Program Planning and Evaluation in Public Health

This is a story of four people named Everybody, Somebody, Anybody, and Nobody. There was an important job to be done and Everybody was sure that Somebody would do it. Anybody could have done it, but Nobody did it. Somebody got angry about that because it was Everybody’s job. Everybody thought Anybody could do it, but Nobody realized that Everybody wouldn’t do it. It ended up that Everybody blamed Somebody when actually Nobody accused Anybody.

—Anonymous

Learning Objectives

After completion of this chapter, the student will be able to:

- Explain the importance of evidence-informed health-related information for program planning and evaluation;
- Discuss the growing importance and use of web-based technologies and platforms to plan for, develop, implement, and disseminate information related to a variety of primary health care programs in Canada and globally;
- Define and differentiate between the terms program planning, strategic (allocative) planning, operational (activity) planning, program evaluation, formative evaluation, process evaluation, and summative evaluation;
- Recognize and describe the importance of including key stakeholders in program planning and evaluation processes;
- Describe the significance of program planning and evaluation by health care professionals, workers, and policy makers in Canada and internationally;
- Describe how program logic models may be utilized by health care professionals and workers to assess the impact of public health programs in Canada and abroad;
- Describe and differentiate between the eight critical steps of the program planning and evaluation process;

(Continued)
Introduction

In all health care organizations and systems in Canada and globally, decisions are made as to how resources, health care personnel and technologies will be utilized to address projected health care needs in the future. With increasing scrutiny, demands for transparency and accountability of how public funds in Canada are being utilized, program planning, and evaluation are critical components to address current and emerging public health issues and challenges (Health Canada 2001; Public Health Agency of Canada 2008; Senate Subcommittee on Population Health 2009). Unfortunately, public health systems in Canada and internationally are under pressure “to do more with less,” or “to do better with the same,” and are increasingly being swayed to employ industrial or corporate models to guide health care reforms (Bartfay and Bartfay 2015). Public health professionals and workers must work in partnership with other health care providers, citizens, organizations, families, community stakeholders, and various levels of government during the program planning and evaluation process.

Program planning and evaluation mirrors and complements the research process. Refer Chapter 5 for a detailed discussion of the critical nine steps of the research process. This chapter provides an overview of program planning and evaluation in public health. A framework for program planning and evaluation is presented to highlight the critical steps involved in this process which can be utilized to address a variety of current or emerging health issues and/or underlying social determinants of health. We shall begin with a discussion of how to access and develop web-based health programs and sites in our evolving technologically driven society in Canada. We shall then detail the formal processes involved in program planning and evaluation. We shall provide the reader with an overview of
Accessing and Developing Web-Based Health Programs and Sites

Evidence-informed public health (EIPH) is defined as “the process of distilling and disseminating the best available evidence from research, practice and experience and using that evidence to inform and improve public health policy and practice” (National Collaborating Centres for Public Health [NCCPH] 2011, 1). The evidence may include, but is not limited to, published research reports from a variety of disciplines; current best practice guidelines; existing legislations and policies; observations and experiences; and both expert and lay opinions and perspectives for all stakeholders concerned (Bartfay and Bartfay 2015). For example, it is critical to take into account the ability and willingness of all stakeholders to mutually agree that the evidence being accessed, graded, and employed is, in fact, relevant to their unique health situation, goal or need when planning and implementing various public health interventions, programs or when formulating policies. Similarly, it is critical to recognize cultural, moral, ethical, spiritual, financial, and political issues and values that may impact practice or public health policy decisions. Refer Chapter 1 for a detailed discussion on EIPH, types of evidence that may be employed by public health professionals and workers, and guidelines related to determining their significance, suitability and applicable.

