alphabetical list of the references reviewed is given in Appendix 4. The findings are also consolidated in Appendix 1, which presents a table where the case examples (and their positions on the ladder) are listed by the 2008 Ontario Public Health Standards with which they are involved. Note that health policy is an evolving field, and that changes frequently occur. Although we have attempted to update cases where possible, it is possible (even likely) that these case examples have continued to evolve, and that the descriptions may no longer represent current practice. Similarly, although we have checked the websites, these too are subject to modification over time.

The team includes Professors Ross Baker, Jan Barnsley, Andrea Baumann, Whitney Berta, Brenda Gamble, Audrey Laporte, Fiona Miller, Tina Smith, and Walter Wodchis. Our decision making partner is Ontario Ministry of Health and Long-Term Care, Public Health Practice Branch. Although the team worked together on this analysis, including discussing preliminary findings and targeting the literature review, it should be noted that the preliminary review of the UK, European, and Saskatchewan case examples was conducted by Corrine Davies-Schinkel, the preliminary review of the Australia, New Zealand and United States case examples was conducted by Kathleen Gamble, and the preliminary review of the BC case examples was conducted by Tim Walker. All examples were then reviewed and edited by Raisa Deber before being circulated to the team.

An Expedited Synthesis: Change towards outcome based performance management
Appendix 3: Selected Case Examples
Table of Contents

A: UK: Overview

The UK health care system serves approximately 60 million residents of the United Kingdom. The OECD estimates that the UK spent 8.7% of GDP on health care in 2008; 82.6% of these expenditures were from public sector sources (Organisation for Economic Co-operation and Development, 2010). Private spending is largely concentrated on prescription drugs, optical and dental services; the bulk of health care services are funded from national taxation dollars (National Health Service, 2009). Although recent reforms have given more autonomy to providers, the system would be classified as a public financing-public delivery model for most services.

The National Health Service (NHS) was created in 1948 "in order to bring together hospitals, physicians, and medically necessary care so that high quality medical service would be available to all citizens regardless of their economic status" (Department of Health, 2010a; National Health Service, 2009). There are four NHS departments (England, Northern Ireland, Scotland and Wales) that are managed separately from one another. NHS England is the largest, covering approximately 51 million people. The national Department of Health oversees NHS activities within England (Department of Health, 2010a). Particularly since 1997, the NHS has been characterized by a series of reforms, with the goal of making the system 'high performing" (Thorlby et al., 2010). Much of this focus has been on the patient experience, rather than population health per se, although the emphasis on improved equity has given some attention to the potential contribution of the determinants of health. The reforms have also sought to decentralize control within a context of improving accountability. Although reforms continue, at the time of writing "Responsibility for commissioning health services at the local level lies with 151 primary care organizations, mainly primary care trusts (PCTs), each covering a geographically defined population" (Boyle 2011).

In contrast, public health is largely at the local level within health authorities; indeed, at the national level, "during the reorganization of public health into community medicine and with the establishment of regional, area and district health authorities in 1974, the position of Medical Officer of Health was abolished" (Robinson & Dixon, 1999). In 1997, the national government appointed a Minister of State with specific responsibility for public health. "The minister has a wide-ranging brief including public health monitoring and strategy; health promotion; notifiable and communicable diseases, including AIDS; family planning; and food safety" (Robinson & Dixon, 1999). Subsequent reorganizations have placed ministerial responsibility for public health at the Parliamentary Undersecretary level. Within the national Department of Health, the Chief Medical Officer now leads on public health, defined in terms of health protection programmes (e.g. immunization, infectious disease surveillance), health improvement programmes (e.g. smoking reduction), and reducing health inequalities. The Department of Health does not itself deliver services; it works with the nine regional public health groups, the NHS, the Health Protection Authority, and the many other organizations (in and out of government). Within the 10 regional Strategic Health Authorities (SHA), "each SHA has a director of public health, who is usually medically qualified and is often also the SHA's medical director (10 in all) with responsibility for ensuring that the NHS delivers on its public health objectives. In addition, the nine regional public health groups mentioned above and led by the corresponding SHA director

of public health are co-located in each regional government office. The NHS is required to work in partnership with other regional and local bodies including the corresponding regional government offices and development agencies. There are other national and regional bodies – whose role is discussed in more detail in later sections – that contribute to the delivery of public health, including the HPA and its regional equivalents, various national screening bodies, the eight regional Public Health Observatories and NICE. At a local level, each PCT is responsible for the delivery of the government's public health objectives, and the lead for this is taken by the PCT's director of public health" (Boyle, 2011).

A recent report by the Audit Commission noted variable performance with respect to public health, and commented that "There has been much policy and accompanying guidance – but probably too much and from too many different sources for people in the field to keep up with" (Audit Commission, 2010). As is clear from the case examples, England is making heavy use of transparency, using performance measurement as one mechanism to spur local action

One advantage for performance management is that the NHS does publish goals, although these are relatively non-specific. The NHS Constitution, which is republished every ten years, outlines the commitments the NHS holds to the public, health professionals and patients (Department of Health, 2010b).

Although the NHS and Department of Health are also committed to providing preventive care and public health services, the NHS concentrates on clinically based services. However, a number of other organizations, most of which work with or are funded by the Department of Health, do have major roles in identifying and collecting data that could be used in a performance measurement system for public health services.

Sources:

Audit Commission. (2010). *Healthy balance: A review of public health performance and spending*. Health briefing, London England, March. Available from: http://www.audit-commission.gov.uk/SiteCollectionDocuments/AuditCommissionReports/NationalStudies/20100311HealthyBalance.pdf

Boyle, S. (2011). *Health Care Systems in Transition: United Kingdom (England).* Copenhagen, Denmark: European Observatory on Health Care Systems. Vol 13, No. 1. Available from: http://www.euro.who.int/__data/assets/pdf_file/0004/135148/e94836.pdf

Department of Health. (2010a). *About the Department of Health.* http://www.dh.gov.uk/en/Aboutus/index.htm

Department of Health. (2010b). *The handbook to the NHS constitution*. National Health Service, London, England, March 8. Available from: http://www.dh.gov.uk/en/Publicationsandstatistics/Publications/PublicationsPolicyAndGuidance/DH_113614

National Health Service. (2009). *About the NHS*. http://www.nhs.uk/NHSEngland/thenhs/about/Pages/overview.aspx

Organisation for Economic Co-operation and Development. (2010). *OECD Health Data 2010: How Does the United Kingdom Compare?* Paris, France: Organisation for Economic Co-operation and Development, July. Available from: http://www.oecd.org/dataoecd/46/4/38980557.pdf

Robinson, R., & Dixon, A. (1999). *Health Care Systems in Transition: United Kingdom*.

Copenhagen, Denmark: European Observatory on Health Care Systems. Available from: http://www.euro.who.int/__data/assets/pdf_file/0011/96419/E68283.pdf

Thorlby, R., Harrison, T., Foot, C., Maybin, J., Appleby, J., Ross, S., & Naylor, C. (2010). *A high-performing NHS? A review of progress 1997-2010*. The King's Fund, London, England, April 11. Available from: http://www.kingsfund.org.uk/publications/a_highperforming_nh.html

A1: Quality and Outcomes Framework: Pay for Performance (P4P system)

The Quality and Outcomes framework, established in 2004, is part of the pay-for-performance (P4P) system used to compensate General Practitioners within the National Health Service (NHS). Participation is voluntary, but 99.7% of eligible physicians have registered to participate in the measurement program.

The Quality and Outcomes Framework contains a set of indicators that physicians score points for based on the quality of care delivered to their patients. The more points the physician earns, the higher the financial incentive. The higher the score, the higher the financial reward for the practice. The final payment is adjusted to take account of surgery workload and the prevalence of chronic conditions in the practice's local area. Although P4P payments have been made since 2004, responsibility for the development of indicators and management of indicator data shifted in 2009 to the arm's length National Institute for Health and Clinical Excellence (NICE). NICE has a mandate to makes recommendations to the NHS on whether to use and pay for new and existing medicines, treatments and procedures, with a focus on their clinical effectiveness and value for money.

An IT system, developed by the NHS, is used to collect the indicator data. All participating physicians upload measurement data into the Quality Management and Analysis System (QMAS). By ensuring the reporting system is identical for all physicians participating in the program; reporting and analytical consistency is achieved across participants and results. The Primary Care Commission (Leech, 2009) provides registered organizations with a management guide that outline the implementation process used for the Quality and Outcomes Framework. Public reporting of the latest QOF points occurs annually through the NHS Information Centre for health and social care (NHS IC); their online database is designed "to allow patients and public easy access to this useful data that indicates how well their surgery [GP practice] is doing." (NHS Information Centre, 2009).

The QOF has undergone several revisions since its introduction in 2004. The 2008/09 QOF contained four main "domains." Each domain has a set of specific indicators, for which GP practices are awarded points, depending on their level of achievement. Two levers are used for compliance. In addition to the "shame and blame" aspects of public reporting, more points represent more money. There are no explicit penalties for poor performance. The 2008/09 domains were:

- Clinical Care Domain: 80 indicators across 19 clinical areas (*e.g.* coronary heart disease, heart failure, hypertension);

- Organisational Domain: 36 indicators across five organisational areas (records and information; information for patients; education and training; practice management and medicines management);
- Patient Experience Domain: 5 indicators (relating to length of consultations, patient surveys);
- Additional Services Domain: 8 indicators across four service areas (including cervical screening, child health surveillance, maternity services, contraceptive services).

A number of these QOF indicators relate to the Ontario Public Health Standards in such areas as Chronic Disease Prevention; Reproductive Health; Child Health; Infectious Disease Prevention; and Vaccine Preventable Diseases, and have been coded as such on the Performance Measurement Ladder. However, these indicators relate to clinical prevention for individual patients rather than to population health. For example, indicators include whether smoking status is recorded for patients with chronic disease, and whether there is a record of whether smoking cessation advice was provided to these patients. Other indicators examine influenza immunization for people with specified diseases (*e.g.*, diabetes, COPD).

Areas of measure that are included in the Ontario Model, but do are not appear to be in the QOF, include: chronic disease- healthy lifestyle initiatives (*e.g.*, healthy eating, moderation in alcohol use, healthy weights); injury prevention, environmental health program standards, emergency preparedness program standards, or many of the infectious disease program standards (TB, STIs, Vaccinations of children etc). Note that this does not mean these activities are not being done, or even recorded; they are just not part of the QOF reporting framework.

The Quality Management and Analysis System is an open system in which data can be uploaded at any time. While the inputs are standardized, there are several patient groups that can be excluded from this data collection, although they are reported on separately through the NHS information centre. These are referred to as 'patient exceptions' and include patients who are recorded as being unsuitable for treatment, newly registered with the practice, newly diagnosed with a condition, and/or "in the event of informed dissent." In theory, such exception reporting offers opportunities to 'game' the performance measurement system, although it is unclear the extent to which this actually occurs.

The Primary Care Commission (Leech, 2009; Thorby, 2010) provides registered organizations with a Management Guide. The guide is a four volume set that outlines the implementation process for the QOF. "Volume 1 is a simple iterative guide to QOF, function and purposes" and is freely available for downloading; so is Volume 4, which "is a performance guide to each individual non-clinical QOF indicator for 2010/11. It highlights best practice and individual indicator assessment tips." However, volumes 2 ("an in depth guide to developing and delivering high class QOF assessment, with a large section on information management, uses, tools and analyses") and 3 ("a guide to each individual QOF indicator, with best practice and individual indicator assessment tips") are available only to subscribers. This reinforces the fact that the QOF is a template that can be (and is) adapted by local bodies.

Average scores achieved by the practices overall and for each domain are published annually in a document produced by the NHS Information Center for Health and Social Care.

Note that there is some modification in indicators over time; for example, the 2008/2009 report noted a decrease in the patient experience domain, but felt it was possibly a result of some changes in the indicators for this domain.

One study (Doran et al., 2006) looked at the clinical indicators measured in the first year of implementation, and found that there were high levels of achievement within clinical indicators in the first year of the use of pay for performance and the QOF. However, there are also some incentives for gaming. Some concerns have been expressed that rewards are given for performance on the measured indicators, but that services not included in this measurement system may be excluded/neglected in the physicians' practice. Also, the tendency to do what is best for the patient may decrease if the physician will receive a financial incentive for measuring things unnecessarily. Some physicians also feel that having to enter items into a computer while they are talking to a patient takes away from the quality of the consultation (Campbell, McDonald, & Lester, 2008).

Peckham and Ham have noted that the QOF has skewed activities towards those areas that are rewarded, and suggested that these may not be those that maximize health outcomes (Peckham & Hann, 2008).

How we classified this case on our Performance Measurement Ladder? (Appendix 1)

OPHS Areas involved: Chronic Disease Prevention; Reproductive Health; Child Health; Infectious Disease Prevention; Vaccine Preventable Diseases

Level:

4I-c The data are available publicly

4II-d The data are used in a management system – attached to money

Sources:

Calvert, M., Shankar, A., McManus, R. J., Lester, H., & Freemantle, N. (2009, May 26). Effect of the quality and outcomes framework on diabetes care in the United Kingdom: retrospective cohort study. *British Medical Journal*, 338(b2768).

Campbell, S. M., McDonald, R., & Lester, H. (2008, May/Jun). The experience of pay for performance in English family practice: A qualitative study. *Annals of Family Medicine*, 6(3):228–234.

Department of Health (Dec 2010). *The NHS Outcomes Framework, 2011/2012*. Available from http://www.dh.gov.uk/prod_consum_dh/groups/dh_digitalassets/@dh/@en/@ps/documents/digitalasset/dh_123138.pdf

Doran, T., Fullwood, C., Gravelle, H., Reeves, D., Kontopantelis, E., Hiroeh, U., & Roland, M. (2006). Pay-for-performance programs in family practices in the United Kingdom. *New England Journal of Medicine*, 355(4):375–384.

Leech, P. (2009). *Quality and Outcomes Framework (QOF) Management Guide: Volume 1* is "a simple iterative guide to QOF, function and purposes." NHS, Primary Care Commissioning, London, England. Available from http://www.pcc.nhs.uk/uploads/QOF/2009/qof_volume_1_updated.pdf

Majeed, A., Lester, H., & Bindman, A. B. (2007, Nov 3). Improving the quality of care with performance indicators. *British Medical Journal*, 335:916–918.

NHS National Institute for Health and Clinical Excellence. About the Quality and Outcomes Framework. London. Website: http://www.nice.org.uk/aboutnice/qof/qof.jsp

National Health Service. (2010). The quality and outcomes framework. Website: http://www.ic.nhs.uk/statistics-and-data-collections/audits-and-performance/the-quality-and-outcomes-framework

NHS Information Centre. Quality and outcomes framework: Online GP practice results database.Website: http://www.qof.ic.nhs.uk/

Peckham, S., & Hann, A. (2008). General practice and public health: Assessing the impact of the new GMS contract. *Critical Public Health*, 18(3):347–356

Thorby, R. F. *Primary Care Management Guide, Volume 4*. NHS, Primary Care Commissioning, London, England. Available from: http://www.pcc.nhs.uk/uploads/QOF/2010/09/qof_vol_4_september_2010.pdf

A2: Compendium of Clinical and Health Indicators

The Compendium of Clinical and Health Indicators is funded by the NHS Information Centre for Health and Social Care. The Compendium has been produced by the National Centre for Health Outcomes Development since 2000 and has undergone three formal reviews to date. The Compendium replaced the Public Health Common Data Set (used prior to 1998). The Compendium contains the original set of public health indicators recommended by the Faculty of Public Health, and has added indicators from several other sources over time. The goal of the Compendium is to make the best use of already existing health information and to coordinate future development of tools to improve the quality and availability of information. They are involved in the following three main groups of activities: design and develop measures of health outcome; produce and compare health outcome indicators using available routine data (reported in the form of the Compendium of Clinical and Health Indicators); and electronically publish statistical and bibliographic information about health outcomes in the Clinical and Health Outcomes Knowledge Base.

The Compendium compiles comparative data for about 300 indicators for about 700 health and local government organizations in England into one publicly available source that health professionals are able to use to compare health trends within the UK. The information can be compared at a local, regional and national level; data are available broken down in a number of ways (including government office region, strategic health authority, primary care organization, local authority and/or hospital level). Information can also be analyzed by age, gender, and health care institution. Some trend data are also provided. Data that may potentially identify an individual have been removed from the Internet version of the Knowledge Base. As of 2005, indicator data are updated as soon as information becomes publicly available, rather than waiting to do this annually. The Compendium is involved in helping any interested parties to make best use of existing information while co-ordinating development of better information and tools for the future. As such, it is an example of performance measurement, which could (although not necessarily is) be used for performance management by those accessing the data.

Many of the indicators are based on clinical outcome measures and often do not include items related to prevention or processes of care. Much of the data comes from other national bodies and/or specialty organizations. Among the sources noted on the Compendium's web site are:

- the Office for National Statistics (ONS) supplies data on mortality data, cancer registrations, life expectancy, births and infant mortality, congenital anomalies, indices of deprivation, and population estimates;

- the Department of Health (DH) either supplies or co-ordinates data extracts of Hospital Episode Statistics (HES) data, which in turn is managed by Northgate Information Solutions.

- The DH also supplies accident morbidity data, and data on health risk factors (from national health surveys), as well as GP registered population estimates, vaccination data, legal abortion data, five year population projections (currently not available), and 2001 Census based data.

- the Health Protection Agency supplies infectious disease notification data.

-the British Association for the Study of Community Dentistry is responsible for the oral health data supplied by the DH, West Midlands Public Health Group;

- the National Down Syndrome Cytogenetic Register (Wolfson Institute of Preventive Medicine) at St. Bartholomew's and the Royal London School of Medicine and Dentistry provides data on Down syndrome diagnoses and outcomes;

- the Department for Environment, Food and Rural Affairs provides data on health risk factors related to fat consumption based on the Expenditure and Food Survey;

- the National Centre for Social Research provides data for the Health Survey for England indicators;

- the Quality and Outcomes Framework is the source of data for primary care indicators which are supplied by the Prescribing Support Unit at the Information Centre for health and social care.

Each new national dataset goes through a development, consultation and evaluation phase prior to decisions being made about analysis of comparative data at a national level (includes reports of 10 working groups on outcome indicators and reports of studies to test the feasibility of the use of existing routine data to produce new indicators)

The data can be analyzed using multiple formats. As noted above, the Atlas component of the website provides maps, based on a number of different ways of dividing jurisdictions: Government Office Regions (boundaries as at April 2009); Strategic Health Authorities (boundaries as at July 2006); ONS Area Classification Groups (map boundaries based on aggregations of Local Authority District boundaries pre-April 2009); Local Authority Districts (boundaries as at April 2009); Primary Care Organisations (boundaries as at October 2006). A Workbench component allows spreadsheets to be downloaded for specific organisations, and/or for specific indicators, broken down by age group and gender (with data suppressed if it would allow the identification of individuals). The website also includes case studies of successful use of indicators, which might provide examples of how healthcare data can be used for performance management. Thus, although the Compendium itself is not explicitly used for performance management, it provides data that could be used by various stakeholders, with the caveat that many of the indicators are based on outcome data. (There is less information on structures, processes, or outputs.)

Examples of the indictors used include the following:

For Infectious Disease: Incidence of meningococcal meningitis; Mortality from infectious and parasitic disease; Years of life lost due to mortality from infectious and parasitic disease;

Incidence, mortality from, and years of life lost due to mortality from tuberculosis; Vaccination rates for children for measles, mumps, and rubella, and for whooping cough.

For Chronic Disease, Infant and Child Health, and Oral Health, indicators include: Mortality; Life expectancy; Births; Infant Mortality; Years of life lost; Cancer incidence, survival, and deaths at home; Cancer screening programmes; Hospital Episode Statistics (HES) based indicators; Congenital malformations; Oral health in children; Abortions; Indices of Deprivation 2004; smoking and drinking indicators (from the General Household Survey); fat consumption indicators (from the Expenditure and Food Survey), etc.

How we classified this case on our Performance Measurement Ladder? (Appendix 1)
OPHS Areas involved: Chronic Disease Prevention; Child Health; Infectious Disease Prevention; Tuberculosis Prevention
Level:
4I-c The data are available publicly
4II-g Used as a management tool to compare and pull out poor or good performers through the public availability of the data, hoping organization would improve its performance when it compares itself against other jurisdictions
Sources:
NHS Information Centre, Clinical and Health Outcomes Data Base. *Website:*
http://www.nchod.nhs.uk/

A3: Association of Public Health Observatories Health Profiles

The Association of Public Health Observatories produces a series of Health Profiles at the local authority level. The project is funded by the Department of Health. The profiles are "designed to help local government and health services identify problems in their areas and decide how to tackle them. They provide a snapshot of the overall health of the local population, and a highlight of potential problems by national and regional comparisons."

The website describes the contents as follows: "Each Health Profile document includes: an 'At a glance' summary description of people's health in the area; Maps and charts that show how the health in the area compares to the national and local view; Trended changes in death rates over ten years period of time; and a 'spine chart' health summary showing the difference in health between the area and the average for England/Region/SHA for 32 indicators." The web site also includes interactive maps. The full profiles are updated yearly, although data for indicators may be updated more regularly if available. The target audiences are Local Councillors, Directors of Public Health, and Local Authority Officers, within each health authority. The intention is that these local officials will use the profiles to help them identify priorities and improve system performance. The Association's website now indicates that it is "a network of 12 public health observatories (PHOs) working across the five nations of England, Scotland, Wales, Northern Ireland and the Republic of Ireland."