The retrieval of EIPH-related knowledge and its pursuit is taking place within an ever widening network of both online and offline resources. Indeed, the availability, use, and access to the world wide web (WWW) and online resources and materials (e.g., peer-reviewed journals, conference proceedings, World Health Organization reports) have expanded exponentially during the past few decades globally (Bowen and Zwi 2005; Ciliska, Thomas, and Buffet 2008; Oxman, Lavis, and Fretheim 2007; Pach 2008). Web-based health-related sites are increasingly being accessed by health care professionals and workers and by the lay public (Rycroft-Malone 2008; Statistics Canada 2007, 2010a, 2010b). Indeed, 95% of youth are online every day, and in July 2010 Canada had the world’s greatest number of Facebook users in proportion to its population; the United Kingdom was in second place; and the United States in third (CEFRIO 2010; Robinson and Robertson 2010).
The International Telecommunications Union (ICT 2011) reports that one-third of the world’s population is online and 45% of Internet users are below the age 25. From the years 2006 to 2011, developing countries have increased their share of the world’s total number of Internet users from 44% to 62%, respectively. By mid-2011, 90% of countries had 2G services available and a total of 159 countries have launched 3G commercial Internet services with the total number of active mobile broadband subscriptions of almost 1.2 billion individuals (ICT 2011). According to Internet World Stats (IWS 2012), 44.8% of Internet users were from Asia; 21.5% for Europe; 11.4% for North America; 10.4% from Latin America and the Caribbean; 7% from Africa; 3.7% from the Middle East; and 1.0% for Oceania and Australia. In comparison to December 31, 2000 figures ($N = 360,985,492$), this represents a global growth of 566.4% ($N = 2,405,518,376$) in Internet usage for the year 2012 (IWS 2012).

Primary public health services and their delivery can be enhanced through the use of innovative and interactive telehealth or e-health interventions that are specifically tailored to meet the client’s health care needs. Telehealth or e-health is defined as “the use of telecommunications technologies and electronic information to exchange health care information and to provide and support services such as long distance clinical healthcare to clients” (Hebda and Czar 2013, 505). The online world has the empowering potential for lay individuals and public health professionals and workers alike in regards to finding health information that is contextually relevant; to identify peers or experts in various health-related fields; to locate support groups online; and to plan for and engage in preventative actions for change and health promotion (Eysenbach 2008; Flicker, Maley, and Ridgley 2008; Kreps and Neuhasuer 2010; Robinson and Robertson 2010). For example, the Public Health Agency of Canada (2006) has developed a portal for knowledge exchange entitled the “Canadian Best Practices Portal for Health Promotion and Chronic Disease Prevention” (see link: http://cbpp-pcpe.phac-aspc.gc.ca or http://www.phac.gc.ca/cbpp). The aims of this portal include the enhancement of knowledge exchange between public health care professionals, and it also serves as a central access point for EIPH. This portal serves as a convenient and single point of quick access to EIPH practices for a variety of public health care professionals in Canada. The portal consists of a searchable database of community-level interventions, resources to help with public health planning, chronic disease prevention and health promotion goals, and a user-friendly catalogue of best practice systematic reviews of the scientific literature. The portal is constantly being updated and consists of over 255 interventions and resources. This portal is increasingly being accessed and utilized by various public health care professionals for program planning and evaluation. Janis Letterman, for example, is a member of a national team for the Victoria Order of Nurses (VON) for the management of chronic disease prevention and its management who described her experience with the portal as follows:

Having a centralized, credible source of information was very helpful in developing our overarching chronic disease prevention and management program,” Janis notes. Now she tends to refer to the Portal at the beginning of planning for a project and in responding to requests for proposals for project funding. “I find the (population health approach) organizing framework very helpful. It’s a comprehensive, but simply place to start, helping me identify what I may be missing in program planning.

—Ontario Health Promotion E-Bulletin 2010, 2

Public health care professionals can also register to complete skills enhancement modules online (see http://www.phac-aspc.gc.ca/sehs-acss/index-eng.php).

The NurseONE/INF-Fusion portal was developed by the Canadian Nurses Association (2006), and is an interactive Web 2.0 resource designed to assist nurses to connect with their colleagues nationally, assist in their professional development, and as a central access point to access credible and current informational resources and tools to support evidence-informed nursing practice in Canada (see link: http://www.cna-nurses.ca/CNA/nursing/portal/about/default_easpx). The Effective Public Health Practice Program provides numerous links to systematic reviews and summaries of health research and practice outcomes (see link: http://www.ephpp.ca/). In addition, the National Collaborating Centre of Methods and Tools (NCCMT) provides resources and information about a variety of knowledge translation approaches and tools relevant to the practice of public health in Canada and globally for both practitioners and students (see link: http://www.nccmt.ca).
The development and use of mobile information and communication technologies (ICTs) have had considerable effects on our daily lives affecting how we work, communicate and socially interact. The term “ICTs” includes a variety of computer-based technology systems and applications for collecting, sending, retrieving and processing information, data and communications. Mobile ICTs are widespread and prevalent in a variety of setting including public schools, universities and colleges, businesses, restaurants, hospitals, retirement homes, community and sporting centres, shopping malls, airports and private homes (Petric, Petrović, and Vehovar 2011; Pew Research Centre 2014; Thomée 2012). Most individuals use mobile technologies as functional tools in everyday life and many cannot imagine living in a world without daily access to the Internet for work, play, shopping, banking, entertainment or educational purposes. Canadians on average have 4.5 connected devices in their households; 52% watch television while using their mobile devices, and 51% sleep with their mobile devices next to their bed, based on a national online survey conducted by Harris/Deima involving 1,009 individuals aged 16 and over who owned a smartphone or tablet device (Christensen 2013; Rogers Communication 2013).