The health profiles used the following 32 national indicators, divided into 5 categories:
Our communities

1. Deprivation

2. Children in poverty
3. Statutory homelessness
4. GCSE achieved (General Certificate of Secondary Education results, with emphasis on English and Maths)
5. Violent Crime
6. Carbon emissions

Children's and young people's health

7. Smoking in pregnancy
8. Breast feeding initiation
9. Physically active children
10. Obese children
11. Children's tooth decay (at age 5)
12. Teenage pregnancy (under 18)

Adults' health and lifestyle

13. Adults who smoke
14. Binge drinking adults
15. Healthy eating adults
16. Physically active adults
17. Obese adults

Disease and poor health

18. Over 65s 'not in good health'
19. Incapacity benefits for mental illness
20. Hospital stays for alcohol related harm
21. Drug misuse
22. People diagnosed with diabetes
23. New cases of tuberculosis
24. Hip fracture in over-65s

Life expectancy and causes of death

25. Excess winter deaths
26. Life expectancy – male
27. Life expectancy – female
28. Infant deaths
29. Deaths from smoking
30. Early deaths: heart disease and stroke
31. Early deaths: cancer
32. Road injuries and deaths

Indicators are taken from a variety of different sources; the web site notes that they are included in the Health Profile if they meet the following criteria:

- "It has an important effect on the health of the local population
- It can support local government and NHS management processes
- It is valid in that it measures what it tries to measure
- It is primarily based on existing indicators consistently available nationally
- It is primarily available at Local Authority level
- It allows meaningful comparisons to be made between places

• It can be communicated easily to a wide audience." (Association of Public Health Observatories 2010b)

The Health Profile system is fully implemented and data are available on the APHO website. Indicators are reviewed consistently and indicators may be added or changed on an annual basis if new data has become available or a gap in the Profile is identified. Nationally reported data are used in data collection for each indicator. There is some speculation that certain indicators are underreported because of the way the data are collected (some indicator data has exclusion criteria or certain populations that are not included in the data point). Many of the indicators are outcome indicators; not very many process indicators are included in the Health Profiles. The sources are given in the document "*The Indicator Guide: Health Profiles 2010*" which also provides details of how each indicator is created. The report provides national level data analysis, regional data, and some international comparisons. Note that one source they use is the Compendium of Clinical and Health Indicators (Case A2) Data also comes from Communities and Local Government Indices of Deprivation, National Statistics Online, and Neighbourhood Statistics.

How we classified this case on our Performance Measurement Ladder? (Appendix 1)

OPHS Areas involved: Chronic Disease Prevention (including healthy eating, physical activity, and tobacco control); Injury and Substance Misuse Prevention (including motor vehicle accident deaths); Child Health; Tuberculosis Prevention.

Level

4I-c The data are available publicly

4II-f Used within the independent organization to promote better practices or quality improvements

4II-g Used as a management tool to compare and pull out poor or good performers through the public availability of the data, hoping organization would improve its performance when it compares itself against other jurisdictions

Sources:

Association of Public Health Observatories. (2010a). *(APHO) Health Profiles*. Available from: http://www.apho.org.uk/default.aspx?RID=49802

Association of Public Health Observatories (2010b) *The Indicator Guide: Health Profiles 2010*. Available from: http://www.apho.org.uk/resource/view.aspx?RID=50204

The Association of Public Health Observatories. Website: http://www.apho.org.uk/

Communities and Local Government Indices of Deprivation. Website: http://www.imd.communities.gov.uk

UK National Statistics Online. Website: http://www.statistics.gov.uk/hub/index.html

Office for National Statistics, Neighbourhood Statistics . Website: http://neighbourhood.statistics.gov.uk/

A4: Office for Standards in Education, Children's Services and Skills (Ofsted)

Ofsted is a non-ministerial government department, in operation since April 2007, with the responsibility to inspect and regulate the quality of education, children's services and skills in England (similar bodies exist for Northern Ireland, Scotland, and Wales). The inspectors are order-in-council appointments.

Their web site notes that Ofsted inspects or regulates the following services in England: childminders; childcare on domestic premises; childcare on non-domestic premises; adoption and fostering agencies; residential schools, family centres and homes for children; all state maintained schools; some independent schools; pupil referral units; the Children and Family Courts Advisory Service (Cafcass); the quality of services and outcomes for children and young people in each local authority; further education; Initial Teacher Training; publicly funded adult skills and employment based training; and learning in prisons, the secure estate and probation."

These services are delivered by a host of organizations, both public and private (*e.g.*, both public and private schools, as well as day care and child protection services). Many, but not all, are publicly funded.

Much of the focus is on education, but there are some broader public health elements. For example, it includes among its goals:

- Increase public awareness of the prevention of injury and substance misuse
- Falls across the lifespan (children- prevention measures in childcare facilities)
- Promote the adoption of behaviours that are related to the prevention of injury and substance misuse
- Collaborate and engage community partners
- Child health- create or enhance healthy environments
- Growth and development
  Recent reports also focus on healthy eating.

Inspections are completed on a regular basis, with more attention given to high risk facilities (an example of a high risk facility may be a facility for which a complaint has been received). Facilities that are to be inspected are given a minimum of no notice to a maximum 20 working day notice for the upcoming inspection. Audit is mandatory for registered centres. Hundreds of inspections take place daily, with the results being made publicly available on the Ofsted web site. Ofsted also publishes a series of reports, with the goal of using these to drive quality improvement. However, it also has a (limited) ability to regulate or even close some programs. No clear schedule for inspections is given through the Ofsted website. The inspection reports use a Common Evaluation Framework with the following domains and dimensions:

Overall Effectiveness

- Capacity to improve
- Recommendations (and required actions)
- Meeting the needs of service users

Leadership and management

- Ambition and prioritisation
- Value for money
- Equality and diversity
- Safeguarding
- Evaluation
- Partnerships
- User engagement

Quality of provision

- Teaching and the impact on learning
- Curriculum/responsiveness
- Assessment
- Care, guidance and support

Outcomes for children, young people and adults

- Be healthy
- Stay safe
- Enjoy and achieve
- Make a positive contribution
- Achieve economic well-being

A self-evaluation tool is used by providers and providers are encouraged to keep their self-evaluation up to date. The self-evaluation evidence may be used as part of an inspection. The metrics attempt to ensure that judgments resulting from the inspections are "clear and transparent, based on clear and substantiated evidence." An additional consideration is that they must be able to "withstand independent scrutiny or legal challenge." The tool notes that success is measured on the following four point system:

"Grade 4: Outstanding (A service that delivers well above minimum requirements for users)
Grade 3: Good (A service that consistently delivers above minimum requirements for users)
Grade 2: Adequate (A service that delivers only minimum requirements for users)
Grade 1: Inadequate (A service that does not deliver minimum requirements for users)."

The reports give an overall sense that performance has improved. However, there was at least one example where poor performance (in child services) was not picked up; this was attributed to over-reliance on provider self-reports. After a child died in care, some changes were made to policies and procedures. According to the Ofsted website, this program of inspection and improvement has resulted in improved practice. For example, for childcare, the Chief Inspector noted: "I am pleased to say that overall providers are doing well and they are getting better. I am particularly impressed with the level of improvement in meeting the national standards. In 2005 we reported that less than 80% of registered early years and childcare settings met the national standards. Now almost all do. In the previous inspection cycle from 2003 to 2005 we had to set actions for 22% of providers to meet the national standards. That figure is now just 3%. This improvement following inspection represents a determination by providers to do better for the children they serve, often supported by local authorities and professional associations." (Ofsted, 2008)

Note that Ofsted uses regulatory instruments. It has the ability to place a school into "special measures" if it is judged as 'inadequate' in one or more areas and if the inspectors have

decided it does not have the capacity to improve without additional help. This involves providing additional resources, intensive support from local authorities, additional funding and resourcing, and frequent reappraisal from Ofsted until the school is no longer deemed to be failing. The 'stick' is that senior managers and teaching staff can be dismissed and the governing body be replaced by an appointed Interim Executive Board (IEB). Schools which are failing but where inspectors consider there is capacity to improve are given a Notice to Improve. It also has some powers under the Childcare Act 2006, which it can use on a case by case basis, but could involve child services and/or take away a provider's registration. Its stated policy is to "only use our statutory powers when a relevant threshold is met," but to act when risk of harm seems sufficiently high (Ofsted, 2010).

It also uses public information as a management tool. All inspection reports are published publicly on the Ofsted website. Consumers are able to access the information and make an informed decision about whether or not to use a particular facility. A poor grade could hurt business. There is an expectation that information will be used for performance management and improvement; Ofsted accordingly provides recommendations for further improvement to the facilities after an inspection takes place, but leaves it up to the facility to decide how they chose to implement the recommendations.

Not all of the domains and indicators used within the Ofsted reporting system relate specifically to the public health standards outlined in the Ontario Standards for Public Health document; however there are several categories that overlap and provide an example of how to measure the area of childcare.

How we classified this case on our Performance Measurement Ladder? (Appendix 1)

OPHS Areas involved: Injury and Substance Misuse Prevention; Child Health

Level

4I-c The data are available publicly

4II-e Regulatory approach (the data are used by regulators, *e.g.*, closing a restaurant or pool)

4II-g Used as a management tool to compare and pull out poor or good performers through the public availability of the data, hoping organization would improve its performance when it compares itself against other jurisdictions

Sources:

Ofsted (2010). *Investigating and enforcing compliance: Our powers and principles of investigation.* Available from http://www.ofsted.gov.uk/publications/080206

Ofsted (2008). *Leading to excellence*. Available from: http://www.ofsted.gov.uk/Ofsted-home/Leading-to-excellence

Ofsted. Website: http://www.ofsted.gov.uk/

A5: Child and Maternal Health Observatory (ChiMat)

ChiMat is a government funded organization that is part of the Yorkshire and Humber Public Health Observatory. ChiMat was established in October, 2007 as a pilot project and was officially launched as a national health observatory in October, 2008. The ChiMat measurement system is comprised of a group of indicators that focuses specifically on child health and maternal health services. The information collected within this measurement system is reported by geographical region and is available publicly on their website. The data are intended for a variety of stakeholders so that local, regional or national comparisons can be made and quality improvement decisions will be informed by the 'up-to-date' information provided. ChiMat is supported by the Information Center for Health and Social Care, the Care Quality Commission and the Centre for Excellence and Outcome in Children and Young Peoples Services.

The goals of the ChiMat measurement system are to provide data and information on child and maternal health to a wide variety of stakeholders. With the production of this data, it is the hope that the evidence provided will support decision-making, the commissioning of services, and future research. ChiMat aims to continually develop new indicators to support national child and maternal health objectives, provide training on the use of their on-line tools, produce analytical reports and support or undertake future research. Data is currently available through their website for child and maternal health indicators in the UK.

The indicators used in the ChiMat measurement system are taken from a number of data sources including the Office for National Statistics, the NHS Information Centre for Health and Social Care, the Department for Children, Schools and Families, Hospital Episode Statistics, and the Department of Health. Since the indicator data are derived from national surveys, each indicator is updated when the survey or statistics data are made publicly available. By using national level data, it is unlikely that the indicators or the data are gameable by any region or through the ChiMat measurement system. Not all of the ChiMat indicators relate specifically to the public health standards outlined in the Ontario Standards for Public Health document. Some of the key indicators that may overlap with the Ontario Standards include: breastfeeding initiation, obesity in children, tooth decay, hospital admissions due to alcohol specific conditions, hospital stays for drug misuse, immunisations, and physically active school children.

How we classified this case on our Performance Measurement Ladder? (Appendix 1)
OPHS Areas involved: Child Health
Level
4I-c The data are available publicly
4II-f Used within the independent organization to promote better practices or quality improvements
4II-g Used as a management tool to compare and pull out poor or good performers through the public availability of the data, hoping organization would improve its performance when it compares itself against other jurisdictions
Sources:
ChiMat Child and Maternal Health Observatory. Website: http://www.chimat.org.uk/

A6: Health Protection Agency (HPA): Disease Surveillance

The Health Protection Agency (HPA) was established in 2003. It is responsible for protecting the public from threats to their health caused by infectious diseases and environmental hazards. To accomplish this, it provides advice and information to the public, health care professionals, and local and national level government, and is actively involved in surveillance (that is, continual monitoring of the frequency and distribution of communicable disease, as well as the sources and risk factors). It works closely with over 50 stakeholder groups inside and outside of government, both nationally and internationally.

It describes its role as follows: "The Agency combines public health and scientific knowledge, research and emergency planning within one organisation – and works at international, national, regional and local levels. It also supports and advises other organisations that play a part in protecting health.

The Agency's advice, information and services are underpinned by evidence-based research. It also uses its research to develop new vaccines and treatments that directly help patients. Although set up by government, the Agency is independent and provides whatever advice and information is necessary to protect people's health. The Agency exists to help protect the health of everyone in the UK; our ambition is to lead the way by identifying, preparing for and responding to health threats." (Health Protection Agency, 2010). The Agency has no statutory role for implementing corrective action; it provides expert advice to stakeholders with those responsibilities (including physicians, public health departments, hospitals, and the Department of Health).

The indicators for which data are collected are based on anonymous reports of clinical infection submitted by physicians and laboratories to the Centre for Infection. Sources of information include hospital episodes, international surveillance, vaccine coverage, primary care diagnosis, surveys and studies. Many of the indicator measures are calculated by reporting the incidence in a given month. The frequency and distributions of the diseases are then analysed and are published in various reports. At the time of writing, the HPA published a wide variety of reports, including the weekly *Health Protection Report* (which provides updates on routine surveillance data).

The UK government has announced its intention of abolishing the HPA as an independent body and transferring its functions to the Secretary of State for Health, in line with their intention to create a national Public Health Service for England. The model to be used is still under development.

How we classified this case on our Performance Measurement Ladder? (Appendix 1)
OPHS Areas involved: Infectious Disease Prevention; Rabies Prevention; Sexual Health, STIs, and Blood-borne Infection Prevention; Tuberculosis Prevention; Vaccine Preventable Diseases; Health Hazard Prevention; Public Health Emergency Preparedness.
Level
4I-c The data are available publicly
4II-e Regulatory approach (the data are used by regulators, *e.g.*, closing a restaurant or pool)

4II-f Used within the independent organization to promote better practices or quality improvements

Sources:

Health Protection Agency. (2010). *About the HPA*. Available from Website: http://www.hpa.org.uk/AboutTheHPA/

Health Protection Report available from: http://www.hpa.org.uk/Publications/HealthProtection/

A7: Sexual Health Balanced Scorecard

The Sexual Health Balanced Scorecard is an online tool designed to enable health professionals to compare the state of sexual health at the regional and national level. The scorecard provides a "snapshot" of the quality of sexual health services, based on best practices, for each primary care trust across England. It is run by the South West Public Health Observatory, and launched in March 2010. The information is available publicly on the Sexual Health Balanced Scorecard website. The aim of the project is to provide decision makers with an updated source of information on sexual health that can be used in public health, health commissioning and performance management activities. Through a comparative process, it is the hope that regions with poorer performance will improve their services after viewing the available data.

Indicators are divided into 8 categories: teenage conception, abortions, contraception, sexually transmitted infections and HIV; awareness, attitudes and risk behaviours; schools, colleges and connexion services; sexual assaults, and other related factors. Indicator data are compiled from already available data collected from a wide variety of sources. Indicator data are updated quarterly or annually depending on the frequency with which source data updates occur. Indicators within the scorecard are reviewed and updated on an ongoing basis and archived data for indicators is available for trend analysis. Many of the indicators used within the Scorecard are derived from primary care measures that are mandatory for physicians and services to report on. The majority of the indicators within the Sexual Health Balanced Scorecard are outcome measures.

The website notes that the indicators are updated on an ongoing basis, at least annually or quarterly depending on the frequency of source data updates and agreement with the Department of Health. Archived data will also be included so trends can be analyzed. The indicators were developed by the South West Public Health Observatory as commissioned by the Department of Health. The South West Public Health Observatory worked collaboratively with the Health Protection Agency, East Midlands Public Health Observatory and the Teenage Pregnancy Unit. The rationale for many of the indicators was drawn from that reviewed the national strategy for sexual health and HIV. Each indicator has a separate development process outlined on the website.

The source of the data for some of the indicators (for example: annual surveys) makes these indicators less useful for performance management (since they cannot be updated continuously). Comparing trends is also complicated because of inconsistencies and changes in the survey tools (*e.g.*, changes in how questions are worded).

How we classified this case on our Performance Measurement Ladder? (Appendix 1)
OPHS Areas involved: Sexual Health, STIs and Blood-borne Infection Prevention.
Level
4I-c The data are available publicly
4II-f Used within the independent organization to promote better practices or quality improvements
Sources:
Christophers, H, Mann, S., and Lowbury, R. (2008). *Progress and priorities - working together for high quality sexual health: Review of the National Strategy for Sexual Health and HIV*. London: Medical Foundation for AIDS & Sexual Health (MedFASH). Available from http://www.medfash.org.uk/publications/current.html
South West Public Health Observatory. Sexual health balanced scorecard. Website: http://www.apho.org.uk/sexualhealthbalancedscorecard

A8: Food Standards Agency

The Food Standards Agency (FSA) is an independent Government department, established in 2001, through an Act of Parliament. The FSA has a mandate concerned with all aspects of food safety (from food production to food distribution). A Framework Agreement, which became fully operational in 2001, was developed to outline the minimum requirements that must be met in food law enforcement including food hygiene, food standards, and imported food law enforcements. Local inspection agencies (authorities) are responsible for conducting inspections, but the Framework also outlines the requirements that must be met by each local authority in relation to food sampling, inspections, formal enforcements, promotion, inspections, and business advice. The local agencies report to the FSA, and the FSA audits and monitors them. Their mandate contains elements from across the food chain, including: inspection of the meat and dairy industries, egg marketing inspection, wine standards, surveillance of residues on food, and horticultural surveillance (community marketing and distribution). Restaurants are able to participate in a voluntary "score-on-the-door" program that allows consumers to view how well a business complies with food regulation and hygiene.

Their website section on audit and monitoring (questions) describes the process used to coordinate with local authorities to reach the agreement as follows: "The Framework Agreement, which became fully operational from 1 April 2001, was developed through the Agency's Local Authority Enforcement Liaison Group (now the Enforcement Liaison Group). The detailed content of the Agreement was drafted in conjunction with the Local Authorities Coordinators of Regulatory Services (LACORS) and a number of representatives from local authorities across the UK. The draft Agreement was subject to a three month public consultation when the views of all local authorities and other key stakeholder organisations were sought." It notes that restaurant hygiene inspection is assessed at the European Union Level.

Their web site further notes that "Although the FSA is a Government agency, it works at "arm's length" from Government because it doesn't report to a specific minister and is free to publish any advice it issues."

The local agencies make heavy use of regulation as a policy instrument. FSA assists them through provision of information. For example, the UK Food Surveillance System is a national database that holds a record of all food samples submitted for food analysis by official control labs. On-site visits are also conducted as part of the auditing function. It is unclear how often these visits occur, but the food industry must be ready for an audit at anytime (if a full audit is to be conducted, the local authority is given about three months notice).

Since the food industry is so large it may be difficult to consistently measure indicators outside of an auditing framework. There is a section on the FSA website that outlines good practices found during an audit, including details about: the specific indicator performed well, the area that performed it well, and contact information for that area. Failures result in food or feed recalls and withdrawals from the market. For restaurant inspection- local authorities run a "score-on-the-doors" program so the consumer can see how well the business complies with food regulation and hygiene. "The primary purpose of these Scores on the Doors schemes is to allow consumers to make informed choices about the places in which they eat out and from which they purchase food, and, through this, to encourage businesses to improve hygiene standards."

The Food Standards Agency aims to improve the health and safety of food consumers through inspection. They suggest that their change management strategies are closely linked to performance measurement indicators the Food Standards Agency has outlined they plan to put into place. They are continuing to develop indicators; the most recent strategy document (intended to cover the years until 2015) was posted in March 2011.

How we classified this case on our Performance Measurement Ladder? (Appendix 1)
OPHS Areas involved: Food Safety
Level
4I-c The data are available publicly
4II-e Regulatory approach (the data are used by regulators, *e.g.*, closing a restaurant or pool)
Sources:
Food Standards Agency. Website http://www.food.gov.uk/
Food Standards Agency- Audit and monitoring. Website:
http://www.food.gov.uk/enforcement/auditandmonitoring/ . See also
http://www.food.gov.uk/enforcement/auditandmonitoring/auditscheme/audit_questions/
http://www.food.gov.uk/aboutus/publications/busreps/strategicplan/
For change management strategies, see:
http://www.food.gov.uk/strategy

A9: Drinking Water Inspectorate (DWI)

The Drinking Water Inspectorate (DWI) was established in 1990 and is responsible for assuring the safety of the drinking water supply in England and Wales. In order to achieve this, the DWI independently assesses tap water tests performed by water companies as well as audit the laboratory facilities of these companies. An annual report on the quality of drinking water at a national level is published by the DWI. This report includes information on the quality of drinking water, public confidence in drinking water, results of water companies sampling programmes and a list of cautions and prosecutions conducted by the DWI. The annual reports are available publicly through the DWI website.

The DWI indicators primarily focus on the quality of water reported on through laboratory testing (presence of E. *coli*, turbidity of water, chemical quality, etc.). Drinking water quality is reported for each region in an annual report available on the DWI website. These reports also include the public reporting of drinking water quality events that occurred throughout the year. The report includes information on who was tested, what was tested, how many tests were performed, the results of the tests (range), and how many tests did not meet quality standards.

How we classified this case on our Performance Measurement Ladder? (Appendix 1)
OPHS Areas involved: Water Safety
Level
4I-b The data are moving up through the levels of the organization or government
4II-e Regulatory approach (the data are used by regulators, *e.g.*, closing a restaurant or pool)
4II-f Used within the independent organization to promote better practices or quality improvements
Sources:
Drinking Water Inspectorate. Website.http://www.dwi.gov.uk/.

B: Australia: Overview

The OECD estimates that the Australia spent 8.5% of GDP on health care in 2007; 67.5% of expenditures were from public sector sources (OECD 2010).

Like Canada, Australia is a federal state. Unlike Canada, there is more overlap in the distribution of responsibilities for health care between the national (federal), state and local levels of government (Healy et al 2006). For example, Australia's federal government has a broad policy leadership and financing role in health matters, while the state/territory governments are largely responsible for the delivery of public sector health services and the regulation of health workers in the public and private sectors. Hospitals are the responsibility of the states, but the federal government is responsible for paying physicians and managing primary health care; it also has a major financing role. Additionally, constitutional responsibilities in this area rest largely with the states and territories. Local government is also an important contributor at the service level, having a central role in public health surveillance and action. The resources available to all levels of government in achieving public health objectives are considerable and include universities, non-government and community organizations, and the workforce, programs and institutions of the primary health care system

Role of the Federal Government

Some public health activities are carried out through multi-disciplinary teams, often with high specialized expertise, using the range of regulatory powers available to the national government in cooperation with national level agencies. One key body involved is the Public Health Division of the Federal Department of Health and Family Services. Regulatory functions are provided by a variety of organizations including the Australia, New Zealand Food Authority (ANZFA), the Therapeutic Goods Administration (TGA), and other associated TGA agencies (*e.g.* the Environmental Health and Safety Unit, the Australian Radiation Laboratory and the Nuclear Safety Bureau).

In all cases, the federal government performs its activities in collaboration with state, territory, and local governments, and non-government, professional, and community organizations. The federal government's public health efforts include the following core functions; facilitating the development of national public health policy; facilitating the ongoing planning, monitoring, reporting, research, training and evaluation of public health activities; facilitating the development of national consistency in policy standards, legislation and regulation, workforce competencies, environmental protection, disease prevention and outbreak control methods; fostering and initially financing innovation in population health programs; conducting national programs in public health; advocating, building and strengthening a population health constituency with key players and with the public; and conducting, in consultation with other partners, Australia's international responsibilities and obligations in public health.

Internationally, Australia actively participates in the work of the World Health Organization (WHO) under international treaty obligations. Moreover, there is continued

strategic support for international health industry networks through overseas health projects where AusAID, the Australian Government agency for the administration of Australia's international aid, is the primary contributor. Australia is a party to international agreements on a variety of issues including research cooperation, international drug treaties, radiation, and health care.

The Role of State, Territory, and Local Governments

In terms of how care is delivered, Australia resembled the UK, in that there was traditionally a larger role for public delivery, particularly for hospitals. However, the private sector is playing an increasing role (Healy et al 2006).

Most core functions of public health have traditionally been the responsibility of the States and Territories. Under the various Health Acts (which usually cover environmental health, communicable diseases, food safety and tobacco controls), states and territories pursue the following public health objectives; identify public health issues state wide through epidemiological surveillance; allow for timely intervention and monitoring of health outcomes; develop policy related to communicable disease, environmental health, immunization, food, radiation safety, workplace risk, water quality, drugs and poisons, and emergency management; organize preventive and early detection programs such as cancer screening, school health etc; support population health literacy and health promoting behavior; develop strategies for new and emerging health problems; and give government the power to act quickly in public health emergencies. Additionally, within states and territories, there are a large number of local government bodies that perform public health service functions in a variety of ways with different emphasis from state to state, as determined in the respective Health Acts and Local Government Acts. Local government mainly interacts with public health activities involving environmental management, economic development, public safety, maintenance of roads, cultural and recreation development, land use planning and provision of community services. Thus, although the states have primary responsibility for much of the delivery of public health, local governments tend to monitor sanitation and hygiene, food safety, and water quality.

Government web sites suggest that the following represents some of the recent key achievements of the public health sector in Australia:

- Increasing community awareness and behaviour change in relation to risk factors for tobacco related and skin cancers
- Reduction of the transmission of communicable diseases, specifically HIV/AIDS
- Early detection of breast and cervical cancers
- Reduction in the rates of mortality of motor vehicle crashes
- Providing communities with access to public health information including the development of innovative techniques in social marketing of public health policy
- Focus on evidence based practices
- Developing communicable disease control (vaccine preventable diseases and food-borne diseases)
- Antivenom research
- Improved approach to the use of data by the application of epidemiological principles to statistical analysis (*e.g.* injury surveillance)

In addition to several national cases, Cases B9, B10, and B11examine how different states and territories strategize, develop and implement various public health standards (which are informed greatly by the national frameworks).

Sources:

Healy, J., Sharman, E., & Lokuge, B. (2006). *Health systems in transition: Australia: Health system review*. Vol. 8 No. 5, Copenhagen, Denmark: WHO Regional Office for Europe on behalf of the European Observatory on Health Systems and Policies. Available from http://www.euro.who.int/__data/assets/pdf_file/0007/96433/E89731.pdf

Organisation for Economic Co-operation and Development. (2010). *OECD Health Data 2010: How Does Australia Compare?* Paris, France: Organisation for Economic Co-operation and Development, July. Available from: http://www.oecd.org/dataoecd/46/38/38979536.pdf

Australian Government, Department of Health and Aging. Website: http://www.health.gov.au/

Australian Government, Department of Foreign Affairs and Trade. *Health Care in Australia*. Website: http://www.dfat.gov.au/facts/healthcare.html

B1: National Public Health Partnership

The National Public Health Partnership provided a formal structure for the Australian Government and States and Territory Governments to come together and develop a joint Australian intergovernmental agenda for public health. It was to have operated under a Memorandum of Understanding, signed by all Australian Health Ministers, from 2003 to 2007. The NPHP was responsible for identifying and developing strategic and integrated response to public health priorities in Australia—including issues of healthy weight, communicable disease control, environmental health, injury prevention, child public health, information development and workforce development and planning. The objectives of the NPHP were to: a) identify and develop strategic and integrated responses to public health priorities to guide and support governments and service provides; b) to establish two-way exchange with key stakeholders on the development of national public health priorities and strategies; c) develop better coordination and increased sustainability of public health strategies; and d) strengthen public health infrastructure and capacity nationally.

Essentially, the objective of the NPHP was to enhance public health practice in Australia through projects that developed tools for good public health practice. For example, the Schema for Evaluating Evidence on Public Health Interventions was developed to assist researchers, practitioners, and policy makers to evaluate published research about public health interventions. It was intended to assist the systematic appraisal of the strengths, limitations and gaps in published research as evidence. It was developed over a three year period, with the final version being published in June 2002. The Schema covers two stages of evidence appraisal. The first is the appraisal of individual papers or reports to determine whether they provide credible and useful information about an intervention(s). The second is the formulation of conclusions about the value of the available evidence, enabling the preparation of a summary statement on what is known, and what is not known, about a type of public health intervention(s).

Another example of NPHP's efforts to develop tools to evaluate public health in Australia is its Public Health Core Functions Statement, a consensus statement on the essential functions of public health. Its findings were based on a national Delphi Study, which surveyed a cross-section of public health practitioners, policy makers and researchers on what they saw as the important functions of public health. The purpose of the Core Functions Statement was to assist with public health planning and practice improvement. It outlined ten main functions including assessing, analyzing and communicating population health needs and community expectations; preventing and control communicable diseases and injuries through risk factor reduction, education, screening and immunization; promoting and supporting healthy lifestyles; and planning, funding, managing, and evaluating health gain and capacity building programmes.

Note that as of 30 June 2006 the NPHP was replaced with the Australian Health Protection Committee (AHPC) and the Australian Population Health Development Principal Committee (APHDPC), two Principal Committees of the Australian Government Department of Health and Ageing (AHMAC). They do not appear to have a website or to be reporting their activities, with the exception of brief mentions on the Australian Health Ministers Advisory Committees website.

How we classified this on our Performance Measurement Ladder? (Appendix 1)
OPHS Areas involved: Chronic Disease Prevention; Injury and Substance Misuse Prevention; Child Health; Infectious Disease Prevention; Public Health Emergency Preparedness
Level:
Level 3. Goals and indicators defined, and data are being collected, but no indication that the data are being used for management. (In this category, it is often unclear how widely disseminated the data are, whether data collection has been standardized, and whether a common performance measurement system is being used.)
Sources:
Australian Health Ministers Advisory Committees. Website:
http://www.ahmac.gov.au/site/membership.aspx - other
National Health Partnerships Home. Website (no longer being maintained):
http://www.nphp.gov.au/index.htm

B2: National Injury Prevention and Safety Promotion Plan

The National Injury Prevention and Safety Promotion Plan establishes a framework for the injury prevention and safety promotion activities of government agencies, local governments, the private sector, nongovernmental organizations, communities and individuals. The Plan has been developed to guide research and the development of programs and policies that will help prevent injuries. This Plan is an initiative of the Strategic Injury Prevention Partnership (SIPP). SIPP comprises injury prevention representatives from the health departments in all Australian states and territories. The Plan works with a number of other national strategies, plans and inititatives dealing with specific injury areas. These include, for example, the National Alcohol Strategy, National Road Safety Strategy, the National Water Safety Plan and Child Injury Prevention: A Kidsafe National Strategy. Because injury occurs in many settings, and

organizations, plans for safety promotion and injury prevention have been developed for many sectors, including road safety, occupational safety and product safety.

The key priorities of this Plan are identified as the following: appoint and support an appropriate group to monitor and review the National Injury Prevention and Safety Promotion Plan: 2004-2014; define the injury problems for health and partners; identify, engage, and collaborate with key groups (government, industry, community) involved in the prevention of injury in Australia; provide quality data and its analyses; advocate for greater attention to and greater resourcing of injury prevention and safety promotion; create a cultural acceptance within and beyond the health sector that injuries are preventable; raise the capacity of the injury prevention and safety promotion workforce and other sectors to prevent injuries; engage designers, manufacturers, retailers and consumers to increase their awareness of the role of safe design in injury prevention and safety promotion; provide culturally acceptable injury prevention and safety promotion information and initiatives; establish a communication strategy about the National Injury Prevention and Safety Promotion Plan: 2004-2014, its development and review; establish an accessible collection of research and evaluated programs, resources, and policies that can help further planning in injury prevention and safety promotion; and develop and maintain a whole of government focus which supports a range of sustainable safety promotion and injury prevention programs and projects.

How we classified this on our Performance Measurement Ladder? (Appendix 1)
OPHS Areas involved: Injury and Substance Misuse Prevention.
Level:
Level 3. Goals and indicators defined, and data are being collected, but no indication that the data are being used for management. (In this category, it is often unclear how widely disseminated the data are, whether data collection has been standardized, and whether a common performance measurement system is being used.)
Sources:
National Public Health Partnership (NPHP). 2005. *The National Injury Prevention and Safety Promotion Plan: 2004-2014*. Canberra: NPHP. Available from: http://www.nphp.gov.au/publications/sipp/nipspp.pdf
Australian Government Department of Health and Aging – Injury prevention in Australia. Website: http://www.health.gov.au/internet/main/publishing.nsf/Content/health-pubhlth-strateg-injury-index.htm

B3: Health Emergency Preparedness and Response

Australia provides a nationally coordinated approach to health disaster management through the Australian Health Protection Committee (AHPC). AHPC was established in 2003 and was previously known as the Australian Health Disaster Management Policy Committee (AHDMPC). The roles of the AHPC are to provide advice to AHMAC on Australia's preparedness for health emergencies and approaches to address any deficits and to coordinate the national health response to significant incidents. The AHPC also oversees the National Incident Room, which was established to ensure a nationally consistent and coordinated response to a national health emergency. The National Medical Stockpile provides a key reserve of essential

medicines and equipment to protect Australians from the effects of chemical, biological and radiological terrorism, or a major communicable disease outbreak. The response to a health emergency is primarily the responsibility of the State and Territory Governments but the Australian Government assists the States and Territories by enhancing their response capabilities and providing extra resources when requested.

The *National Health Disaster Management Capability Audit 2008* is the most recent published example of how the Australian government evaluates the performance of its disaster management system. As the 2008 report demonstrated, Australia's response to the H1N1 pandemic showed that the country's health system was capable of coping well in a national health emergency by activating highly developed plans to re-prioritise and adapt health and hospital services to accommodate increases in hospital patients, particularly in Intensive Care Units. The H1N1 experience also showed the value of having the flexibility to adapt plans to meet the individual needs of a particular health emergency. The success of Australia's national response and coordination capacity in dealing with the aftermath of emergencies such as the two Bali bombings in 2002 and 2005, the SARS crisis in 2003, the Indian Ocean Tsunami in 2004/5, the Mumbai terrorist attack in 2008 and the Ashmore Reef explosion in 2009 are also prime examples of how the Australian health system coped admirably when faced with external health disasters. However, the report also noted several areas of improvement, including strengthening the National Medical Stockpile, and increasing the training in health disaster management.

How we classified this on our Performance Measurement Ladder? (Appendix 1)
OPHS Areas involved: Public Health Emergency Preparedness
Level
4I-c The data are available publicly
4II-e Regulatory approach (the data are used by regulators, *e.g.*, closing a restaurant or pool)
4II-f Used within the independent organization to promote better practices or quality improvements
Sources:
Australian Government, Department of Health and Aging. Health Emergency Preparedness and Response. Website: http://www.health.gov.au/internet/main/publishing.nsf/content/health-pubhlth-strateg-bio-index.htm
National Health Disaster Management Capability Audit 2008 available from http://www.health.gov.au/internet/main/publishing.nsf/Content/ohp-hlth-disaster-mngment-cap-audit-2008

B4: The Communicable Diseases Network Australia (CDNA)

The Communicable Diseases Network Australia (CDNA) was a subcommittee of the National Public Health Partnership (case B1) and provided national public health leadership and coordination on communicable disease surveillance, prevention and control. It also offered strategic advice to governments and other key bodies on public health actions to minimize the impact of communicable diseases in Australia and the region. It was originally established as the Communicable Disease Control Network in 1989 as a joint initiative of the Australian Health

Minister's Advisory Council and the National Health and Medical Research Council, with responsibility for: coordinating national communicable disease surveillance; response to national outbreaks of communicable diseases; and field training of epidemiologists.

Since 1995, the Network has overseen the implementation and development of the National Communicable Diseases Surveillance Strategy. The strategy aims to develop the infrastructure and systems for effective national surveillance, preparedness and responses to communicable disease risks. Its Communicable Disease Surveillance Branch oversees national and international surveillance of communicable disease, and is responsible for timely and accurate intelligence gathering, analysis and reporting of communicable diseases, including vaccine preventable diseases, and zoonoses, foodborne and emerging infectious diseases. The Branch coordinates the provision of daily and biweekly summary reports of communicable diseases events. The Branch also maintains the Biosecurity Surveillance System to provide a range of communicable disease surveillance systems including; the National Notifiable Disease Surveillance System (NNDSS), which collects information on 65 diseases of public health importance; the Virology and Serology Laboratory Reporting Scheme (LabVISE), which collects data on the laboratory identification of viruses; the Outbreak Case Reporting System; the Syndromic Surveillance System (SSS) and OzFoodnet, Australia's national foodborne disease surveillance system. The surveillance data are used to inform disease control activities and/or policy initiatives both at the national and domestic level. Data from these surveillance schemes are published quarterly in the journal *Communicable Diseases Intelligence* (CDI) and are reported on its website biweekly. Specific communicable disease surveillance programs that report in CDI include: foodborne diseases; gonococcal infections; HIV/AIDS; influenza; meningococcal infections; tuberculosis and; vaccine preventable disease and childhood immunisation coverage.

How we classified this on our Performance Measurement Ladder? (Appendix 1)
OPHS Areas involved: Infectious Disease Prevention; Sexual Health, STIs and Blood-borne Infection Prevention; Tuberculosis Prevention.
Level
4I-c The data are available publicly
4II-e Regulatory approach (the data are used by regulators, *e.g.*, closing a restaurant or pool)
Sources:
Australian Government, Department of Health and Aging. Communicable diseases information.
Website: http://www.health.gov.au/internet/main/publishing.nsf/Content/ohp-communic-1

B5: National Environmental Health Strategy

The National Environmental Health Strategy (2007-2012) provides direction for environmental health management across Australia. The key environmental health risks in Australia addressed by this strategy include: emergencies and disasters; climate change; drinking water; and urban development. This strategy is to be implemented by the Environmental Health Committee, a subcommittee of the Australian Health Protection Committee (AHPC). The highest priorities for the Strategy are to continue to use a risk assessment and management approach to enhance Australia's ability to respond to environmental health challenges and establish

regulations, legislation and indicators and risk management tools to ensure environmental standards. Under the Strategy these priorities will be implemented through action areas grouped within the following framework: preparedness for emergencies and capacity to respond; workforce development and support; evidence-based, effective and nationally consistent guidance that supports the protection of public health; climate change and adaptation; and surveillance.

How we classified this on our Performance Measurement Ladder? (Appendix 1)
OPHS Areas involved: Health Hazard Prevention
Level:
2 Goals and indicators defined for this category, but data collection does not appear to be taking place
Sources:
Australian Government, Department of Health and Aging. enHealth. Website:
http://www.health.gov.au/internet/main/publishing.nsf/Content/ohp-environ-envstrat.htm

B6: National Tobacco Strategy

The National Tobacco Strategy is a statement of resolve by the Australian Government and state and territory governments to work together and in collaboration with non-government agencies to reduce tobacco uptake and exposure. The objectives of the Strategy is to prevent the uptake of smoking; to encourage and assist as many smokers as possible to quit; to eliminate harmful exposure to tobacco smoke among non-smokers; and to reduce harm associated with continuing use of and dependence on tobacco and nicotine. The National Tobacco Strategy is a comprehensive approach to reducing tobacco-related harm, including plans to use: regulation to reduce the use of, exposure to, and harm associated with tobacco; *Quit* and *Smokefree* public service messages; and improvement of the quality of, and access to, services and treatments for smokers. Since 2004, a series of implementation progress reports have been collected from the federal government as well as all Australian state and territory governments. The most recent report available at the time of writing was from 2007; it not only listed the objectives of the National Tobacco Strategy but then also provided an example of what they are doing to implement this strategy. As result, an extremely comprehensive overview of Australia's tobacco control policy is available to the public.

How we classified this case on our Performance Measurement Ladder? (Appendix 1)
OPHS Areas involved: Chronic Disease Prevention
Level
4I-c The data are available publicly
4II-g Used as a management tool to compare and pull out poor or good performers through the public availability of the data, hoping organization would improve its performance when it compares itself against other jurisdictions
Sources:
Australian Government, Department of Health and Aging. Tobacco. Website:
http://www.health.gov.au/internet/main/publishing.nsf/Content/phd-tobacco-progress-cwealth-07

B7: Sexual Health & Family Planning Australia Strategic Plan

Sexual Health and Family Planning Australia (SH&FPA) is a national federation of eight independent state and territory sexual health and family planning organizations. SH&FPA is also responsible for an international program which contributes to sexual and reproductive health in the Asia Pacific Region. SH&FPA believes that knowledge and freedom of choice in sexual health and family planning is a basic human right.

Member Organizations deliver clinical services, which include: Pap smears; Breast checks; STD & STI checks and counseling services for HIV, Hepatitis, and Chlamydia; Consultations, counseling and provision of contraceptives; Pregnancy Tests; Pregnancy counseling; and Treatment and counseling for menopause related problems. Sexual health and family planning organizations also play a key role in the provision of information and education services about sexuality and sexual health to the public. The extensive community education programs focus on informing the community about: Reproduction; Contraceptive methods; and Relationships and self-esteem.

How we classified this on our Performance Measurement Ladder? (Appendix 1)
OPHS Areas involved: Sexual Health, STIs, and Blood-borne Infection Protection
Level:
2 Goals and indicators defined for this category, but data collection does not appear to be taking place
Sources:
Sexual Health & Family Planning Australia. Website: http://www.shfpa.org.au/

B8: Australian Chronic Disease Prevention Alliance

The Australian Chronic Disease Prevention Alliance (ACDPA) is comprised of five non-government health organizations who work together to prevent chronic disease, with particular focus on risk factors such as poor nutrition, physical inactivity, overweight and obesity, and smoking. The members of ACDPA are: Cancer Council Australia, Diabetes Australia, Kidney Health Australia, National Heart Foundation of Australia, and the National Stroke Foundation. ACDPA aims to develop evidence-based recommendations on priorities for action in the prevention of chronic disease to the Australian government. The association also develops initiatives contributing to the prevention of chronic disease and seeks to work cooperatively with government and members of parliament at all levels, including the Australian Department of Health and Ageing, and State/Territory Departments of Health in the development and implementation of programs for the prevention of chronic disease. Although some documents from the ACDPA noted the need for performance indicators and surveillance data, the website would suggest that current efforts are focused on lobbying to regulate “the shared risk factors of poor nutrition, physical inactivity, overweight and obesity and their social determinants” with no evidence that data is currently being collected or disseminated.

How we classified this case on our Performance Measurement Ladder? (Appendix 1)
OPHS Areas involved: Chronic Disease Prevention
Level:
3 Goals and indicators defined, and data are being collected, but no indication that the data are being used for management. (In this category, it is often unclear how widely disseminated the data are, whether data collection has been standardized, and whether a common performance measurement system is being used.)
Sources:
Cancer Council Australia, Australian Chronic Disease Prevention Alliance. Website: http://www.cancer.org.au/aboutus/externalrelationships/affiliationspartnerships/ACDPA.htm.