The availability and use of the Internet has without doubt brought about a variety of conveniences to our modern life including doing university courses online, online banking and shopping, accessing information related to a variety of topics, and as a means of socializing to name but a few applications. Canadians are amongst the most active Internet users globally, and spend on average approximately 43.5 hours per week online, compared to the global average of 23.1 hours (Canadian Broadcasting Corporation [CBC] 2011). Hence, public health care professionals and workers need to be aware of these trends and develop public health promotion programs and campaigns with these in mind. Comparatively, the United States ranked second with 35.5 hours online (CBC 2011). The percentage of individuals using the Internet in Canada has grown from 51.3% in 2000 to 85.8% in 2013 (ICT Data and Statistics Division 2014). Similarly, the number of fixed (wired) broadband subscriptions has increased from 1,410,932 in 2000 to 11,709,900 in 2013 (ICT Data and Statistics Division 2014). Kende (2014) reports that there were over 1 billion Internet hosts in 2013 and by 2015 there will be over 3 billion regular Internet uses globally.

According to the Internet Use Survey, 69% of individuals in Canada searched for medical or health-related information using the Internet (Statistics Canada 2010a, 2010b). Similarly, results from the US-based Pew Internet Survey conducted between 2002 and 2008 revealed that between 75% and 83% of Internet users searched for health information online (Fox and Jones 2009). Bennett and Glasgow (2009) conducted a review of the Internet as a delivery platform for public health interventions, and their review showed potential and positive results for the dissemination of primary and secondary interventions for diverse populations. Lüchtenberg et al. (2008) reported that 82% of the 139 Internet-based health information sites evaluated were not fully accessible to the visually impaired. Figure 10.1 shows the percentage of Internet users by specific activities for the years 2002–2012 based on the Pew Internet Survey (Rainie, Purcell, and Smith 2011; Purcell, Brenner, and Rainie 2012).

A random survey of 2038 adults in the Pew Internet Project found that adults who were sick or disabled were more likely to use the Internet, and searched for more online health information in comparison to healthy adults surveyed (Goldner 2006). Hesse et al. (2005) found that although study participants viewed physicians as the most credible source for obtaining health information, 48.6% of respondents reported using the Internet first, while only 10.9% consulted with a physician first. Underhill and McKeown (2008) found that higher-educated women and those with higher incomes were more likely to search for health-related information online, while young adult men were the least likely to perform Internet-based searches for health-related information.

The Internet and newer Web 2.0 platforms (e.g., social networking sites, video sharing and mobile e-technologies, wikis, blogs) are slowly changing public health practice settings and scope, as well as the public’s expectations and capabilities to make evidence-informed decisions related to their health and well-being. In fact, more than 83% of Canadians regularly use the Internet and approximately 70% of users search online for health-related information (Statistics Canada 2010a, 2010b). The challenges for employing online web-based prevention and health promotion in virtual settings are to provide a balanced and targeted communication; provide information to diverse populations and interests across the lifespan; and ensure quality control checks related to content with collaborative filtering of links towards high-quality EIPH. Hence, the key public health
challenge in these virtual settings is to actively engage individuals and public health professionals and workers, and to offer empowering health information, resources and networks. With this in mind, there is little doubt that the online world is increasing becoming a major setting in Canada and globally where “people live, love, work and play.” Access to and the availability of high-quality and reputable health information on the Internet provides individuals, families and health care professionals and workers with valuable information to make informed decisions about their health (Kivits 2009; Korp 2006; Mehra, Merkel, and Bishop 2004; Public Health Agency of Canada 2006). However, a growing number of Internet users have expressed concern about the claims made and credibility of health information obtained from certain Internet sites. Moreover, comfort and familiarity with the Internet does not necessarily guarantee the ability to obtain credible online evidence-informed health-related information (Eysenbach and Kohler 2002; Goldner 2006; Hess et al. 2005; Rice 2006). For example, Changrani and Gany (2005) investigated the Internet behaviour and use of sixty English-speaking Caribbean women in New York City, and findings from this study revealed that Internet users did not know the differences among cancer websites with domain names such as .edu, .gov, .com or .net.