B9: Western Australia Public Health Division

The Public Health Division of the state of Western Australia (WA) is responsible for coordination and delivery of a wide range of state-wide public health policy and programmes such as; food safety, vector control, waste-water management, immunisation, infectious disease surveillance, outbreak investigation, sexual health and disaster management. The WA Public Health Division has three categories of performance measurement and evaluation: guidelines, policies, and plans. These categories are designed as: surveillance mechanisms to monitor and control the spread of Communicable Diseases; Environmental Health (including environmental hazards, and promotion of environmental health), and Emergency Preparedness. There are sub-categories within each of these three categories. Under communicable diseases, for example, there are several action plans and strategies in place to help promote the reduction of sexually transmitted infections and diseases.

How we classified this case on our Performance Measurement Ladder? (Appendix 1)
Note that there are multiple sub-cases, some classified differently
OPHS Areas involved: Chronic Disease Prevention (Tobacco Control); Infectious Disease Prevention; Sexual Health, STIs, and Blood-borne Infection Prevention; Vaccine Preventable Diseases; Food Safety
Level
4I-c The data are available publicly
4II-f Used within the independent organization to promote better practices or quality improvements

OPHS Areas involved: Water Safety (both drinking water and public pools)
Level
4I-c The data are available publicly
4II-e Regulatory approach (the data are used by regulators, *e.g.*, closing a restaurant or pool)

OPHS Areas Involved: Health Hazard Prevention (Air Quality; Pesticide Control).
Level
2 Goals and indicators defined for this category, but data collection does not appear to be taking place

Health Hazard Prevention (Environmental Health):
Level
3. Goals and indicators defined, and data are being collected, but no indication that the data are being used for management. (In this category, it is often unclear how widely disseminated the data are, whether data collection has been standardized, and whether a common performance measurement system is being used.)
Sources:
Jorm, L., Gruszin, S., & Churches, T. (2009, Apr 9). A multidimensional classification of public health activity in Australia. *Australia and New Zealand Health Policy,* 6(9):1–10.
Government of Western Australia, Department of Health, Public Health. Website: http://www.public.health.wa.gov.au/ See particularly: http://www.public.health.wa.gov.au/1/7/1/policies_and_plans.pm and http://www.public.health.wa.gov.au/1/6/1/publications_and_resources.pm.

B10: New South Wales Public Health Division

In New South Wales, the Public Health Division seeks to improve the health and well-being of people through approaches which focus on whole populations. The Public Health Division works with communities and organizations to create circumstances that promote and protect health, and prevent injury, ill health, and disease by: monitoring health and implementing services to improve life expectancy and the quality of life; developing, maintaining and reporting on health data sets; implementing disease and injury prevention measures; promoting and educating people about healthier lifestyles; protecting health through disease prevention services and legislation; and ensuring the quality use of medicines, the safe use of poisons, and safe, high quality care in private health facilities.

How we classified this case on our Performance Measurement Ladder? (Appendix 1)
Note that there are multiple sub-cases, some classified differently.
OPHS Areas involved:
Chronic Disease Prevention (Obesity); Public Health Emergency Preparedness (Pandemic Preparedness); Other (Hearing Health – not charted)
Level
3 Goals and indicators defined, and data are being collected, but no indication that the data are being used for management. (In this category, it is often unclear how widely disseminated the data are, whether data collection has been standardized, and whether a common performance measurement system is being used.)

Chronic Disease Prevention (Tobacco Control); Infectious Disease Prevention
Level
4I-c The data are available publicly
4II-f Used within the independent organization to promote better practices or quality improvements

Sexual Health, STIs, and Blood-borne Infection Prevention

Level
4II-g Used as a management tool to compare and pull out poor or good performers through the public availability of the data, hoping organization would improve its performance when it compares itself against other jurisdictions

Vaccine Preventable Diseases (Immunisation)
Level
4I-b The data are moving up through the levels of the organization or government
4II-f Used within the independent organization to promote better practices or quality improvements

Water Safety (Water Quality)
Level
4I-c The data are available publicly
4II-e Regulatory approach (the data are used by regulators, *e.g.*, closing a restaurant or pool)

Health Hazard Prevention (Air Quality);
Level
2 Goals and indicators defined for this category, but data collection does not appear to be taking place
Sources:
New South Wales Government, Public Health. Website:
http://www.health.nsw.gov.au/publichealth/index.asp

B11: Victoria Department of Health

The Department of Health is compromised of three portfolios; Health, Mental Health and Aged Care. The Health portfolio oversees health care services through the public hospital system, community health services and ambulance services. It is also responsible for health promotion and protection through emergency management, public health and related preventative services, education and regulation. The Mental Health portfolio oversees a range of alcohol and drug prevention and treatment services. The public mental health service system consists of clinical services and psychiatric disability rehabilitation and support services. Aged Care manages the residential and rehabilitation care for older people, along with support and assistance to enable them to remain independently in their own homes.

How we classified this case on our Performance Measurement Ladder? (Appendix 1)
Note that there are multiple sub-cases, some classified differently.

OPHS Areas involved:
Chronic Disease Prevention (Obesity)
Level
3 Goals and indicators defined, and data are being collected, but no indication that the data are being used for management. (In this category, it is often unclear how widely disseminated the

data are, whether data collection has been standardized, and whether a common performance measurement system is being used.)

Injury and Substance Misuse Prevention; Public Health Emergency Preparedness; Other (Climate Change – not charted)
Level
2 Goals and indicators defined for this category, but data collection does not appear to be taking place

Infectious Disease Prevention; Sexual Health, STIs, and Blood-borne Infection Prevention:
Level
4I-c The data are available publicly
4II-f Used within the independent organization to promote better practices or quality improvements

Vaccine Preventable Diseases (Immunisation):
Level
4I-b The data are moving up through the levels of the organization or government
4II-f Used within the independent organization to promote better practices or quality improvements

Water Safety
Level
4I-c The data are available publicly
4II-e Regulatory approach (the data are used by regulators, *e.g.*, closing a restaurant or pool)

Sources:
Victoria Department of Health. Website: http://www.health.vic.gov.au/

C: New Zealand: Overview

The OECD estimates that New Zealand spent 9.8% of GDP on health care in 2008; 80.4% of expenditures were from public sector sources (OECD 2010).

New Zealand's system initially resembled that of the UK, with heavy reliance on public delivery. In recent years, a series of reforms has made the system more mixed, with both public and private delivery, and more reliance on out of pocket payments. The system has also regionalized; in 2001, a series of District Health Boards were set up with responsibility for funding and providing health care in their districts. (As of 2011, there were 20 of these boards.) Some health care services are delivered publicly (*e.g.*, many hospitals), and others privately, albeit often with public funding.

At the national level, the Ministry of Health (MoH) has responsibility for providing guidance (and funding) for health care, and for disability support. The Ministry's stated goals are: "to improve, promote and protect the health of all New Zealanders; advise the Minister on strategy, policy and system performance, including advice on improving health outcomes, reducing disparities, ensuring fairness and increasing participation; acting on behalf of the Minister to monitor and improve the performance of health sector and Crown agencies and District Health Boards, which are responsible for the health of their local communities; administer legislation and regulations on behalf of the Crown and meet legislative requirements; and fund and purchase health support services on behalf of the crown, including the maintenance of service agreements, particularly for public health, disability support services and other services funded by the Ministry." One of the branches is the Population Health Directorate, which "oversees progress in addressing national health priorities by monitoring and using information to develop national, regional and local health and disability strategies and plans." The Ministry also includes a Maori Health Directorate which fouses on health care for this population.

Public health services come under the district health boards. Their responsibilities include "providing basic health protection services, such as water and food safety, and health promotion services such as anti-smoking programmes. Their employees include public health physicians and other health care professionals, as well as officers who monitor and enforce public health legislation. General practitioners and other primary care providers also provide prevention services for their patients, such as immunizations, as well as individual and group health education and promotion."

Another independent source of input is the Public Health Advisory Committee (PHAC), a subcommittee of the National Health Committee. It provides independent advice to the MoH on public health issues, including; factors influencing the health of people and communities; the promotion of public health; and the monitoring of public health. Themes running through PHAC projects include the wider determinants of health, reducing health inequalities, improving Māori health, and the need for intersectional collaboration.

Many of the case examples included below involve government development and publication of goals and indicators, with the hopes that these will be used to improve performance by the District Health Boards and others providing care.

Sources:

French, S., Old, A., Healy, J., Durham, G., & Davies, P. (2001). *Health Care Systems in Transition: New Zealand*. Copenhagen, Denmark: European Observatory on Health Care Systems. Available from: http://www.euro.who.int/__data/assets/pdf_file/0008/95138/E74467.pdf

New Zealand Ministry of Health. (2007). *How to Monitor for Population Health Outcomes: Guidelines for developing a monitoring framework*. Occasional Bulletin No. 44. Wellington: Ministry of Health. Available from: http://www.moh.govt.nz/moh.nsf/pagesmh/6463/$File/HowtoMonitorPHOutcomesv2.pdf

New Zealand Ministry of Health. (2006) *Guide to Developing Public Health Programmes: A Generic Programme Logic Model* (2006). Available from http://www.moh.govt.nz/moh.nsf/pagesmh/3384/$File/public-health-programme-v2-may07.pdf

New Zealand Ministry of Health http://www.health.govt.nz/ (Note: new web site; old content is currently being migrated from http://www.moh.govt.nz/moh.nsf)

District Health Boards. Website: http://www.moh.govt.nz/moh.nsf/indexmh/dhbs.

Health Targets. Website: http://www.moh.govt.nz/moh.nsf/indexmh/healthtargets-reporting.

Health Impact Assessment. Website: http://www.moh.govt.nz/hiasupportunit.

Organisation for Economic Co-operation and Development. (2010). *OECD Health Data 2010: How Does New Zealand Compare?* Paris, France: Organisation for Economic Co-operation and Development, July. Available from: http://www.oecd.org/dataoecd/43/22/40905041.pdf

C1: Health Targets

As described on the New Zealand Ministry of Health web site, "Health Targets are a set of national performance measures specifically designed to improve the performance of health services. They provide a focus for action.

The impact they make can be measured to see how they are improving health for all New Zealanders. Health Targets were introduced to the New Zealand health system in 2007/08. They are reviewed annually to ensure they align with government health priorities." There are currently six health targets.

- shorter stays in emergency departments
- improved access to elective surgery
- shorter waits for cancer treatment
- increased immunisation
- better help for smokers to quit
- better diabetes and cardiovascular services.

"The first three focus attention on patient waiting times in public hospitals. The last three focus on early intervention to prevent ill health, investing in the health of our children, and effective prevention through primary health care services."

The Ministry reports results on the key indicators quarterly on their website. It also states that "The health targets will be reassessed annually to ensure they are relevant and align with the health priorities of the time." The Ministry publishes information for each health target in a publication, available online; the most recent information is for the second quarter of 2010/11. They also publish Health Targets; *Health Targets 2009/10* describes how progress will be measured in each target area and lists the agreed target levels for each District Health Board. Improving performance across the sector is fundamental to the Government's goal of ensuring that there is an effective and efficient health and disability sector that provides better services to all New Zealanders.

Progress is reviewed quarterly and reported on the Ministry of Health website.

How we classified this case on our Performance Measurement Ladder? (Appendix 1)
OPHS Areas involved: Chronic Disease Prevention; Vaccine Preventable Diseases
Level
4I-c The data are available publicly
4II-g Used as a management tool to compare and pull out poor or good performers through the public availability of the data, hoping organization would improve its performance when it compares itself against other jurisdictions
Source
New Zealand Ministry of Health, Health Targets. Website: http://www.moh.govt.nz/healthtargets
How is your DHB Performing (Quarterly reports). Website:
http://www.moh.govt.nz/moh.nsf/indexmh/healthtargets-reporting
Health Targets 2009/2010. Available from
http://www.moh.govt.nz/moh.nsf/indexmh/health-targets-200910

C2: Family Violence: Violence Intervention Program (VIP)

New Zealand's Violence Intervention Programme (VIP) supports health sector family violence throughout New Zealand by funding family violence intervention coordinator positions in all District Health Boards (DHBs), auditing DHB performance, supporting related research and evaluation, and offering technical advice and training support to health services committed to the programme. VIP has published four guidelines documents on its website, outlining steps health care professionals are to take if they suspect family violence. The guidelines are generic and do not indicate any follow up method that is used to assess the implementation of these guidelines. The guidelines are intended for use in conjunction with health professional training offered through the New Zealand Ministry of Health Family Violence Project 2001-2004.

How we classified this case on our Performance Measurement Ladder? (Appendix 1)
OPHS Areas involved: Injury and Substance Misuse Prevention
Level

3. Goals and indicators defined, and data are being collected, but no indication that the data are being used for management. (In this category, it is often unclear how widely disseminated the data are, whether data collection has been standardized, and whether a common performance measurement system is being used.)
Sources:
New Zealand Ministry of Health, Family Violence. Website:
http://www.moh.govt.nz/familyviolence.
See http://www.moh.govt.nz/moh.nsf/indexmh/familyviolence-guidelinesreports for reports.

C3: Quality Improvement Plan (QIP): Cardiovascular Disease and Diabetes

According to the website, "The Diabetes and Cardiovascular Disease Quality Improvement Plan (QIP) establishes a nationally consistent framework for continuous quality improvement of clinical services for diabetes and cardiovascular disease. The QIP sets out specific, practical recommendations and areas for priority actions across different clinical settings." The framework is intended to provide the Ministry of Health and District Health Boards with expert advice in terms of specific practical recommendations and actions in priority areas across different clinical care settings. A set of indicators relevant to the priority areas identified is included for all recommendations and actions. The QIP focuses on the management of people with (or at high risk for) cardiovascular disease or diabetes. It includes: a review of the cardiovascular disease and diabetes outcome data regionally, nationally, and internationally; and an analysis of the data and identification of quality improvement priority areas in relation to each. Its purpose is to provide the District Health Boards with a three-year plan to implement priorities that have been nationally agreed and coordinated to improve health outcomes and the quality of care of people living with these diseases. Implementation of this plan will require leadership from senior clinicians and managers within District Health Boards, Primary Health Organizations, and non-governmental organizations.

How we classified this case on our Performance Measurement Ladder? (Appendix 1)
OPHS Areas involved: Chronic Disease Prevention
Level
2 Goals and indicators defined for this category, but data collection does not appear to be taking place
Sources:
New Zealand Ministry of Health. *Diabetes and Cardiovascular Disease Quality Improvement Plan* (2008). Wellington, Ministry of Health. Available from:
http://www.moh.govt.nz/moh.nsf/indexmh/diabetes-cardio-quality-improvement-plan-feb08

C4: Diabetes

In 1997, the Ministry of Health (MoH) published "Strategies for the Prevention and Control of Diabetes" in response to the increasing number of new diabetes cases reported each year. This report identified several key strategies for prevention and control of diabetes. In 2000, the Health Funding Authority released "*Diabetes 2000*", a report that addresses how those strategies have, or have not, been implemented. It concluded that, while many of those strategies have been implemented, improvement is needed in some areas, including; the establishment of local diabetes teams and information systems to identify and monitor the needs within different regions; improving services to individuals with diabetes by introducing free annual reviews; increasing education and management of diabetes (i.e. increasing number of eye-screening examinations; and reducing barriers to access by removing the inequality of health outcome for Maori and Pacific Island people. In 2005, Diabetes New Zealand commissioned Pricewaterhouse Coopers to develop a diabetes scorecard to be used as a management tool for District Health Boards to monitor the progress in detecting and managing diabetes and improving diabetes-related health services. Five District Health Boards participated in the original pilot project (Auckland, Hutt, Northland, Southland, and Waitemata). Approximately 3000 surveys were circulated and 1000 responses were received. The major conclusions of this pilot project were the scorecard could be used as an effective tool for monitoring the performance of diabetes health related services. However, recommendations were made to improve the indicators used on the scorecard as they were found not to be specific enough.

It should be noted that the indicators that the scorecard recommended should be retained dealt with clinical services (*e.g.*, screening for vision), whereas those dropped were those dealing with population health (*e.g.*, prevalence, prevention). It does not appear that the scorecard is being used.

How we classified this case on our Performance Measurement Ladder? (Appendix 1)
OPHS Areas involved: Chronic Disease Prevention
Level
2 Goals and indicators defined for this category, but data collection does not appear to be taking place
Sources:

New Zealand Health Strategy. *DHB Toolkit: To Reduce the Incidence and Impact of Diabetes*. 2003 available from http://www.moh.govt.nz/moh.nsf/indexmh/diabetes-dhb-toolkit-dec03

Ministry of Health. 2008. *National Diabetes Retinal Screening Grading System and Referral Guidelines 2006.* Wellington: Ministry of Health. Available from http://www.moh.govt.nz/moh.nsf/0/06E1C5F9A7E9BD45CC257257006E0E4A

Pricewaterhouse Coopers (2005). *The Diabetes New Zealand Balanced Scorecard Review of the Pilot Scorecard*. Available from http://www.diabetes.org.nz/__data/assets/pdf_file/0017/2366/DiabetesScorecardNov05.pdf

New Zealand Ministry of Health, Diabetes in New Zealand. Website: http://www.moh.govt.nz/diabetes. For publications and statistics http://www.moh.govt.nz/moh.nsf/indexmh/diabetes-publications.

C5: National Immunisation Register (NIR) and the Immunisation Advisory Centre (IMAC)

New Zealand's Ministry of Health lists immunization as one of its top public health priorities. However, it is noted that New Zealand has yet to achieve its immunization targets of 95 percent coverage in children and over 75 percent in adults. Coverage is also inequitable, with lower rates in Mäori and Pacific children and adults. From 2003-2006, the National Immunisation Program (NIP) developed a series of strategic directions aiming to meet these targets, which included; implementing the National Immunisation Register (NIR), a critical support tool for health care providers as it would provide an electronic record of children immunized throughout New Zealand; achieving a significant reduction in meningococcal B disease, through introduction of the MeNZB vaccine in 2004; improving access to immunisation services in primary care and outreach settings to reduce inequalities in immunisation coverage and prioritizing equitable coverage for Maori and Pacific peoples; and developing an effective communication and promotion strategy for immunisation as a key component of child and adult health. The NIP's purpose was to play a lead role in funding and coordinating immunization activities (including ongoing vaccinator workforce development), and evaluating programme activities. Currently, the NIR is in use as a computerized information system and is used as the primary tool to measure the percentage of New Zealand children who are, and are not, receiving childhood vaccines. Before the NIR, immunization coverage was measured using coverage surveys. The last survey was in 2005, and showed 77% of children were fully immunized at the age of 2 years. Since the National Immunisation Register (NIR) was rolled out in District Health Boards (DHBs) throughout 2005, data (national, and for most DHBs) has been available for the 6 month, 12 month, 18 month, 24 month and 5 year milestone ages, and is published on the government website.

Government has also employed some regulatory controls, in that all schools and pre-schools have been required (since 2000) to maintain an immunisation register of their students. Parents are required to present an immunisation certificate, signed by the family doctor or nurse, to the school. This information is used at times of disease outbreaks to identify susceptible individuals. The certificates are given to parents at the 15-month immunisation event and then again after the 4-year old immunisations. However, the certificate can be signed at any time. Children are able to attend an early childhood service or school even if they have not been immunised.

How we classified this case on our Performance Measurement Ladder? (Appendix 1)
OPHS Areas involved: Vaccine Preventable Diseases
4I-c The data are available publicly
4II-e Regulatory approach (the data are used by regulators, *e.g.*, closing a restaurant or pool)

4II-g Used as a management tool to compare and pull out poor or good performers through the public availability of the data, hoping organization would improve its performance when it compares itself against other jurisdictions

Sources:

New Zealand Ministry of Health, Immunisation. Website:
http://www.moh.govt.nz/moh.nsf/indexmh/immunisation-coverage-data

C6: Nutrition (Healthy Eating Healthy Action)

New Zealand's Ministry of Health provides policy advice to the Government on nutrition, including breastfeeding. It also oversees the Healthy Eating, Healthy Action strategy and its implementation. The HEHA strategy is a framework to improve nutrition, increase physical activity and reduce obesity. The plan provides a level detail on how those goals can be met, and how they can be implemented by a wide range of individuals and organizations. The plan outlines the steps required to address issues of poor nutrition, physical inactivity and obesity. Its objectives are: develop and implement a comprehensive communication plan to ensure consistent nutrition and physical activity messages; promote nutrition, physical activity and obesity issues in schools; identify and develop activities promoting nutrition and physical activity in primary health care settings; investigate options for improving food security in low income families with children; initiate development and implementation of a range of social marketing strategies to facilitate behavioural changes supporting healthy eating, healthy action and healthy weight; develop and expand community action programmes for high-need groups; develop and implement a strategy to increase capacity and capability of health professionals and community health workers; and develop a monitoring plan.

The Ministry of Health also collects and maintains food consumption and food composition databases by conducting national nutrition surveys, and funding services to promote healthy eating and physical activity. For example, the Ministry provides six food and nutritional guides. This series of six population-specific food and nutrition guidelines provides the Ministry with evidence to support its nutritional policy and implementation of strategies such as HEHA. They are also an important tool for health professionals in New Zealand who provide nutrition advice. In 2009, the Ministry of Health released two reports: "*Clinical Guidelines for Weight Management in New Zealand Adults*" and "*Clinical Guidelines for Weight Management in New Zealand Children and Young People*". These reports provide guidelines for management of overweight and obese New Zealanders, with a focus on Maori and South Pacific peoples. The guidelines are meant to influence practice, reduce unnecessary variation and provide a consistent approach across the many programmes in the private and public sector. The Guidelines were developed by the Clinical Trials Research Unit at the University of Auckland.