Health care professionals and workers and the individuals, families or communities they serve can help to determine the credibility of online web-based sites by accessing the health-related information provided based on the Health on the Net Foundation (HON) Code (2009). Table 10.1 shows the eight principles of the HON Code (2009). Individuals may also submit a URL to the Worldwide Online Reliable Advice to Patients and Individuals (WRAPIN 2007) service (http://www.wrapin.org) to determine if the health-related website is accredited or trustworthy in nature.

The World Wide Web Consortium (W3C 2009) is an international organization that provides the standardization and operation for the web and helps to ensure the universal and equitable access to information for all, including individuals with disabilities (see W3C—http://www.w3.org). The W3C has created accessibility standards for web content designers and developers, including the Web Content Accessibility Guidelines (WCAG), which was last updated in 2008 (Caldwell, Slating, and Vanderheiden 2008). Similarly, the Treasury Board of Canada Secretariat (2007) has also developed guidelines to ensure accessibility to all Canadian government websites known as the Common Look and Feel for the Internet document. Refer Web-Based Resource Box 10.1 for further information related to how to access and evaluate the quality of online health-related information and resources for program planning and evaluation in public health.
Table 10.1 The Health on the Net Foundation (HON) Code of Conduct for Medical and Health Websites (2009)

<table>
<thead>
<tr>
<th>Specific Principles</th>
<th>Criteria and Comments</th>
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<tbody>
<tr>
<td>1. Authority</td>
<td>Any medical or health advice provided and hosted on this site will only be given by medically trained and qualified health professionals unless a clear statement is made that a piece of advice is from a non-medically qualified individual or organization.</td>
</tr>
<tr>
<td>2. Complementarity</td>
<td>The information provided on this site is designed to support, not replace, the relationship that exists between a patient/site visitor and his or her existing physician.</td>
</tr>
<tr>
<td>3. Privacy</td>
<td>Confidentiality of data relating to individual clients and visitors to a medical/health website, including their identity is respected by this website. The website owners undertake to honour or exceed the legal requirements of medical/health information privacy that apply in the country and state where the website and mirror sites are located.</td>
</tr>
<tr>
<td>4. Attribution</td>
<td>Where appropriate, information contained on this site will be supported by clear references to source data and, where possible, have specific HTML links to that data. The date when a clinical page was last modified will be clearly displayed (e.g., at the bottom of the page).</td>
</tr>
<tr>
<td>5. Justifiability</td>
<td>Any claims relating to the benefits/performance of a specific treatment, commercial product or service will be supported by appropriate balanced evidence in the manner outlined in Principle 4.</td>
</tr>
<tr>
<td>6. Transparency</td>
<td>The designers of this website will be clearly identified, including the identities of commercial and non-commercial organizations that have contributed funding, services or material for the site.</td>
</tr>
<tr>
<td>7. Financial disclosure</td>
<td>Support for this website will be clearly identified, including the identities of commercial and non-commercial organizations that have contributed funding, services or material for this site.</td>
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<tr>
<td>8. Honesty in advertising and editorial policy</td>
<td>If advertising is a source of funding, it will be clearly stated. A brief description of the advertising policy adopted by the website owners will be displayed on the site. Advertising and other promotional material will be presented to viewers in a manner and context that facilitates differentiation between it and the original material created by the institution operating the site.</td>
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Source: Adapted from the Health on the Net Foundation (HON 2009).

The development, usability and easy access to web-based health information by health care professionals and workers and consumers of health information often relates to more than just the credibility and accuracy of the health information provided (Canadian Public Health Association 1999, 2010; Health Summit Working Group 2010). Indeed, readability of the text and materials provided on the website is a critical design aspect to convey health-related information to all potential users and health consumers. In fact, 7% of Anglophones and 18% of Francophones in Canada have not completed Grade 9, and 42% of the working-age population scored below the functional level on international prose literacy scales (Statistics Canada 2006, 2008). Reading experts suggest that the majority of the population prefers that written materials provided be at least three grades below the last grade completed, which is typically at the grade 5–6 level (Gottlieb and Rogers 2004; McLaughlin 1969). However, a study by Ache and Wallace (2009) found that health-related web-based materials were on average written at the grade 11 level with a range between grades 7 and 12.
Public health care professionals and workers who are either developing or recommending Internet-based websites for their clients can determine the readability of the site by using the Simple Measure of Gobbledygook (SMOG) Readability Test, (Gottlieb and Rogers 2004; McLaughlin 1969). Table 10.2 shows an adapted SMOG

Web-Based Resource Box 10.1 How to access and evaluate the quality of online health related information and resources

<table>
<thead>
<tr>
<th>Learning Resource</th>
<th>Website</th>
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<tbody>
<tr>
<td><strong>Canadian Nurses Association, (2006). NurseONE, the Canadian Nurses portal</strong> This web-based resource box provides nurses with credible and reliable information to support their evidence-informed practice, managing their careers and connecting with colleagues and health care experts</td>
<td><a href="http://www.cna-nurses.ca/CNA/nursing/portal/about/default_e.aspx">http://www.cna-nurses.ca/CNA/nursing/portal/about/default_e.aspx</a></td>
</tr>
<tr>
<td><strong>Health on the Net Foundation. (2009). HON code of conduct (HOHcode) for medical and health Websites. Health on the Net Foundation</strong> This website describes how the HON seeks to promote and guide the deployment of useful and reliable online health information, and its appropriate and efficient uses.</td>
<td><a href="http://www.hon.ch/HONcode/Guidelines/guidelines.html">http://www.hon.ch/HONcode/Guidelines/guidelines.html</a></td>
</tr>
<tr>
<td><strong>WRAPIN (2007). WRAPIN Project-IST-2001-33260</strong> This website helps to determine the reliability of health-related documents by checking the ideas contained against established benchmarks, and enables users to determine the relevance of a given document from a page of search results.</td>
<td><a href="http://www.wrapin.org">http://www.wrapin.org</a></td>
</tr>
</tbody>
</table>

| **Table 10.2 The Simple Measure of Gobbledygook (SMOG) Readability Assessment Tool:** Adapted for the Assessment for the Approximate Grade Level of Reading Skill for Health-Related Websites |
| **Step 1: Sample selection** | Select 30 sentences from the text material of the health-related Website: 10 consecutive sentences from the start, the middle, and the end of the material. A sentence is a complete idea with a period, question mark, a bulleted point, or both parts of a sentence with a colon included. |
| **Step 2: Word count** | Count the number of words with more than three syllables (polysyllabic) in the 30-sentence sample. Include all repetitions of a word, proper nouns, the full text of abbreviations and hyphenated words as one word. |
readability assessment tool which can be utilized by public health care professionals and workers to assess the readability of a website they are developing or one they may be recommending to their clients.

Similarly, Norman and Skinner (2006) have developed a reliable and valid scale to assess an individual's e-health literacy based on their comfort level, knowledge and perceived skills at finding, evaluating and applying health information obtained. The reader can review this scale at http://www.jmir.org/2006/4/e27.

In addition to the above, the Canadian Public Health Association (PHAC 1999, 2010) has published the Directory of Plain Language Health Information to assist public health care professionals and workers to produce and publish clear and easily understood written materials for the public. These include the use of an active voice by stating the action first and by writing directly to the reader (i.e., you). For example: You should eat five to ten fruits and vegetables per day instead of five to ten fruits and vegetables should be eaten every day. The PHAC also recommends the use of short words and sentences and the replacement of technical or difficult words with simpler words (e.g., heart in place of cardiac); the use of bullets and boxes

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Photo 10.2 An early nineteenth century keypad receiver and sender for Morse code. The availability and means of communicating and sharing information globally has dramatically changed in the past few decades.
to highlight important points or information; to write instructions in the order in which you want them to be carried out; and to evaluate/test whatever you write with learners before you formalize them.