How we classified this case on our Performance Measurement Ladder? (Appendix 1)

OPHS Areas involved: Chronic Disease Prevention

Level

3. Goals and indicators defined, and data are being collected, but no indication that the data are being used for management. (In this category, it is often unclear how widely disseminated the

data are, whether data collection has been standardized, and whether a common performance measurement system is being used.)

Sources:

Ministry of Health and Clinical Trials Research. 2009.*Clinical Guidelines for Weight Management in New Zealand Children and Young People*. Wellington: Ministry of Health. Available from: http://www.moh.govt.nz/moh.nsf/indexmh/clinical-guidelines-for-weight-management-in-nz-children-and-young-people.

Ministry of Health, Clinical Trials Research Unit. 2009. *Clinical Guidelines for Weight Management in New Zealand Adults*. Wellington: Ministry of Health. Available from: http://www.moh.govt.nz/moh.nsf/indexmh/clinical-guidelines-for-weight-management-in-nz-adults.

New Zealand Ministry of Health. Healthy Eating – Healthy Action. Website: http://www.moh.govt.nz/healthyeatinghealthyaction.

New Zealand Ministry of Health. Nutrition. Website: http://www.moh.govt.nz/nutrition.

C7: Promoting Oral Health

In 2006, the Ministry of Health released *Good Oral Health for All, for Life: The Strategic Vision for Oral Health in New Zealand* (Ministry of Health 2006). This report outlines the seven key action areas that will be the focus of the Ministry's oral health policy over the next 10 years. These action areas include: creating an environment that promotes good oral health; oral health services that promote, improve, maintain and restore oral health throughout the life course; publicly funded services that are accessible, appropriate and proactively addressing the needs of those at the greatest risk for poor oral health; publicly funded oral health services that are part of the community; building links with primary health care; building the oral health workforce; and developing oral health policy. In 2008, the Ministry of Health released the report "*Promoting Oral Health: A Toolkit to Assist the Development, Planning, Implementation and Evaluation of Oral Health Promotion in New Zealand*". The objective of this report was to act as a toolkit that provides a practical guide for the design, delivery, and evaluation of programmes that promote oral health. Subsequently, in 2009, the Ministry of Health conducted a New Zealand Oral Health Survey. This survey involved 2000 adults and 1000 children and was commissioned to gather up-to-date information about the oral health of New Zealanders and the oral health services they use. It was the first nationwide survey looking at oral health in 20 years. Results were released in 2010. The findings confirmed that the New Zealand policy of providing free, publicly-funded oral health services for those under age 18 had been successful. "The survey showed that large improvements in oral health have occurred for children since the 1980s, with the proportion of 12–13-year-olds who were caries-free almost doubling between 1988 (28.5%) and 2009 (51.6%). The average lifetime experience of dental decay in permanent teeth (DMFT) had also significantly decreased (from 2.4 to 1.3 teeth) for this age group. In 2009 children and adolescents had relatively good oral health, although it was worse in the older age groups, and there were disparities, particularly by ethnic group and level of socioeconomic deprivation." (Ministry of Health, 2010).

How we classified this case on our Performance Measurement Ladder? (Appendix 1)

OPHS Areas involved: Chronic Disease Prevention; Child Health

Level
3. Goals and indicators defined, and data are being collected, but no indication that the data are being used for management. (In this category, it is often unclear how widely disseminated the data are, whether data collection has been standardized, and whether a common performance measurement system is being used.)
Sources:
Ministry of Health. 2006. *Good Oral Health for All, for Life: The Strategic Vision for Oral Health in New Zealand*. Wellington: Ministry of Health. Available from: http://www.moh.govt.nz/moh.nsf/pagesmh/5117/$File/good-oral-health-strategic-vision-2006.pdf
Ministry of Health. 2008. *Promoting Oral Health: A toolkit to assist the development, planning, implementation and evaluation of oral health promotion in New Zealand*. Wellington: Ministry of Health. Available from http://www.moh.govt.nz/moh.nsf/indexmh/promoting-oral-health-a-toolkit
Ministry of Health. 2010. *Our Oral Health: Key findings of the 2009 New Zealand Oral Health Survey*. Wellington, Ministry of Health. Available from: http://www.moh.govt.nz/moh.nsf/pagesmh/10514/$File/our-oral-health-2010.pdf
New Zealand Ministry of Health. Oral Health. Website: http://www.moh.govt.nz/oralhealth.

C8: National Drug Policy New Zealand

The goal of the National Drug Policy is to prevent and reduce the health, social and economic harms linked to tobacco, alcohol, illegal and other drug use. It sets out a single framework by establishing goals, objectives, and principles that will guide drug policy and intersectoral decision-making about the best way to address the harms caused by substance abuses. It also identifies the population groups that require special attention. To accomplish these goals the policy aims to: control or limit the availability of drugs; limit the use of drugs by individuals, including abstinence; and reduce harm from existing drug use. The following objectives have been identified for the National Drug Policy to achieve the overarching goal:

- to prevent or delay the uptake of tobacco, alcohol, illegal and other drug use, particularly in Maori, Pacific peoples and young people
- to reduce the harm caused by tobacco by reducing the prevalence of tobacco smoking, consumption of tobacco products and exposure to second-hand smoke
- to reduce harm to individuals, families and communities from the risky consumption of alcohol
- to prevent or reduce the supply and use of illegal drugs and other harmful drug use
- to make families and communities safer by reducing the irresponsible and unlawful use of drugs
- to reduce the cost of drug misuse to individuals, society and government.

Drug policy in New Zealand is based on the principle of harm minimisation. The aim of harm minimisation is to improve social, economic and health outcomes for the individual, the community and the population at large. Strategies that support harm minimisation can be divided into three groups or 'pillars':

- Supply control - which aims to prevent or reduce harm by restricting the availability of drugs.
- Demand reduction - which involves a wide range of activities that aim to reduce individuals' desire to use drugs
- Problem limitation - which seeks to reduce harm from drug use that is already occurring.

The government website includes results from a 2008 tobacco use survey, which allows the public to access data in spreadsheet format. It notes that "This report presents data directly related to smokers' history of quitting smoking, their reasons for quitting, the products, services and advice they've used, and their awareness and knowledge of the different health effects of nicotine and tobacco. Baseline data for monitoring the implementation of the New Zealand Smoking Cessation Guidelines are presented in this report. The data can also be used to monitor progress towards one of the six Health Targets, Better help for smokers to quit, that came into effect on 1 July 2009." (Ministry of Health 2009) The website also includes fact sheets on alcohol use.

How we classified this case on our Performance Measurement Ladder? (Appendix 1)
OPHS Areas involved: Chronic Disease Prevention; Injury and Substance Misuse Prevention
Level
3. Goals and indicators defined, and data are being collected, but no indication that the data are being used for management. (In this category, it is often unclear how widely disseminated the data are, whether data collection has been standardized, and whether a common performance measurement system is being used.)
Sources:
Ministry of Health. (2009). *2008 New Zealand tobacco use survey: Quitting results*. Wellington, New Zealand. Available from http://www.moh.govt.nz/moh.nsf/indexmh/quitting-report.
National Drug Policy New Zealand. Website: http://www.ndp.govt.nz/.

C9: Cancer Control

New Zealand has developed a Cancer Control Strategy, which sets principles and goals to guide existing and future actions to control cancer. Following the release of the Strategy in August 2003, the Cancer Control Taskforce was established to produce the New Zealand Cancer Control Strategy Action Plan 2005-2010, which describes in detail how the objectives of the Strategy will be achieved.

The New Zealand Cancer Control Strategy is described as the first phase in the development and implementation of a comprehensive and co-ordinated programme to control cancer in New Zealand. The strategy includes purposes, principles and goals to guide existing and future actions to control cancer. It also includes objectives and broad areas for action. The next phase will involve identifying priorities for action, planning implementation, and defining processes to manage, monitor and review implementation. The overall purposes of the New Zealand Cancer Control Strategy are to: reduce the incidence and impact of cancer; and reduce inequalities with respect to cancer. The goals of the New Zealand Cancer Control Strategy are to:

1. reduce the incidence of cancer through primary prevention

2. ensure effective screening and early detection to reduce cancer incidence and mortality
3. ensure effective diagnosis and treatment to reduce cancer morbidity and mortality
4. improve the quality of life for those with cancer, their family and whanau through support, rehabilitation and palliative care
5. improve the delivery of services across the continuum of cancer control through effective planning, co-ordination and integration of resources and activity, monitoring and evaluation
6. improve the effectiveness of cancer control in New Zealand through research and surveillance.

How we classified this case on our Performance Measurement Ladder? (Appendix 1)
OPHS Areas involved: Chronic Disease Prevention
Level
3. Goals and indicators defined, and data are being collected, but no indication that the data are being used for management. (In this category, it is often unclear how widely disseminated the data are, whether data collection has been standardized, and whether a common performance measurement system is being used.)
Sources:
New Zealand Ministry of Health. Cancer Control in New Zealand. Website:
http://www.moh.govt.nz/cancercontrol

C10: Communicable Diseases

The Integrated Approach to Infectious Disease (IAID) complements and reinforces a number of other key goals and objectives in the New Zealand Health Strategy, including: improving physical health, providing accessible and appropriate health care services, creating a healthy physical environment, and reducing inequalities in health status. The approach recognizes that incidence and impact of infectious disease are influenced by action not just in the health sector, but also in areas such as housing, agriculture and local government. The IAID defines the priorities and strategies for management of infectious diseases, based on a broad, multisectoral view of infectious disease transmission and control. It has been developed by people working in the infectious disease sector, in consultation with other governmental and non-governmental agencies, and co-ordinated by the Ministry of Health.

How we classified this case on our Performance Measurement Ladder? (Appendix 1)
OPHS Areas involved: Infectious Disease Prevention; Rabies Prevention; Sexual Health, STIs, and Blood-borne Infection Prevention; Tuberculosis Prevention; Vaccine Preventable Diseases
Level
4I-c The data are available publicly
4II-e Regulatory approach (the data are used by regulators, *e.g.*, closing a restaurant or pool)
4II-g Used as a management tool to compare and pull out poor or good performers through the public availability of the data, hoping organization would improve its performance when it compares itself against other jurisdictions
Sources:

New Zealand Ministry of Health. Communicable Diseases in New Zealand. Website: http://www.moh.govt.nz/cd.

C11: New Zealand Public Health Surveillance Report

The New Zealand Public Health Surveillance Report, published four times a year, is intended to provide surveillance information for action. Information provided by this regular report enables effective monitoring of rates and distribution of disease, detection of outbreaks, monitoring of interventions, and predicting emerging hazards. It covers a variety of topics, albeit often as single surveys rather than ongoing measurement.

How we classified this case on our Performance Measurement Ladder? (Appendix 1)
OPHS Areas involved: Infectious Disease Prevention; Health Hazards
4I-c The data are available publicly
Sources:

Ministry of Health. (2009). 2008 *New Zealand tobacco use survey: Quitting results*. Wellington, New Zealand. Available from http://www.moh.govt.nz/moh.nsf/indexmh/quitting-report.
Ministry of Health. (2009). *Alcohol use in New Zealand: Key results of the 2007/08 New Zealand alcohol and drug use survey*. Wellington, New Zealand. Available from http://www.moh.govt.nz/moh.nsf/indexmh/alcohol-use-in-nz-oct09.
Public Health Surveillance. New Zealand Public Health Surveillance Report. Website: http://www.surv.esr.cri.nz/surveillance/NZPHSR.php.

C12: Environmental Health Indicators Project (EHI)

Environmental health comprises those aspects of human health and diseases that are influenced by factors in the environment. The Environmental Health Indicators (EHIs) project was commissioned by the New Zealand Ministry of Health to develop a functional core set of environmental health indicators (EHIs), which measure the relationship between the environment and health. These indicators function not only as tools to monitor changes in the environment and health but also as ways to survey status or trends of public events associated with environmental exposures. These indicators can also be used to provide information to decision makers and act as objective baseline information that can be used for developing targets. The project has stated that the main criteria for an EHI are: routinely collected data to be used; meaningful summary of the conditions of interest; international benchmarking capability; scientifically sound; and sensitive and specific to real changes in the conditions being measured. Three types of indicators are included: Human health effects that are caused by or associated with environmental exposure; Measures of environmental quality that have the potential to affect human health; and Activities that place pressures on the environment or/and increase the possibility of exposure in vulnerable populations.

In New Zealand, the environmental health issues currently being monitored are air quality, drinking and recreational water quality, radiation, and traffic. The current set of indicators include:

Air Quality: (number of vehicles per person; road transport fuel consumption; emission of air pollutants; ambient air pollution; mortality due to Respiratory Diseases; mortality due to Circulatory Diseases; number of hospital admissions for Respiratory Diseases; number of hospital admissions for Circulatory Diseases; prescription rates for Asthma medication and; number of hospital admissions for Asthma).

Drinking Water: (drinking water compliance; access to safe drinking water; outbreaks of drinking waterborne diseases; drinking waterborne disease rate; and intensity of drinking water quality monitoring).

Recreational Water Quality: (recreational water compliance; outbreaks of recreational waterborne diseases; recreational waterborne diseases rate and; intensity of recreational water quality monitoring).

Traffic: (mortality from traffic accidents; and rate of injuries by traffic accidents).

Radiation: (cumulative radiation dose; ultraviolent light index; incidence of skin cancer; topicality of permits on the use of radioactive substances and; effective environmental monitoring of radiation activity).

The EHIs being developed by this project are linked to a number of information gathering projects being undertaken by New Zealand government agencies, including the Ministry of Environment's Environmental Performance Indicators, census data, hospital data, etc.

How we classified this case on our Performance Measurement Ladder? (Appendix 1)

OPHS Areas involved: Chronic Disease Prevention; Water Safety; Health Hazard Prevention

Level:

4I-c The data are available publicly

4II-e Regulatory approach (the data are used by regulators, *e.g.*, closing a restaurant or pool)

Sources:

Ministry of Health. (2008). *Annual review of drinking-water quality in New Zealand 2007/08*. Wellington, New Zealand, October. Available from http://www.moh.govt.nz/moh.nsf/indexmh/annual-review-drinking-water-quality-nz-2007-08.

Public Health Surveillance. What are Environmental Health Indicators? Website: http://www.surv.esr.cri.nz/ehi/what_are_ehis.php.

D: European Union: Overview

Europe consists of many countries, with many different healthcare models. The European Union has worked to bring Health Policy and Public Health improvement together across its member states. The European Union is a political and economic union of 27 countries located primarily within Europe that has developed a standardized system of laws which apply to all member states. Standards of living vary greatly between countries within the European Union. As a result, the European Union has created "structural funds" designed to help even out these differences by improving living standards in poorer regions.

The leading public health concerns and leading causes of death within the European Union are heart disease and cancer. In 2004, Hungary had the highest death rate from cancer and France had the lowest death rate from ischaemic heart disease. European Union action aims to improve public health, identify potential sources of danger to human health and to prevent human illness within member states. These actions have played a part in improving public health in Europe and have lead to integrated health-related policies.

Countries within the European Union have made strides in researching Public Health activities and policies. As noted by Wilkinson and colleagues (2009) one of the potential downfalls of measuring public health quality across the European Union is that many of the comparisons made remain at the national level. This has pushed the European Union to expand its performance measurement systems and identify ways of looking at health at a sub-national level. This section includes several case examples of performance measurement systems that have been developed within the European Union and illustrate what can be accomplished at a National and Regional Level.

Sources:

Wilkinson JR, Berghmans L, Imbert F, Ledesert B, Ochoa A, and the Members of the ISARE III Project Team. 2009 Health indicators in the European regions: Expanding regional comparisons to the new countries of the European Union- ISARE III. *Public Health* 123(7): 490-495.

European Observatory. Website: http://www.euro.who.int/en/home/projects/observatory.

European Union health portal.

Health-EU. The Public Health Portal of the European Union. EC Health Indicators. Website: http://ec.europa.eu/health-eu/index_en.htm
See also http://ec.europa.eu/health-eu/health_in_the_eu/ec_health_indicators/index_en.htm.

OECD Health Data 2010 - Country Notes (includes notes for all OECD countries). Website: http://www.oecd.org/document/46/0,3746,en_2649_37407_34971438_1_1_1_37407,00.html

D1: Cancer Indicators

Borella (2008) sought to identify performance measurement indicators that could be used to make comparisons of national level public health factors involved in rates of cancer and disease burden. A total of 49 indicators were identified from the literature and public sources including: The World Health Organization, International Agency for Research on Cancer, Organisation for Economic Cooperation and Development and the Statistical Office of European Communities (Eurostat). A performance score was calculated for each of the 22 countries involved in the study to allow national level comparisons.

There is no evidence that the author continued to measure performance after the completion of the study. However, this study offers a set of indicators that could be used to measure countries' performance in regards to cancer within a public health setting. Many of the indicators identified remain clinically based, but include high-risk behaviour incidences such as smoking rates as well. This paper offers an example of how national level comparisons might be made and how performance scores could be calculated.

How we classified this case on our Performance Measurement Ladder? (Appendix 1)
OPHS Areas involved: Chronic Disease Prevention
Level:
3 Goals and indicators defined, and data are being collected, but no indication that the data are being used for management. (unclear if ongoing data collection has continued after this study was completed)
Sources:
Borella L. The European countries confronting cancer: a set of indicators assessing public health status. *Bulletin du Cancer* 2008; 95(11): 1053-1062.

D2: ISARE

The ISARE project is an experimental approach on gathering health data at a sub-national level in European Union States. The project has completed three phases. It has identified identifying appropriate health regions for each country, explored feasible ways of collecting regional data in each European region, and is moving to populate the data bases. The project examined 38 indicators that fall into eight categories:

1) Healthcare Professionals
2) Healthcare Structures
3) Demographic and Socio-economic Data
4) Mortality Rate
5) Data on Morbidity
6) Biological Factors and Health Habits
7) Living and Working Conditions
8) Data on Prevention

The study followed three phases of data collection. First a relationship was formed with the correspondents providing data in each health region; second, a survey instrument designed for data collection was developed; finally, an experimental data base was built to house the collected data. Data can be viewed at either the regional level or by indicator. There is also provision for comparing a given region to the 20 closest regions, as defined by given criteria (*e.g.*, population density). However, the data cannot be viewed by the general public (a login and password is required, with no information provided on how to obtain a login). Since the completion of the study in 2007, it is unclear if data are being continually collected and updated on the ISARE website.

How we classified this case on our Performance Measurement Ladder? (Appendix 1)
OPHS Areas involved: Chronic Disease Prevention; Injury and Substance Misuse Prevention; Child Health; Infectious Disease Prevention; Tuberculosis Prevention
Level:
3 Goals and indicators defined, and data are being collected, but no indication that the data are being used for management. (unclear if ongoing data collection has continued after this study was completed)
Sources:
Wilkinson JR, Berghmans L, Imbert F, Ledesert B, Ochoa A and the Members of the ISARE III Project Team. Health indicators in the European regions: Expanding regional comparisons to the new countries of the European Union- ISARE III. *Public Health* 2009; 123(7): 490-495.
Health Indicators in the European Regions. Website: www.isare.org.

D3: European Community Health Indicators and Monitoring (ECHIM)

The objective of the European Community Health Indicators and Monitoring (ECHIM) is to advance health monitoring in the European Union by developing valid, relevant and comparable health indicators. The ECHIM was developed in response to the annual plans of the European Commission's Public Health Programme 2003-2008, which mandated the development of a health knowledge and information system. The short list of health indicators includes 82 items (chosen from an initial list of 500 items); of these, 46 indicators were identified as having readily available data and being reasonably comparable across member states. These indicators cover structure, process, and outcome aspects. Data sources are identified for each indicator and include sources such as Eurostat (case D4), WHO, Organisation for Economic Co-operation and Development, Centralized Information System for Infectious Disease, Globocon and UN ECE road traffic database. While ECHIM provides a good example of indicators that can be used to measure several aspects of public health, it remains unclear how often data are collected and how it is used within the European Union. The website gives information on the indicators and how they are developed, but does not include data. However, it does include links to other sets of indicators available on the web.

How we classified this case on our Performance Measurement Ladder? (Appendix 1)
OPHS Areas involved: Chronic Disease Prevention; Injury and Substance Misuse Prevention; Reproductive Health; Infectious Disease Prevention; Health Hazard Prevention
Level:
3 Goals and indicators defined, and data are being collected, but no indication that the data are being used for management.
Sources:
National Public Health Institute (KTL) and European Union. *European Health Indicators: Development and Initial Implementation*. Final report of the ECHIM project. Helsinki, Finland 2008. Available from http://www.echim.org/docs/ECHIM_final_report.pdf
European Community Health Indicators Monitoring. Website: http://www.echim.org/. See http://www.healthindicators.eu/healthindicators/object_document/o5873n28314.html.

D4: EUROSTAT

Although health care provision is the responsibility of the individual member states, the member states have agreed to a set of data collections that ensure high quality and comparable health data that can inform evidence-based policy decisions at the National level. Note that health is a relatively minor component of this project.

The website notes that "Competence for the organisation and delivery of health services and healthcare is largely held by the Member States, although the EU has the responsibility to give added value through launching actions such as those in relation to cross-border health threats and patient mobility, as well as reducing health inequalities and addressing key health determinants. Gathering and assessing accurate, detailed information on health issues is vital for the EU to effectively design policies and target future actions." The strategy has gone through several iterations, with the current strategy (adopted in 2007) focusing on the years 2008-2013. The public health links also note that "In addition, recent developments on joint data collections together with the Organisation for Economic Co-Operation and Development (OECD) and the World Health Organisation (WHO) in the area of the system of health accounts as well as for data on human and physical resources for health care allow for improving international comparability and to reduce the burden for respondents." The tables compiled for the collection 'Public health' are provided mainly by the national statistical institutes and the ministries of health or other national institutes. Disaggregation by age, sex and other variables are provided where available. Some tables contain also regional data. The emphasis is on basic data and well-known common measures, usually in the form of rates and ratios.