**Interactivity** is defined as a process where a user is an active participant in utilizing technology and for acquiring and engaging in the exchange of information (Bartfay and Bartfay 2015). When designing health-related websites, the use of graphics, diagrams, short video clips or props to illustrate concepts (e.g., what a serving of meat is in comparison to a deck of cards) will often help to clarify or reinforce text and to have a more professional and pleasing appearance in nature. Lastly, health-related websites that are interactive in nature may help to attract users and to monitor their progress (e.g., calculations of body mass index, calorie counters or self-report charts and graphs, and chat rooms) (Ferney and Marshall 2006; Stout, Villegas, and Kim 2001; Suggs and McIntyre 2009; Yasnoff et al. 2000). Research Focus Box 10.1 provides an example of how Canadian youth in Ontario are accessing and employing online health-related resources and information, and some of their major concerns related to issues of privacy.

### What Is Program Planning?

**Planning** is a critical component of public health which seeks to make informed decisions today based on the best available evidence to influence future health outcomes and directives based on competing resources and/or priorities (Bartfay and Bartfay 2015). Indeed, decisions on resource usage and allocation need to take into account the possibility of future changes to the health needs of your target population or community, the
availability of qualified public health care professionals and workers, required financial and resource forecasts and technologies. Program planning and evaluation in public health are also critical components which ultimately seek to promote community development and health partnerships, build community capacity based on the available resources on hand, and to promote social justice for all residents of Canada. The Public Health Agency of Canada (2007a, p. 14) defines the concept of social justice as a society that gives individuals and groups fair treatment and an equitable share of the benefits of society. In this context, social justice is based on the concepts of human rights and equity where all groups and individuals are entitled to important rights such as health protection and minimal standards of income. One of the major goals of public health is to minimize preventable death and disability for all residents in Canada, and this goal is integral to social justice. The specific objectives of Health Canada are as follows:

- Prevent and reduce risks to individual health and the overall environments;
- Promote healthier lifestyles;
- Ensure high-quality health services that are efficient and accessible;
- Integrate renewal of the health care system with longer term plans in the areas of prevention, health promotion, and protection;
- Reduce health inequalities in Canadian society; and
- Provide health information to help Canadians make informed decisions (Public Health Agency of Canada 2007a, 3–4).

Program planning is defined as an organized and structured systemic decision-making process which attempts to meet specific primary health care aims or objectives through the application of currently available, and competing or needed resources in the future based on identified priorities or projected needs (Bartfay and Bartfay 2015). The growth of multidrug-resistant strains of tuberculosis (TB) seen in certain immigrant populations, and the potential spread of diseases carried by mosquitoes (e.g., West Nile Virus) in Canada due to climate change, are salient examples. Budgen, Cameron, and Bartfay (2010) note that an analogy can be made between planning a public health program and creating an architectural design for a building. Indeed, the more carefully the architect consults with the stakeholders for whom the building is being constructed, the greater the likelihood that the building will be satisfactory to all. The more clearly specified the vision of that which is wanted, the more likely the vision will be realized. The more attention the architect pays to the physical and social environments where the building will to be located, the more likely the building will be appreciated and compatible with the environment, and viewed as an overall positive addition to the neighbourhood. This analogy is much the same in regards to program planning and evaluation in public health (Bartfay and Bartfay 2015; Budgen, Cameron, and Bartfay 2010).

**Strategic or Allocative Planning**

Strategic or allocative planning is defined as an open and transparent formalized decision-making process which seeks to determine which health care needs should be addressed in accordance with the available resources and closely resembles policy making (Bartfay and Bartfay 2015). The establishment of health care needs or priorities may be situational (e.g., aging population) or reactive in nature (e.g., SARS, Avian flu pandemic).

**Photo 10.3** During the 2009 A/H1N1 pandemic, there were 428 deaths and 8,678 hospitalizations in Canada (PHAC 2010).
For example, in April of 2009, a novel strain of influenza (H1N1) was recognized in Mexico, which resulted in a cluster of illness with the potential to become a deadly pandemic (Public Health Agency of Canada 2009). On June 11, 2009, the World Health Organization (WHO) raised the pandemic alert level to 6, which indicated that the H1N1 virus was rapidly spreading from human to human globally. The WHO reported that as of July 2009, there were almost 100,000 confirmed cases worldwide and 500 deaths, including twenty five in Canada (Canadian Institutes of Health Research, Rx & D Health Research Foundation, and Canadian Food Inspection Agency 2009). Consequently, many nations declared this to be a global pandemic and various public health initiatives were quickly considered and implemented (e.g., tracking and surveillance, primary prevention measures such proper handwashing and the development of vaccines). The overall goals of the Canadian Pandemic Influenza Plan were to minimize serious illness, overall deaths and social disruption associated with this pandemic. We must also be cognizant of the fact that all the decisions regarding how public health priorities are identified and set often entail ethical, sociopolitical or value-laden aspects and tensions (Bartfay and Bartfay 2015). Indeed, health care systems in Canada often reflect each of the provinces’ and territories’ unique political and social conditions, health challenges and aspirations and willingness to address these current or emerging issues and concerns.