The web site notes that public health data has been subdivided into three domains: Health care, Health Status Indicators from surveys, and Causes of Death. In turn, Health care is sub-divided into: *Health care expenditures* (which "provide information on expenditure in the functionally defined area of health distinct by provider category (*e.g.* hospitals, general practitioners), function category (products and services) and financing agent (*e.g.* social security, private insurance company, household). The definitions and classifications of the System of Health Accounts (SHA) are followed." *Health care non-expenditure* data, which "cover 'health care human resources' (physicians, dentists, nursing and caring professionals, etc) as well as

hospital statistics (hospital beds, surgical procedures in hospitals, high-tech equipment and patient related data,i.e. hospital discharges by disease)." *Health care indicators from surveys* includes "tables on perceived unmet needs for medical or dental care, consultations of health care professionals, hospitalisation, cancer screening, etc."

The health status indicators from surveys include "tables on self-perceived health, life styles and restrictions. Data on health conditions also play a role in the calculation of the "healthy life years expectancy". This collection includes also tables on employment of disabled persons based on a 2002 *ad hoc* module of the Labour Force survey.

Causes of death is given "according to a shortlist of 65 causes ('Causes of death – European shortlist', based on the ICD – International Statistical Classification of Diseases and Related Health Problems, WHO). Data are available at national and regional level (NUTS 2) for total number, crude death rates (CDR) and standardised death rates (SDR), broken down by age groups and by sex."

Data is updated on a somewhat regular basis (for example: survey data are available 18 months after survey completion) and data are collected at the individual level. Data tables and data sources, including meta-data analysis, are available on the Eurostat website.

How we classified this case on our Performance Measurement Ladder? (Appendix 1)
OPHS Areas involved: Chronic Disease Prevention; Injury and Substance Misuse Prevention
Level:
4I-c The data are available publicly
4II-f Used within the independent organization to promote better practices or quality improvements
Sources:
European Commission: Eurostat. Public Health Statistics available at:
http://epp.eurostat.ec.europa.eu/portal/page/portal/health/public_health

D5: ECDC (European Centre for Disease Prevention and Control)

The European Centre for Disease Prevention and Control (ECDC) is a centralized body that collects and reports on infectious disease occurrence and vaccination for member countries of the European Union. The ECDC identifies three main messages in respect to surveillance data in Europe:

1. Surveillance is essential to understanding the epidemiology of infectious disease
2. European Surveillance adds value to health
3. Surveillance data provides evidence for effective public health response.

Data is updated on a regular basis (some reports are updated and released weekly) and is available publicly on their website. Geographic images are available for country-to-country comparison. Data is submitted by a chosen representative from each member state into TESSy (The European Surveillance System), which allows for centralized data collection and analysis.

How we classified this case on our Performance Measurement Ladder? (Appendix 1)
OPHS Areas involved: Infectious Disease Prevention; Sexual Health, STIs, and Blood-borne Infection Prevention, Tuberculosis Prevention, Vaccine Preventable Diseases
Level:
4I-c The data are available publicly
4II-f Used within the independent organization to promote better practices or quality improvements
4II-g Used as a management tool to compare and pull out poor or good performers through the public availability of the data, hoping organization would improve its performance when it compares itself against other jurisdictions
Sources:
European Centre for Disease Prevention and Control. Website: http://ecdc.europa.eu/en/Pages/home.aspx.

D6: Developing a national performance indicator framework for the Dutch Health System

This paper does not offer indicators that overlap with Public Health strategies in Ontario, but is included because it offers methodological insight on developing a balanced scorecard performance measurement system for a public health system. The authors chose four domains for the scorecard: Financial perspective, Internal business processes perspective, Consumer perspective and Innovation perspective. The authors suggest that their approach offers a platform for future development of performance measurement and management tools that focus on needs assessment, public goals and engagement of all health actors. The authors also suggest that by examining the health system, connections may be made between determinants of health and the impact the health system has on such things. This paper provides a methodological basis for those interested in developing a performance management tool for a public health system.

How we classified this case on our Performance Measurement Ladder? (Appendix 1)
OPHS Areas involved: Not applicable
Sources:
Ten Asbroek AHA, Arah OA, Geelhoed J, Custer T, Delnoij DM & Klazinga NS. Developing a national performance indicator framework for the Dutch health system. *International Journal for Quality in Health Care* 2004; 16(Supp. 1): i65-i71.

D7: WISE (Water Information System for Europe)

The Water Information System for Europe (WISE) compiles a number of data and information sources that are collected at the European Union level by various bodies and institutions. The WISE viewer provides a central location where geographically-mapped information on water-related issues can be found for European Union countries. Reports of River Basin Water, Marine Environment, Flood Risk, Water scarcity, Drinking water, Bathing water and water pollution are available.

How we classified this case on our Performance Measurement Ladder? (Appendix 1)
OPHS Areas involved: Water Safety
Level:
4I-c The data are available publicly
4II-g Used as a management tool to compare and pull out poor or good performers through the public availability of the data, hoping organization would improve its performance when it compares itself against other jurisdictions
Sources:
Water Information System for Europe. Website: http://water.europa.eu/en/welcome.

D8: WHO Europe guidelines for indoor air quality: dampness and mould

WHO has published a comprehensive review of the scientific evidence on health problems associated with mould and other indoor biological events, which include increased prevalence of respiratory symptoms, allergies and asthma. The document summarizes the available information on the conditions that determine the presence of mould and measures to control their growth indoors. WHO offers guidelines for protecting public health emerging from this review, but it does not appear to be used yet for performance management.

How we classified this case on our Performance Measurement Ladder? (Appendix 1)
OPHS Areas involved: Health Hazard Prevention (Indoor Air Quality)
Level:
1 Goals defined for this category, but no evidence that indicators have been developed; data collection does not appear to be taking place
Sources:
World Health Organization, 2009. *WHO guidelines for indoor air quality: Dampness and mould*. Druckpartner Moser; Germany. Available from http://www.euro.who.int/__data/assets/pdf_file/0017/43325/E92645.pdf.

D9: EMCDDA (European Monitoring Centre for Drugs and Addiction)

The European Monitoring Centre for Drugs and Addiction (EMCDDA) exists to provide the European Union and its member states with accurate information on problems arising from illicit drug use, and potential responses. There are five key indicators:

- General population surveys (GPS) (which are used to obtain information on drug use among the general population)
- Problem drug use (PDU) (which collects data on the prevalence and incidence of problem drug use at national and local level)
- Treatment demand indicator (TDI) (which is used to describe the population of problem drug users entering treatment)

- Drug-related deaths and mortality (DRD) (which obtains statistics on the number and characteristics of people who die as a consequence of drug use)
- Drug-related infectious diseases (DRID) (which collects data on the extent of infectious diseases — primarily HIV, hepatitis C and hepatitis B infection — among people who inject drugs).

The website includes a toolbox with extensive information about the indicators, how they are collected, and how they might be used.

How we classified this case on our Performance Measurement Ladder? (Appendix 1)
OPHS Areas involved: Injury and Substance Misuse Prevention; Sexual Health, STIs and Blood-Borne Infection Prevention
Level:
4I-c The data are available publicly
4II-f Used within the independent organization to promote better practices or quality improvements
4II-g Used as a management tool to compare and pull out poor or good performers through the public availability of the data, hoping organization would improve its performance when it compares itself against other jurisdictions
Sources:
European Monitoring Centre for Drugs and Drug Addiction. Website: http://www.emcdda.europa.eu/. See in particular http://www.emcdda.europa.eu/themes/key-indicators.

E: US: Overview

The OECD estimates that the US spent 16.0% of GDP on health care in 2008; 46.5% of expenditures were from public sector sources (OECD 2010).

Public health in the US is highly decentralized. A report to the US Congress (Lister 2005) noted that "The U.S. public health system comprises a wide array of governmental and nongovernmental entities, including: over 3,000 county and city health departments and local boards of health; 59 state and territorial health departments; tribal health departments; more than 160,000 public and private laboratories; parts of multiple federal departments and agencies; hospitals and other healthcare providers; and volunteer organizations such as the Red Cross."

At the national level, the Department of Health and Human Services (HHS) works closely with state and local governments to oversee the administration of public health in the United States. The Centers for Disease Control and Prevention (CDC) has a major coordinating role in the detection, investigation, and prevention of disease and injury. Within the states, there is considerable variation in how much authority states delegate to local governments.

The US differs from most other OECD countries in that it does not have universal coverage. Public health accordingly plays a greater role in providing services to vulnerable populations than is the case in most other jurisdictions.

Sources

Lister S. (2005) *An Overview of the U.S. Public Health System in the Context of Emergency Preparedness*. Congressional Research Service Report to Congress. Available from http://www.fas.org/sgp/crs/homesec/RL31719.pdf.

Organisation for Economic Co-operation and Development. (2010). *How does the United States compare*. OECD Health Data 2010, Paris, France. Available from http://www.oecd.org/dataoecd/19/60/45554902.pdf.

E1: Public Health Improvement Resource Center

The Public Health Improvement Resource Center provides resources and tools for evaluating and building the capacity of public health systems. More than 100 accessible resources organized here support the initiation and continuation of quality improvement efforts. These resources promote performance management and quality improvement, community health information and data systems, accreditation preparation, and workforce development. The Centers for Disease Control and Prevention (CDC) and PHF provide funding for this site. The current indicators fall under these categories:

- Demographics
- Summary Measures of Health
- National Leading Causes of Death
- Measures of Birth and Death
- Relative Health Importance

- Vulnerable Populations
- Environmental Health
- Preventive Services Use
- Risk Factors for Premature Death
- Access to Care

How we classified this case on our Performance Measurement Ladder? (Appendix 1)
OPHS Areas involved: Chronic Disease Prevention; Injury and Substance Misuse Prevention; Reproductive Health; Child Health; Infectious Disease Prevention; Sexual Health, STIs and Blood-borne infection Prevention; Health Hazard Prevention
Level
4I-c The data are available publicly
4II-g Used as a management tool to compare and pull out poor or good performers through the public availability of the data, hoping organization would improve its performance when it compares itself against other jurisdictions
Sources
Public Health Improvement Resource Center. Website: http://www.phf.org/improvement/.

E2: Performance Management Collaborative

The Performance Management Collaborative consists of a seven state core of Illinois (lead state), Missouri, West Virginia, New Hampshire, New York, Alaska, and Montana. Five additional partners include the Association of State and Territorial Health Officers, the National Association of County and City Health Officials, the Centers for Disease Control and Prevention, the Health Resources and Services Administration, and the Association of State and Territorial Local Health Liaison Officials. It is also known as the Turning Point Program.

It defines performance management as the practice of actively using performance data to improve the public's health. This practice involves strategic use of performance measures and standards to establish performance targets and goals, to prioritize and allocate resources, to inform managers about needed adjustments or changes in policy or program directions to meet goals, to frame reports on the success in meeting performance goals, and to improve the quality of public health practice. Performance Management components include:

Performance Standards - establishment of organizational or system performance standards, targets and goals and relevant indicators to improve public health practice;

Performance Measures - application and use of performance indicators and measures;

Reporting of Progress - documentation and reporting of progress in meeting standards and targets and sharing of such information through feedback;

Quality Improvement - establishment of a program or process to manage change and achieve quality improvement in public health policies, programs or infrastructure based on performance standards, measurements and reports.

A Performance Management System is the continuous use of all the above practices so that they are integrated into the organization's core operations. Performance management can be carried out at multiple levels, including the program, organization, community, and state levels.

This Collaborative has provided case studies and other efforts to share learning, but is not itself a performance management example.

How we classified this case on our Performance Measurement Ladder? (Appendix 1)
OPHS Areas involved: Not applicable
Sources:
Turning Point. Performance Management Collaborative. Website:
http://www.turningpointprogram.org/Pages/perfmgt.html.

E3: Healthy people 2010

In January 2000, the Department of Health and Human Services launched Healthy People 2010, a comprehensive, nationwide health promotion and disease prevention agenda. It had 467 objectives. The most recent update, available on their website, contains the following 28 focus areas, designed to serve as a framework for improving the health of all people in the United States during the first decade of the 21st century.

1. Access to Quality Health Services
2. Arthritis, Osteoporosis and Chronic Back Conditions
3. Cancer
4. Chronic Kidney Disease
5. Diabetes
6. Disability and Secondary Conditions
7. Educational and Community-Based Programs
8. Environmental Health
9. Family Planning
10. Food Safety
11. Health Communication
12. Heart Disease and Stroke
13. HIV
14. Immunizations and Infectious Diseases
15. Injury and Violence Prevention
16. Maternal, Infant, and Child Health
17. Medical Product Safety
18. Mental Health and Mental Disorders
19. Nutrition and Overweight
20. Occupational Safety and Health
21. Oral Health
22. Physical Activity and Fitness
23. Public Health Infrastructure
24. Respiratory Diseases
25. Sexually Transmitted Diseases
26. Substance Abuse
27. Tobacco Use
28. Vision and Hearing

"A selected set of objectives, known as the Leading Health Indicators, was created to help identify sentinel measures of public health, and to encourage wide participation in improving health in the next decade. These indicators were chosen based on their ability to motivate action, the availability of data to measure their progress, and their relevance as broad public health issues." This project has some similarities to other compendiums; the website notes that it gathers national data "from more than 190 different data sources, from more than seven Federal Government Departments (including Health and Human Services, Commerce, Education, Justice, Labor, Transportation, and the Environmental Protection Agency), and from voluntary and private non-governmental organizations. To the extent appropriate, data for the objectives are provided for subgroups defined by relevant dimensions such as sociodemographic subgroups of the population, health status, or geographic classifications."

The main role is the provision of data. Implementation is not a goal, since NCHS does not control many of the services that would be needed to achieve the goals. As the website notes, "Because these objectives are national, not solely Federal, their achievement is dependent in part on the ability of health agencies at all levels of the government and on non-governmental organizations to assess objective progress. To inform that effort, NCHS maintains an online update of the November 2000 publication, Tracking Healthy People 2010. This report includes technical information on general data issues and major data sources, detailed definitions for each objective, and additional resources."

Data are made available through DATA2010, an interactive database system accessible through the NCHS web site and the CDC WONDER system. A large number of reports are also included on the website, including updates for each.

How we classified this case on our Performance Measurement Ladder? (Appendix 1)
OPHS Areas involved: Chronic Disease Prevention; Injury and Substance Misuse Prevention; Reproductive Health; Child Health; Infectious Disease Prevention; Sexual Health, STIs and Blood-borne Infection Prevention; Vaccine Preventable Diseases; Food Safety; Health Hazard Prevention. (Tuberculosis is among the diseases listed under Immunization and Infectious Diseases, but much of the table just indicates that the data are not collected.)
Level
4I-c The data are available publicly
4II-g Used as a management tool to compare and pull out poor or good performers through the public availability of the data, hoping organization would improve its performance when it compares itself against other jurisdictions
Sources:
Centers for Disease Control and Prevention. About Healthy People 2010. Website:
http://www.cdc.gov/nchs/healthy_people/hp2010.htm

E4: Chronic Disease Prevention and Health Promotion

The Centre for Disease Control and Prevention (CDC) includes a National Center for Chronic Disease Prevention and Health Promotion. This body engages in surveillance activities in order to: collect data to better understand the extent of health risk behaviours, preventive care

practices and the burden of chronic disease; monitor the progress of prevention efforts; help public health professionals and policymakers make more timely and effective decisions. The centre's surveillance activities provide data and statistics relevant to each of its program areas. Listed below are several examples of the CDC's major chronic disease surveillance systems.

E4.1: Behavioral Risk Factor Surveillance System

This is a large state-based system of telephone health surveys; it tracks risks in the United States. Available resources include the following: *Prevalence and Trends Data* (state-level estimates that can be compared to other states and grouped by selected demographics. This data can also be used to observe state-level trends in the prevalence of certain health risk behaviors); *SMARTData* (which health professionals can use to view local area estimates and statewide "Quick View" charts); *BRFSS Maps* (displaying state and local level estimates); *Annual Survey Data; BFRSS Questionnaire page* and *WEAT* a web enabled analysis tool that provides cross tabulation analyses and logistic analyses.

How we classified this case on our Performance Measurement Ladder? (Appendix 1)
OPHS Areas involved: Chronic Disease Prevention
4I-c The data are available publicly
4II-e Regulatory approach (the data are used by regulators, *e.g.*, closing a restaurant or pool)
Sources:
Centers for Disease Control and Prevention. Behavior Risk Factor Surveillance System. Website: http://www.cdc.gov/brfss/.

E4.2: CDC's Chronic Disease Indicators

Chronic Disease Indicators (CDI) is a cross-cutting set of 97 indicators that were developed by consensus to allow states and territories to uniformly define, collect, and report chronic disease data. CDI are divided into eight categories that represent a wide spectrum of condition and risk factors, including: physical activity and nutrition, tobacco and alcohol use, cancer, cardiovascular disease, diabetes, arthritis, overarching conditions, and other diseases and risk factors. The Council of State and Territorial Epidemiologists (CSTE) originally worked with epidemiologists and chronic disease program directors at the state and federal level to select, prioritize and define 73 chronic disease indicators. The most recent indicators were established in 2002. For each indicator consistent methods for conducting analyses were established to provide data that can be compared across geographic areas. Surveillance data are available for the majority of states and large metropolitan areas. A comprehensive definition of the indicators were established by considering the following elements: demographic group; numerator and denominator; measure of frequency; time period for case definition; background; significance; limitations of indicator; data resources; limitation of data resources; and *Healthy People 2010* objectives. The definitions of the indicators can be found on the website.

Examples of Uses

The Chronic Disease Indicators have been used by various states to facilitate and standardize surveillance of public health. For example, in Colorado the indicators were used to develop two reports on chronic disease, *Chronic Disease Indicator Report,* and *Moving Mountains: Revisiting Trends in Colorado's Health and Health Care Spending Through Investments in Chronic Disease Prevention*. Georgia has used these indicators as part of its Online Analytical Statistical Information System (OASIS) which "is currently populated with Vital Statistics (births, deaths, infant deaths, fetal deaths, induced terminations), Georgia Comprehensive Cancer Registry, Hospital Discharge, Emergency Room Visit, Arboviral Surveillance, Risk Behavior Surveys (Youth Risk Behavior Survey (YRBS), and Behavioral Risk Factor Surveillance Survey (BRFSS)), STD, and Population data." Maine has developed a *Healthy Maine 2010* website with 2002 data and 2005 updates (much of the data comes from census data). Many other states are using these indicators in a similar manner.

At the national level, the CDC used these indicators to develop a resource tool called the Diabetes Indicators and Data Sources Internet Tool, which contains 38 diabetes indicators and lists associated national, state and state-specific data sources. It is designed to assist diabetes programs with their surveillance and epidemiological activities. These indicators also provided a model for the CDC Division of Oral Health to develop the National Oral Health Surveillance System (NOHSS). NOHSS includes indicators of oral health, information on state dental programs, and links to other important sources of oral health information.

How we classified this case on our Performance Measurement Ladder? (Appendix 1)
OPHS Areas involved: Chronic Disease Prevention
4I-c The data are available publicly
4II-e Regulatory approach (the data are used by regulators, *e.g.*, closing a restaurant or pool)
Sources:

Colorado Department of Public Health and Environment. (no date) *Colorado Chronic Diseases Indicators Report*. Available from http://www.cdphe.state.co.us/ps/chronicdisease/ColoradoChronicDiseaseIndicatorsTechnicalReport.pdf

Colorado Department of Public Health and Environment. (no date) *Moving Mountains: Reversing Trends in Colorado's Health and Health Care Spending Through Investments in Chronic Disease Prevention*. Available from http://www.cdphe.state.co.us/ps/chronicdisease/ColoradoChronicDiseaseSummaryReport.pdf

Georgia. OASIS (Online Analytical Statistical Information System. Website: http://oasis.state.ga.us/index.aspx

Maine Center for Disease Control & Prevention. *Healthy Maine 2010*. Reports available from: http://www.maine.gov/dhhs/boh/phdata/healthy_maine.htm

National Center for Chronic Disease Prevention and Health Promotion. Chronic Disease Indicators
Definitions: Website: http://apps.nccd.cdc.gov/cdi/DefSearchResults.aspx
Overview. Website: http://www.cdc.gov/nccdphp/CDI/overview.htm
Diabetes Data and Trends: http://apps.nccd.cdc.gov/ddtstrs/

E4.3: National Assisted Reproductive Technology Surveillance System (NASS)

To fulfill the mandate of the Fertility Clinic Success Rates and Certification Act of 1992, CDC maintains a surveillance system designed to collect information on Assistive Reproductive Technology (ART) treatment outcomes from all infertility clinics in the United States, and publishes an annual report. Data collected includes patient profile, reasons for ART treatment, type of ART procedure, treatment outcomes, and clinic contact information.

CDC's Division of Reproductive Health is responsible for the surveillance and research in women's health and fertility, adolescent reproductive health, and safe motherhood. In response to Congressional mandate, CDC began working to strengthen existing data collection efforts initiated by the American Society for Reproductive Medicine (ASRM) and the Society for Assisted Reproductive Technology (SART) to develop a national system for monitoring ART use and outcomes. The website has published success rates by clinic since 1997; the most recent report is for 2008.

How we classified this case on our Performance Measurement Ladder? (Appendix 1)
OPHS Areas involved: Reproductive Health
Level
4I-c The data are available publicly
4II-g Used as a management tool to compare and pull out poor or good performers through the public availability of the data, hoping organization would improve its performance when it compares itself against other jurisdictions
Sources:
Centers for Disease Control and Prevention. *Assisted Reproductive Technology (ART)* Website
http://www.cdc.gov/art/NASS.htm
Annual ART Success Rates Reports. http://www.cdc.gov/art/ARTReports.htm

E5: The Food Safety Office (FSO)

The Food Safety Office (FSO) works to prevent illness, disability and death caused by foodborne diseases. FSO is an organization within CDC and it supports projects that build epidemiology, laboratory and environmental health capacities on the state and local levels. The FSO also provides information and recommendations based on public health surveillance that have implications for food safety policies. It also maintains links with the US Food and Drug Administration and the US Department of Agriculture. The FSO works to evaluate and improve food monitoring programs through external peer reviews, case research projects and after action reviews. The FSO has been setting up a series of monitoring and surveillance systems, often in collaboration with other stakeholders. These are listed on the Food Safety Office Programs and Activities webpage, and include:

CaliciNet—an electronic system developed to fingerprint human caliciviruses that may cause foodborne outbreaks. When fully implemented, this system will allow participating health department laboratories to directly input information from strains identified in their laboratories

and receive immediate notification if a match is detected. This system will help public health officials more quickly identify contaminated food products associated with outbreaks.

CIFOR-- The Council to Improve Foodborne Outbreak Response (CIFOR) is a multidisciplinary working group convened to increase collaboration across relevant areas of expertise to reduce the burden of foodborne illness in the United States. CIFOR has developed and produced Guidelines for Foodborne Outbreak and Response (CIFOR 2009). This publication provides consensus guidelines for the overall approach to foodborne disease outbreaks, including preparation, detection, investigation, control, and follow-up. The Guidelines also describe the roles of all key organizations in foodborne disease outbreaks. The CIFOR Food Safety Clearinghouse is an online repository offering food safety resources developed by state and local health departments, laboratories, academic institutions, non-governmental organizations, and governmental agencies.

Diagnosis and Management of Foodborne Illnesses—CDC collaborated with the American Medical Association, the American Nurses Association, the Food and Drug Administration (FDA), and the USDA's Food Safety & Inspection Service (FSIS) to create Diagnosis and Management of Foodborne Illnesses: A Primer for Health Care Providers . The CME was developed to help health professionals recognize, diagnose, treat and report foodborne illness.

DPDx—a website developed and maintained by CDC's Division of Parasitic Diseases. The goal of DPDx is to use the Internet to strengthen diagnosis of parasitic diseases both in the United States and abroad through the interactive and rapid exchange of information permitted by the Internet, allied with already available diagnostic reference resources.

Foodborne Outbreak Response and Surveillance Unit provides outbreak reports and publications, an investigation toolkit, and reporting forms.

FoodNet—the Foodborne Diseases Active Surveillance Network provides a network for responding to new and emerging foodborne diseases of national importance, monitoring the burden of foodborne diseases, and identifying the sources of specific foodborne diseases. FoodNet is a collaborative project among CDC, nine state health departments, the Food Safety and Inspection Service (FSIS) of the United States Department of Agriculture (USDA), and the Food and Drug Administration (FDA).

National Outbreak Reporting System (NORS) is CDC's internet-based system for state health departments to report outbreaks of gastrointestinal illness involving foodborne, waterborne, and direct person to person transmission.

PulseNet is a national network of public health laboratories that performs DNA "fingerprinting" on bacteria that may be foodborne. The network permits rapid comparison of these "fingerprint" patterns through an electronic database at CDC. The DNA "fingerprinting" method is called pulsed-field gel electrophoresis (PFGE).

How we classified this case on our Performance Measurement Ladder? (Appendix 1)
OPHS Areas involved: Food Safety

Level
4I-c The data are available publicly
4II-e Regulatory approach (the data are used by regulators, *e.g.*, closing a restaurant or pool)
Sources:
Centers for Disease Control and Prevention. Food Safety Office. Website: http://www.cdc.gov/foodsafety/food-safety-office.html
Council to Improve Foodborne Outbreak Response (CIFOR). 2009. *Guidelines for Foodborne Disease Outbreak Response.* Atlanta: Council of State and Territorial Epidemiologists, Available from http://www.cifor.us/CIFORGuidelinesProjectMore.cfm
See also:
Food Safety Office Programs and Activities. Website: http://www.cdc.gov/foodsafety/activities.html
CIFOR website. http://www.cifor.us/index.cfm
Food Safety Clearinghouse. http://www.cifor.us/clearinghouse/keywordsearch.cfm

E6: Immunization Safety Office

CDC's Immunization Safety Office (ISO) has a mandate to ensure vaccine safety. One component is a safety monitoring research system.

The Vaccine Adverse Event Reporting System (VAERS) provides postmarketing surveillance on childhood and adolescent vaccines that protect against 16 diseases and adult vaccines that protect against 13 diseases. VAERS data is available to the public, but without identifying data. The FDA and CDC also use this data to follow up suspected adverse reactions. The Vaccine Safety Datalink (VSD) Project collects vaccination data, in collaboration with 8 managed care organizations, on 5.5 million people. The information tends to be disseminated through publishing scientific articles. Other collaborations work to standardize case definitions and clarify mechanisms and risks of adverse events.

How we classified this case on our Performance Measurement Ladder? (Appendix 1)
OPHS Areas involved: Vaccine Preventable Diseases
4I-c The data are available publicly
Sources:
Centers for Disease Control and Prevention. About the Immunization Safety Office. http://www.cdc.gov/vaccinesafety/Activities/About_ISO.html
Vaccine Adverse Event Reporting System. Website: http://www.cdc.gov/vaccinesafety/Activities/VAERS.html
Vaccine Safety Datalink (VSD) Project. Website: http://www.cdc.gov/vaccinesafety/Activities/VSD.html

F: Saskatchewan: Overview

The OECD estimates that Canada spent 10.4% of GDP on health care in 2008; 70.2% of expenditures were from public sector sources (OECD 2010). Health care is a provincial responsibility. About 70% is publicly funded, including most hospital and physician care. Delivery is largely private, using a public contract model. Saskatchewan has regionalized care.

Since 2002, most responsibility for delivering health services in Saskatchewan falls to the 12 Regional Health Authorities. Their major areas of responsibility include: Hospitals; Health centres, wellness centres, and social centres; Emergency response services, including first responders, ambulance; Supportive care, such as long-term care, day programs, respite, palliative care and programs for patients with multiple disabilities; Home care; Community health services, such as public health nursing, public health inspection, dental health, vaccinations, and speech pathology; Mental health services; and Rehabilitation services. As noted, these may be delivered by private providers. Cancer care is provided by a provincial agency.

The provincial Minister of Health retains responsibility for funding the regions. The province has also set up formal accountability expectations, as described in case example F5.

The Population Health Branch of Saskatchewan Health works with departments and organizations to implement strategies to provide and promote healthy living as well as support healthy public policy. As the public health and health care system in Saskatchewan are similar to the Ontario system, examples of performance measurement in public health in Saskatchewan provide a potential learning opportunity for Ontario when developing their own performance measurement systems.

Sources:

Government of Saskatchewan. *Health System*. Website http://www.health.gov.sk.ca/health-system
Health System Statistics. http://www.health.gov.sk.ca/health-system-statistics
Population Health http://www.health.gov.sk.ca/ph_br_population_health.html

Marchildon, G. P. (2005). *Health systems in transition: Canada (Vol. 7)*. Copenhagen, Denmark: World Health Organization, European Observatory on Health Systems and Policies. Available from http://www.euro.who.int/__data/assets/pdf_file/0009/80568/E87954.pdf

Organization for Economic Cooperation and Development. (2010). *OECD Health data 2010: How does Canada compare?* Paris, France, May. Available from: http://www.oecd.org/dataoecd/46/33/38979719.pdf

F1: Saskatchewan Public Health

The Saskatchewan Health Report on Public Health and Population Health Services (2001) was designed to provide a detailed framework on the types of services that should be provided by the health districts and to suggest indicator measures for measuring improvements over time. Health District CEOs, public health professionals as well as other key stakeholders were involved in the development of the recommendations. The framework outlines four main

public health programs: Healthy Families, Chronic Disease Prevention, Safe Communities/ Environments and Communicable Disease Control. The strategies within this document align with many of the strategies outlined in Ontario's Public Health Standards. As of December, 2010, this document does not appear to have been updated or implemented. The web site still links to it as their vision statement.

How we classified this case on our Performance Measurement Ladder? (Appendix 1)
OPHS Areas involved: Chronic Disease Prevention; Injury and Substance Misuse Prevention; Reproductive Health; Child Health; Infectious Disease Prevention; Rabies Prevention; Sexual Health, STIs, and Blood-borne Infection Prevention; Tuberculosis Prevention; Vaccine Preventable Diseases; Food Safety; Water Safety; Health Hazard Prevention; Emergency Preparedness
Level
2. Goals and indicators defined for this category, but data collection does not appear to be taking place
(For Food safety, see case example F3)
Sources:
Saskatchewan Health. (2001). *Public health / population health services in Saskatchewan.*.
Available from http://www.health.gov.sk.ca/phb-phs-services

F2: Saskatchewan Environment

Saskatchewan Environment is a provincial department responsible for protecting and managing Saskatchewan's environment and natural resources. The department is responsible for the management of parks, Crown land, fish and wildlife, as well as forest fires. It is also responsible for the prevention of pollution of provincial air, water and land. This is accomplished through a series of environmental inspections that includes air quality and drinking water monitoring. The 2007-2008 budget report from Saskatchewan Environment includes a performance plan with a list of indicators that could be used to measure the health of the environment. Indicators include objectives regarding safe and sustainable drinking water and wastewater systems, reduction in the impact to surface and groundwater quality, and the reduction of risks to people from polluted air and land. This report provides an example of indicators that could be used for environmental public health with potential data collection that could be used in the development of a performance measurement system.

How we classified this case on our Performance Measurement Ladder? (Appendix 1)
OPHS Areas involved: Water Safety; Health Hazard Prevention
Level
2: Goals and indicators defined for this category, but data collection does not appear to be taking place
Sources:
Saskatchewan Environment. http://www.environment.gov.sk.ca/
See also Saskatchewan Provincial Budget 2007-2008: Performance Plan. Available from http://www.environment.gov.sk.ca/adx/aspx/adxGetMedia.aspx?DocID=549,543,94,88,Documents&MediaID=224&Filename=2007-08+PerformancePlan.pdf&l=English

F3: Saskatchewan Health Food Safety Regulations

The Food Safety Regulations, published by the public health department of Saskatchewan, outline the requirements that food producers, vendors and providers should meet. Public Health officers conduct inspections on food premises to ensure people in the food services are meeting the requirements outlined in the Food Safety Regulations. Some of these reports, such as restaurant inspections, are availably publicly on the Saskatchewan Health website. All of the inspection items are outlined in the Food Safety Regulations document and include topics such as sanitation, hygiene, food storage, food licensing, items in contact with food, food handling and personnel. The public reports outline critical and general items of concern for each inspection conducted. The Food Safety Regulations provide a good example of regulatory performance indicators that could be used in public health inspection and measurement systems.

One example where public information is available is Restaurant Inspection. A pull down menu is available giving the results of the most recent inspection report. The web site includes the following disclaimers: "There are approximately 5,000 restaurant-type facilities in Saskatchewan. These facilities are subject to inspection by the regional health authority (health region) public health officers who inspect the facility to determine compliance with The Food Safety Regulations and standards. This online service provides the public with a public health inspection summary concerning the results of each inspection….Public health inspection summary information is available online for restaurant type facilities, *e.g.*, dining rooms, fast food outlets, caterers, mobile food vendors, ice cream stands, concession booths, public cafeterias, retail stores with extensive food preparation and similar establishments….This site includes information from the three most recent inspection reports beginning October 1, 2008 and does not contain information related to any enforcement action taken by the health region….Only unsatisfactory items observed by the public health officer at the time of inspection are identified in these reports….These inspection summaries are not intended to guarantee the conditions of a restaurant at all times and should not be relied upon for that purpose….Restaurants listed on this site are operating with a valid licence and are considered to be safe to operate at the time of the last inspection….Information about restaurants that are no longer in operation is not available online."

How we classified this case on our Performance Measurement Ladder? (Appendix 1)
OPHS Areas involved: Food Safety
4I-c The data are available publicly
4II-f Used within the independent organization to promote better practices or quality improvements
Sources:
Saskatchewan. Food Safety. http://www.health.gov.sk.ca/food-safety
See also Online Restaurant Inspection Information. Website:
http://www.health.gov.sk.ca/restaurant-inspections
Saskatchewan Public Health. *The food safety regulations*. ChapterP-37.1 Reg 12. Available at:
http://www.qp.gov.sk.ca/documents/English/Regulations/Regulations/P37-1R12.pdf

F4: Saskatchewan Safe Drinking Water Strategy

The Safe Drinking Water Strategy is published by the Ministry of Environment in Saskatchewan and is designed as a plan of action to protect Saskatchewan's drinking water supply. Several agencies within the Saskatchewan government are involved in the development and implementation of the strategy, especially departments responsible for water inspection and quality enforcement. The vision of the strategy, as described in the performance plan, is "a sustainable, reliable, safe and clean supply of drinking water that is valued by the citizens of Saskatchewan." The performance plan outlines indicators and measures that can be taken to achieve this vision. The 2007-2008 ministerial budget report includes a comprehensive list of indicators that could be used to measure the quality of several different water sources. Indicators include objectives in drinking water regulation, staff training, drinking water infrastructure and drinking water quality. All of these indicators are reported on annually in the Drinking Water Annual Report, on the Ministry of Environment website. The indicators described provide an example of indicators that could be used for environmental public health with potential data collection that could be used in the development of a performance measurement system.

How we classified this case on our Performance Measurement Ladder? (Appendix 1)
OPHS Areas involved: Water Safety
Level
4I-c The data are available publicly
4II-e Regulatory approach (the data are used by regulators, *e.g.*, closing a restaurant or pool)
4II-f Used within the independent organization to promote better practices or quality improvements
Sources:

Government of Saskatchewan. Environment. Drinking Water. http://www.environment.gov.sk.ca/Default.aspx?DN=7bede8e4-739e-4723-acc3-d9a93e1428b2

Safe Drinking Water Strategy. Saskatchewan Provincial Budget 2007-2008: Performance Plan. *Performance Plan for Safe Drinking Water*. Available from: http://www.environment.gov.sk.ca/adx/aspx/adxGetMedia.aspx?DocID=1147,758,253,94,88,Documents&MediaID=555&Filename=Environment+Performance+Plan+-+Safe+Drinking+Water+Strategy+2007-08.pdf&l=English

F5: Performance Management Accountability Indicators

The Performance Management Accountability Indicators framework was developed by Saskatchewan Health to outline the Ministry of Health's expectations for the funding it provides to the Regional Health Authorities and the Saskatchewan Cancer Agency. The indicators are designed to assess whether or not the health authorities and cancer agency are meeting or progressing towards these expectations. The provincial Minister of Health is given responsibility "for assisting regional health authorities and health care organizations in the development of standardized assessment instruments that will allow them to assess their own performance relative to other regional health authorities and health care organizations. This process will identify areas of strength, as well as areas requiring improvement." The documentation notes that both regional health authorities and health care organizations should "formally assess their

performance at least annually, using instruments developed both provincially and locally, as well as through other means. This process will identify areas of strength, as well as areas requiring improvement." It adds that the assessment results should be used by the regions and organizations "to assist in making the changes required to improve performance. Processes should include the opportunity for input into the assessment by other partners."

Ninety out of the approximately 250 total indicators designed for the health authorities and 40 out of the approximately 115 indicators designed for the cancer agency are described in the 2007/2008 version of the framework, which is the latest publicly available version of the document. Each indicator is assessed for its reliability and validity, whether it is sensitive and specific, easily understood, feasible to obtain, comparable across jurisdictions, actionable, provide a clear direction for change, and whether there is minimal overlap and duplication. The indicators are divided between Regional Health Authority indicators and Saskatchewan Cancer Agency indicators. Indicators are inclusive to the services provided by the organization, including community and population health services, and measure both the processes and outcomes of health care. Within the framework document, a description is given for each indicator, including how to calculate the measure and what data should be collected for each indicator.

Most of the indicators are focused on acute care. There are some related to individually based prevention (*e.g.*, participation in screening programs for such conditions as cervical cancer). Population Health Services indicators also include some related to immunization and tobacco control, and some disease prevalence indicators.

How we classified this case on our Performance Measurement Ladder? (Appendix 1)

OPHS Areas involved: Chronic Disease Prevention; Injury and Substance Misuse Prevention; Reproductive Health; Child Health; Infectious Disease Prevention; Sexual health, STIs, and Blood-borne Infection Prevention; Vaccine Preventable Diseases

4I-b The data are moving up through the levels of the organization or government

4II-f Used within the independent organization to promote better practices or quality improvements

Sources:

Saskatchewan Ministry of Health Policy & Procedure Manual (2009). *Roles and Expectations of the Minister of Health and Saskatchewan's Regional Health Authorities and Health Care Organizations*. Available from http://www.health.gov.sk.ca/rha-roles-expectations

For the Performance Management Accountability Indicators, 2008 see: http://www.health.gov.sk.ca/performance-accountability-07/08

For the Performance Management Accountability Indicators, 2007 see http://www.health.gov.sk.ca/performance-accountability-06/07

For the Performance Management Accountability Indicators, 2006 see http://www.health.gov.sk.ca/adx/aspx/adxGetMedia.aspx?DocID=1224,94,88,Documents&MediaID=757&Filename=performance-mgmt-accountability-indi-05-06.pdf&l=English

F6: Health Service and Outcome Indicators Project

The purpose of this report was to provide an overview of the Health Service and Outcome Indicators Project that was conducted by Saskatchewan Health in 1996. The report provides a summary of the indicators developed to provide a province-wide overview of health status and health service delivery and utilization. There is no apparent follow-up or update to this report; however, the indicators and suggested data sources may still be a useful example or model of a potential performance framework.

The framework was developed by a working group of key stakeholders. Three dimensions were identified within the framework: Steps to Good Care, Satisfaction, and Results. The Steps to Good Care and Results dimensions focus on the processes and outcomes of the health care system. The framework suggests that by impacting the process of care, patient satisfaction and results can be improved.

Indicators were chosen based on their usefulness, feasibility, validity, reliability and overall screening of the full spectrum of the continuum of care for a set of indicators. Potential data sources are suggested for each indicator listed within the report. The report classifies the potential indicators by 4 population groups: Mothers and Infants, Children and Youth, Adults, and Seniors. Many of the indicators focus on clinical outcomes, but some deal with areas also in the Ontario Public Health Standards.

How we classified this case on our Performance Measurement Ladder? (Appendix 1)
OPHS Areas involved: Chronic Disease Prevention; Injury and Substance Misuse Prevention; Reproductive Health; Child Health; Infectious Disease Prevention; Sexual Health, STIs and Blood-borne Infection Prevention; and Vaccine Preventable Diseases.
Level
Level 2: Goals and indicators defined for this category, but data collection does not appear to be taking place
Sources:
The Saskatchewan Health Services Indicators Framework. Available from
http://www.health.gov.sk.ca/health-service-indicators-framework

F7: Comparable Health Indicators

In 2000, the Canadian First Ministers directed the provincial/territorial and federal governments to collaborate and develop a framework to allow comparison of health indicators within a context of comprehensive and regular public reporting. The commitments were reiterated in the 2003 and 2004 Health Accords. The indicators were intended to cover health status, health outcomes, and quality of service.

A series of Comparable Health Indicators Reports have been released, beginning in 2002. There is some variation in the number of indicators, and in which ones must be reported.

Provinces have flexibility to add indicators. Data on 70 indicators are available on websites hosted by CIHI and Statistics Canada. The data can also be accessed on Health Canada's website.

The 70 indicators given on-line are divided into the following categories: Primary health care; Home care; Other programs and services; Catastrophic drug coverage and pharmaceutical management; Diagnostic and medical equipment; Health human resources; and Healthy Canadians. This last category is most germane to public health, and includes time series data for: life expectancy, infant mortality, low birth weight, mortality rates and five-year survival rates for selected diseases, potential years of life lost due to suicide and unintentional injury, incidence rates for several infectious diseases, smoking, and immunization for influenza among those over age 65. Subsequent reports are available from CIHI; the most recent report is for 2010, but is heavily focused on acute care.

Saskatchewan has posted two comparable health indicators reports on its website (for 2002 and 2004). The 2004 report comments on the changes in the number of indicators, writing "A common core set of indicators (18 in total) was chosen by a working group of Federal/ Provincial/ Territorial representatives based on input and feedback obtained from stakeholder consultations, and the general public (Website submissions and focus groups). Saskatchewan has chosen to supplement this common core set that will be reported on by all jurisdictions with an additional six indicators that it feels are of particular interest and importance to people in Saskatchewan, or highlight a particular theme. In total 24 indicators are reported on in 2004 in this written report. In 2002, Saskatchewan reported on 61 indicators out of a total 67 measures that were primarily chosen by one group – the Federal/ Provincial/ Territorial Performance Indicators Reporting Committee (PIRC)." The focus shifted heavily to aggregate measures (*e.g.*, life expectancy) and acute care. The Saskatchewan report also noted "this year 'heart attack' indicators are focused on throughout the report, so for example three indicators which measure different aspects of heart attack care in the province are reported: mortality rates for heart attack (chapter 1); wait times for cardiac bypass surgery (chapter 3 – Access to Care); and in-hospital mortality rates for heart attack (chapter 3 – Quality of Care). This is in addition to the non-medical determinants."

The indicators are grouped into four categories within the Saskatchewan Report: Healthy People, Healthy Practices and Health Places, Health Programs and Health Services; and Healthy Perceptions. While not all of the indicators included in this report overlap with Public Health practices, there are several indicators that do: Cancer Incidence Rates, Incidence Rates of Tuberculosis, Incidence Rates of Select STIs, Exposure to Second-hand tobacco smoke, Physical Activity, Prevalence of Diabetes, Physical Activity, Teen Smoking Rates and Body Weight. Data are taken from both survey and administrative sources. The report includes data trends for core indicators within Saskatchewan and makes comparisons to national averages. Saskatchewan also developed a framework for Health Service and Outcome Indicators, but it is unclear how (or if) this is being used.

How we classified this case on our Performance Measurement Ladder? (Appendix 1)
OPHS Areas involved: Chronic Disease Prevention; Infectious Disease Prevention; Vaccine Preventable Diseases
4I-c The data are available publicly

Sources:

CIHI. Health Indicators. Website: http://www.cihi.ca/CIHI-ext-portal/internet/EN/TabbedContent/health+system+performance/indicators/health/cihi010654

Statistics Canada . Comparable Health Indicators. Website: http://www.statcan.gc.ca/bsolc/olc-cel/olc-cel?catno=82-401-XIE&lang=eng

Health Canada. Reports and Publications. Health Indicators. Website: http://www.hc-sc.gc.ca/hcs-sss/pubs/system-regime/index-eng.php.

Saskatchewan Health. (2004). *Saskatchewan comparable health indicators report 2004*. Government of Saskatchewan, Policy and Planning Branch. Available from http://www.health.gov.sk.ca/indicators-report-2004. See also Health Services and Outcomes Indicators. *http://www.health.gov.sk.ca/health-service-outcome-indicators*

G: British Columbia: Overview

Although health care is a provincial responsibility, British Columbia (BC) has re-organized to use a series of regional health authorities. The province funds them, but the regions are responsible for funding and managing the services in their region. Unlike other provinces, however, BC has set up one regional authority to be responsible for those services which are highly specialized and hence, in their view, could be better delivered at a provincial level. As its website notes, the Provincial Health Services Authority (PHSA) "operates eight agencies that provide province-wide health care services, including the BC Cancer Agency, BC Centre for Disease Control, BC Children's Hospital and Sunny Hill Health Centre for Children, BC Mental Health and Addiction Services, BC Provincial Renal Agency, BC Transplant Society, BC Women's Hospital & Health Centre, and Cardiac Services BC." In turn, the BC Centre for Disease Control "provides provincial and national leadership in public health through surveillance, detection, treatment, prevention and consultation services. The Centre provides both direct diagnostic and treatment services for people with diseases of public health importance and analytical and policy support to all levels of government and health authorities."

The Ministry website notes that the mission of the Ministry of Health Services is "to guide and enhance the province's health services in order to ensure British Columbians are supported in their efforts to maintain and improve their health." Specific mention is made of the importance of health promotion and disease prevention activities, "both as a means of improving the health and wellness of British Columbians, and as a way of ensuring a more sustainable healthcare system for the future."

Within the provincial government, the Office of the Provincial Health Officer plays an advisory/supportive role. The responsibilities of this office are outlined in the Public Health Act and include: Providing independent advice on health issues to the Minister and Ministry of Health Services; Reporting to British Columbians on the health of the population and other health issues; Recommending actions to improve health and wellness; Reporting on progress towards achieving BC's health goals; and Working with the B.C. Centre for Disease Control and Prevention and BC's medical health officers to fulfill their legislated mandates on disease control and health protection. The office contains a Provincial Drinking Water Officer, who has explicit responsibility for assisting "the Provincial Health Officer in his role of providing oversight and accountability for the Drinking Water Protection Act, including requests for review of decisions by regional Drinking Water Officers, public reporting and responding to public complaints." The provincial Ministry includes a number of other branches with public health related activities.

Each of the regional health authorities has a Chief Medical Health officer who is responsible for maintaining the public health and enforcing/enacting new public health legislation (*e.g.* tobacco prevention and community care facility licensing). The Provincial Medical Officer oversees and works with the regional Chief Medical Health officers. The individual RHAs are expected to be accountable to their respective health areas for the services they provide, and are in the process of enacting, the Core Public Health Framework. Individual Public Health plans must be submitted to the Minister and revised on his/her recommendations before they can be published. After they are published, the RHAs can be required by the Minister

to report on the measures taken to effect the change, compliance with the plan, and any other matter the Minister deems important to the implementation of the plan.

Sources:

British Columbia Ministry of Health. Website: http://www.gov.bc.ca/health/index.html See also: Healthy Living Website: http://www.gov.bc.ca/themes/healthy_living.html

British Columbia Health Authorities: Website: http://www.health.gov.bc.ca/socsec/

Office of the Provincial Health Officer. Website: http://www.health.gov.bc.ca/pho/BC Centre for Disease Control. Website: http://www.bccdc.ca/default.htm

British Columbia Provincial Health Services Authority. Website: http://www.phsa.ca/default.htm

G1: Core Public Health Functions Framework

The British Columbia Core Public Health Framework has been under development since October 2003, when a series of consultations began. The purpose is to provide a framework to strengthen public health and improve population health. The process has incorporated evidence papers, model core program papers, and performance improvement plans, which identify the programs they wish to change, how they intend to accomplish it (performance management, etc), and goals with deadlines.

The 2005 document notes: "The Core Functions Framework includes *core programs* – long-term core programs, representing the minimum level of public health services that health authorities would provide in a renewed and modern public health system—and *public health strategies* that can be used to implement the core programs. The Framework defines the *system capacity requirements* required for success, such as health information systems and quality management, and ensures that populations of concern are of high priority by the use of *population and inequalities lenses*."

The framework is influenced by the US Healthy People 2010 project (case example E3).

The document notes that "Core programs in BC will be targeted to one of four broad categories. These are not mutually exclusive, and there will be overlap:

- Health Improvement Programs: intended to improve overall health and well-being; they are capable of preventing a wide range of acute and chronic diseases and disability, as well as injuries.
- Disease, Injury and Disability Prevention Programs: intended to prevent specific health problems that make, or might make, a significant contribution to the burden of disease.
- Environmental Health Programs: intended to protect people from environmental hazards, whether caused by natural or human activity, in the built and natural environments.

The website notes that the Core Public Health Functions Performance Improvement Process is being implemented, using a performance improvement approach. However, since BC uses a stewardship model, responsibility for implementation rests with the regions. The model indicates that regions are responsible for the following: "Address all the core programs (although they can cluster them together for planning and implementation in any means that works for a

given health authority); Develop a performance improvement plan for each program or cluster of programs that contains the following components: Planning context, Baseline assessment, Needs assessment / gap analysis, Performance targets and justification if no change is indicated, Key strategies, including initiatives, resources, etc., Reporting process; Make the plan public (usually by posting it to the health authority's website); and Provide public reports on progress in achieving the performance improvement targets, consistent with the dates set in the plan." However, they add "it is important to note that it is the health authority, not the Ministry, that identifies gaps, sets priorities and targets, and then develops and implements the strategies for performance improvement. The Ministry's interest is in establishing a performance improvement system that includes performance improvement planning and reporting that is accountable and transparent. As of March 2008, ten model core program papers have been approved and further six are under development. It is expected that all of the model core program papers will be completed by December 2010 and all performance improvement plans will have been implemented by 2011. Health authorities are posting their performance improvement plans and their progress reports on their own websites. By clicking on the link below, you will be taken to their website where these plans and reports are available. For a plan or report for a specific program, you can also click on their link in the "PP" and "PR" columns of the Quickfinder." There is considerable variability in the completeness of the information posted.

British Columbia's public health service philosophies are divided into four main categories each with their own respective sub-categories. The first category, titled "Health improvement programs," encompasses programs the Ministry feels improve overall population health and well-being. They include Reproductive health, Healthy development (child and youth), Healthy communities (workplace, etc), Healthy living, Mental health promotion and food security. The second category, called "Disease, Injury, and Disability prevention programs", includes public health functions meant to prevent specific health problems and to lessen the overall burden of disease. Subcategories include Chronic disease prevention, Unintentional injury prevention, Prevention of violence, abuse, and neglect, Prevention of mental disorders and problematic substance abuse, Communicable disease prevention and control, Dental health and the prevention of dental disease, Prevention of disability, and Prevention of the adverse effects of the health care system. The third category is "Environmental health", meant to protect people from their surroundings, man-made or otherwise. It includes Water quality, Air quality (indoor and outdoor), safe food, and Community sanitation and environmental health. The last core principle is "Health emergency management programs" which can be adequately summed up as the plans/levels of organization that are in place to effectively deal with health emergencies, "thereby saving lives and avoiding injury". The subcategories in this instance are Prevention and Mitigation, Preparedness, and Response and Recovery. Note that there are strong similarities between these and the Ontario Public Health Standards.

Criteria for the development of the Core Programs were as follows:

1. a) They are primordial, primary, or early secondary prevention interventions.

They either: prevent diseases or conditions that are important contributors to the burden of disease; and/or prevent diseases or conditions that are potentially important threats to health; and/or improve the overall health and resilience of the population, or some part of the population.

There is reasonable evidence of their effectiveness in the scientific literature or in reviews of 'best practices'.

There is reasonable evidence of their cost-effectiveness.

Indicators are available, or can be developed, that will measure their impact.

The list of indicators is remarkably comprehensive, and would provide an excellent resource. They are included in the Program Core Documents given in the sources.

As one example, the Air Quality indicators include:

Surveillance and Assessment – Indoor/Outdoor Air
-Level/concentration of pollutants in ambient air
a) Annual average, and 90 percentile, levels of pollutants: carbon monoxide, lead, nitrogen dioxide, particulate matter (2.5), sulfur dioxide and ozone
b) List of hotspots and their annual levels of major air pollutants

Proportion of homes with environmental tobacco smoke, especially homes with Children.
a) Percentage of children in regional health authorities living in homes where smoking occurs.
b) Percentage of households with adult smokers

Level of radon gas (Northern and Interior health authorities) in buildings/homes
a) Communities are categorized according to high, medium, and low risk of radon pollution (yes/no).
b) Number of high-risk communities in which houses have been tested

Proportion of public-use buildings that serve the most vulnerable and that have acceptable levels of air quality.
-Percentage of the following public-use buildings that meet Canadian Guidelines for Indoor Air Quality (or acceptable levels based on professional opinion):
a) Percentage of hospitals
b) Percentage of schools
c) Percentage of long-term care homes
d) Percentage of childcare centres
e) Percentage of residential centres, provincial jails, and other public institutions

Health authority surveillance reports to the public
- Public reports on air quality trends and health impacts of indoor and outdoor air pollution:
-Annual reports (yes/no)
-Quarterly reports (yes/no)
Media alerts on air health hazards (yes/no)

In turn the, program indicators for Air Quality Surveillance and Assessment include:

Health Authority programs that address hazardous or toxic substances in ambient Air.
a) Regional health authority has local monitoring of key ambient air pollutants

(yes/no)
b) Percentage of communities, over 5,000, that have implemented an air quality management plan.
c) Percentage of population in communities over 5,000 that are protected by an airshed management plan.

Health Authority programs to address hazardous or toxic substances in indoor air.
a) Number of indoor air complaints from the public
b) Number of buildings inspected in response to complaints per year
c) Number of consultations regarding indoor air quality per year
d) Percentage of dwellings inspected with visible mold and dampness

Policies pertaining to increasing indoor air quality
-Percentage of communities over 5,000 population that have by-laws requiring an entirely smoke-free environment

Level of knowledge about air quality among the public
-Percentage of the public indicating a moderate or high knowledge about air quality (a scale score from a regularly conducted survey)

Patterns of asthma events
a) Number of physician consultations for asthma events per 10,000 population, semi-annually (MSP data)
b) Prevalence of asthma by health service delivery area (data from CCHS)
c) Number of people filling prescriptions for asthma medication per 10,000 population, semi-annually.

Patterns of respiratory events
-Number of physician consultations for respiratory disease per 10,000 population, semi-annually (MSP data)

Level of carbon-monoxide poisoning (not fire-related)
a) Number of death from CO poisoning per 100,000 population per year
b) Number of hospitalizations and emergency department visits attributed to CO exposure, per 100,000 population, per year.

See: Model Core Program Paper: Air Quality. April 2006. BC Ministry for Healthy Living and Sport.

Not surprisingly, it is unclear the extent to which these are actually being used.

How we classified this case on our Performance Measurement Ladder? (Appendix 1)
OPHS Areas involved:
Chronic Disease Prevention; Injury and Substance Misuse Prevention; Reproductive Health; Child Health; Infectious Disease prevention; Rabies Prevention; Sexual Health, STI's and Blood-

borne Infection Prevention; Tuberculosis Prevention: Vaccine Preventable Diseases; Water Safety; Health Hazard Prevention; Public Health Emergency Preparedness;
Level
3. Goals and indicators defined, and data are being collected, but no indication that the data are being used for management. (In this category, it is often unclear how widely disseminated the data are, whether data collection has been standardized, and whether a common performance measurement system is being used.)

Food Safety
Level
3. Goals and indicators defined, and data are being collected, but no indication that the data are being used for management. (In this category, it is often unclear how widely disseminated the data are, whether data collection has been standardized, and whether a common performance measurement system is being used.)
4I-c The data are available publicly
4II-e Regulatory approach (the data are used by regulators, *e.g.*, closing a restaurant or pool)
Sources:
BC Population Health and Wellness, Ministry of Health Services. Core Public Health Functions for BC. Website: http://www.phabc.org/modules.php?name=Contentcore.
Includes the following documents:
A Framework for core functions in public health. (2005) Available from http://www.phabc.org/pdfcore/core_functions.pdf
Within each category, the Ministry is developing a Model Core Program Paper, a Performance Improvement Plan, and a Performance Report. Not all exist for all subprograms; we note the website, and the model core program papers where these are posted, by category.
Health Improvement. Website: http://www.phabc.org/modules.php?name=Contentcore&pa=showpage&pid=167.
See also:
Food Security. Website: http://www.phabc.org/modules.php?name=Contentcore&pa=showpage&pid=150.
Model Core Program: Paper Food Security. BC Health Authorities, BC Ministry for Healthy Living and Sport. June 2006. Available from: http://www.phabc.org/pdfcore/Food_Security_Model_Core_Program_Paper.pdf.
Healthy Communities. Website: http://www.phabc.org/modules.php?name=Contentcore&pa=showpage&pid=155
Model Core Program Paper: Healthy Communities.. BC Health Authorities, BC Ministry for Healthy Living and Sport. April 2007. Available from: http://www.phabc.org/pdfcore/Healthy_Communities-Model_Core_Program_Paper.pdf
Healthy Infant and Child Development. Website: http://www.phabc.org/modules.php?name=Contentcore&pa=showpage&pid=157
Model Core Program Paper: Healthy infant and early child development. BC Health Authorities, BC Ministry of Healthy Living and Sport. May 2009. Available from http://www.phabc.org/pdfcore/Healthy_Infant_and_Child_Development-Model_Core_Program_Paper.pdf
Healthy Child and Youth Development. Website: http://www.phabc.org/modules.php?name=Contentcore&pa=showpage&pid=156

Model Core Program Paper: Healthy Child and Youth Development. BC Health Authorities, BC Ministry of Healthy Living and Sport. March 2010. Available from http://www.phabc.org/pdfcore/Healthy_Child_and_Youth_Development-Model_Core_Program_Paper.pdf

Healthy Living. Website:
http://www.phabc.org/modules.php?name=Contentcore&pa=showpage&pid=161
Model Core Program Paper: Healthy Living. BC Health Authorities, BC Ministry of Healthy Living and Sport. April 2007. See:
http://www.phabc.org/pdfcore/Healthy_Living-Model_Core_Program_Paper.pdf

Mental Health Promotion and the Prevention of Mental Disorders. Website:
http://www.phabc.org/modules.php?name=Contentcore&pa=showpage&pid=165
Model Core Program Paper: Mental Health Promotion and Mental Disorders Prevention. BC Health Authorities, BC Ministry of Healthy Living and Sport. February 2009. See:
http://www.phabc.org/pdfcore/Mental_Health_Promotion_and_Mental_Disorders_Prevention-Model_Core_Program_Paper.pdf

Reproductive Health and the Prevention of Disabilities. Website:
http://www.phabc.org/modules.php?name=Contentcore&pa=showpage&pid=166
Model Core Program Paper: Reproductive Health and Prevention of Disabilities. BC Health Authorities, BC Ministry of Healthy Living and Sport. February 2009. See:
http://www.phabc.org/pdfcore/Reproductive_Health_and_Prevention_of_Disabilities-Model_Core_Program_Paper.pdf

Disease, Injury and Disability Prevention. Website:
http://www.phabc.org/modules.php?name=Contentcore&pa=showpage&pid=106

See also:

Chronic Disease Prevention. Website:
http://www.phabc.org/modules.php?name=Contentcore&pa=showpage&pid=103
Model Core Program Paper: Chronic Disease. BC Health Authorities, BC Ministry of Healthy Living and Sport. March 2010. See:
http://www.phabc.org/pdfcore/Chronic_Disease-Model_Core_Program_Paper.pdf

Unintentional Injury Prevention. Website:
http://www.phabc.org/modules.php?name=Contentcore&pa=showpage&pid=127
Model Core Program Paper: Prevention of Unintentional Injury. BC Health Authorities, BC Ministry of Healthy Living and Sport. November 2007. See:
http://www.phabc.org/pdfcore/Unintentional_Injury_Prevention-Model_Core_Program_Paper.pdf

Prevention of Violence, Abuse, and Neglect. Website:
http://www.phabc.org/modules.php?name=Contentcore&pa=showpage&pid=134
Model Core Program Paper: Prevention of Violence, Abuse, and Neglect. BC Health Authorities, BC Ministry of Healthy Living and Sport. March 2010. See:
http://www.phabc.org/pdfcore/Prevention_of_Violence_Abuse_Neglect-Model_Core_Program_Paper.pdf

Prevention of harms associated with substance use. Website:
http://www.phabc.org/modules.php?name=Contentcore&pa=showpage&pid=123
Model Core Program Paper: Prevention of Harms Associated with Substances. BC Health Authorities, BC Ministry of Healthy Living and Sport. February 2009. See:

http://www.phabc.org/pdfcore/Prevention_of_Harms_Associated_with_Substances-Model_Core_Program_Paper.pdf

Dental Health and the Prevention of Dental Disease. Website:
http://www.phabc.org/modules.php?name=Contentcore&pa=showpage&pid=115
Model Core Program Paper: Dental Public Health.. BC Health Authorities, BC Ministry of Healthy Living and Sport. October 2006. See:
http://www.phabc.org/pdfcore/Dental_Health_Model_Core_Program_Paper.pdf

Communicable Disease Prevention and Control. Website:
http://www.phabc.org/modules.php?name=Contentcore&pa=showpage&pid=109
Model Core Program Paper: Communicable Disease. BC Health Authorities, BC Ministry of Healthy Living and Sport. February 2009. See:
http://www.phabc.org/pdfcore/Communicable_Disease-Model_Core_Program_Paper.pdf

Environmental Health. Website:
http://www.phabc.org/modules.php?name=Contentcore&pa=showpage&pid=149

See also:

Air Quality. Website:
http://www.phabc.org/modules.php?name=Contentcore&pa=showpage&pid=137
Model Core Program Paper: Air Quality. BC Health Authorities, BC Ministry of Healthy Living and Sport. April 2006. See: http://www.phabc.org/pdfcore/air_quality.pdf

Food Safety. Website:
http://www.phabc.org/modules.php?name=Contentcore&pa=showpage&pid=140
Model Core Program Paper: Food Safety. BC Health Authorities, BC Ministry of Healthy Living and Sport. March 2006. See:
http://www.phabc.org/pdfcore/Food_Safety_Model_Core_Program_Paper.pdf

Healthy Community Care Facilities & Assisted Living Residences. Website:
http://www.phabc.org/modules.php?name=Contentcore&pa=showpage&pid=152
Model Core Program Paper: Healthy Community Care Facilities & Assisted Living Residences. BC Health Authorities, BC Ministry of Healthy Living and Sport. June 2010. See: http://www.phabc.org/pdfcore/Community_Care_Facilities_Assisted_Living-Model_Core_Program_Paper.pdf

Healthy Community Environments. Website:
http://www.phabc.org/modules.php?name=Contentcore&pa=showpage&pid=144
Model Core Program Paper: Healthy Community Environments. BC Health Authorities, BC Ministry for Healthy Living and Sport. February 2009. See:
http://www.phabc.org/pdfcore/Healthy_Community_Environments-Model_Core_Program_Paper.pdf
Model Core Program Paper: Healthy Built Environments. BC Health Authorities, BC Ministry for Healthy Living and Sport. February 2009. See:
http://www.phabc.org/pdfcore/Healthy_Community_Environments-Model_Core_Program_Paper.pdf

Water Quality. Website:
http://www.phabc.org/modules.php?name=Contentcore&pa=showpage&pid=147
Model Core Program Paper: Water Quality. BC Health Authorities, BC Ministry for Healthy Living and Sport. August 2007. See:
http://www.phabc.org/pdfcore/Water_Quality-Model_Core_Program_Paper.pdf

Health Emergency Management. Website:
http://www.phabc.org/modules.php?name=Contentcore&pa=showpage&pid=136
See also:
Model Core Program Paper: Health Emergency Management. BC Health Authorities, BC Ministry for Healthy Living and Sport. April 2006. See:
http://www.phabc.org/modules.php?name=Contentcore&pa=showpage&pid=136