Operational or Activity Planning

Operational or activity planning is defined as a formalized decision-making process which focuses on the implementation of plans based on detailed time frames (Bartfay and Bartfay 2015). For many planning systems, both short- and long-term planning outcomes may be identified. Short periods are typically a few months to a year, whereas a period of five years is employed as the standard time frame for long-term planning (Green 2007; Green, Collins, and Mirzoev 2012). Short-term planning outcomes are the immediately apparent results of the program, such as a community-based immunization campaign to prevent the spread of a potentially life-threatening virus. The long-term planning outcomes reflect the ultimate goals of the program. For example, building the clinical knowledge base of health care professionals (e.g., public health nurses, nurse practitioners, family physicians) and youth workers in remote First Nations communities related to suicide over a period of 12–18 months would be an example of a short-term planning outcome. Reducing the incidence of attempted and successful suicides in this target population over a five-year period would be an example of a long-term planning outcome.

Unfortunately, planning in public health often does not have a good reputation due to a lack of implementation of plans or the failure of ineffective or insufficient plans. The reasons for these failures vary, but frequently include a failure to involve and consult key stakeholders such as community members who will access these proposed services; rigid top-down bureaucratic centralist processes; a failure to do a needs assessment; access issues; budgetary constraints; a variety of sociopolitical reasons; and the lack of formalized program outcome or impact evaluations (Green 2007; Green, Collins, and Mirzoev 2012; Victora et al. 2012). Another criticism of planning in public health involves the feasible issue in periods of social, environmental, economic or political uncertainty or instability (e.g., minority governments, growing provincial/territorial health care deficits, global recession, climate changes and extreme weather, bioterrorism). Nonetheless, it may also be argued that planning is a mechanism for dealing with these noted uncertainties by highlighting priorities or groups with needs (e.g., Aboriginal with diabetes) and/or trends (e.g., aging population), and for developing a strategic plan to address these projected gaps or needs.

What Is Program Evaluation?

Program evaluation is defined as a formalized ongoing and dynamic process to monitor, assess and refine public health program activities and interventions and to identify gaps or actual or potential flaws in the original program design and implementation (Bartfay and Bartfay 2015). Although governments and non-governmental organizations in Canada and abroad spend literally billions of dollars annually on health programs which seek to restore, maintain and/or improve health outcomes in diverse populations across the
lifespan, there is a growing realization that few of these initiatives have been formally evaluated (Evaluation Gap Working Group 2006; Oxman et al. 2010). Moreover, current interests in so-called “results-based financing” for health outcomes is increasing the pressure on public and private health funders and implementers to carry out formal program impact evaluations (Victora et al. 2012; World Bank 2010).

**Evaluation** is best understood as a process ultimately intended to determine the worth of something new, presumably in comparison with some current norm or standard of goodness (Bartfay and Bartfay 2015; Budgen, Cameron, and Bartfay 2011). For example, comparisons for evaluation purposes may be conducted (Brinkerhoff et al. 1983; Herman, Morris, and Fitz-Gibbon 1987; Horne 1995; Hudson, Mayne, and Thomlison 1992; McKenzie and Jurs 1993; Van Marris and King 2007):

- To make comparisons with similar programs (e.g., comparing one Aboriginal diabetes community health centre with another);
- To make comparisons with different programs (e.g., comparing weight gains of infants whose parents participated in community-based maternal health classes versus infants whose parents did not participate in these classes);
- To confirm and establish new clinical practice and outcome standards of care (e.g., best practice guidelines for stroke care by health care professionals such as nurses, physicians and rehabilitation therapists);
- To determine the impact of a public health program (e.g., the effectiveness of school-based safe-sex primary prevention programs in terms of condom use and sexually transmitted infections (STIs) rates in a region);
- To establish baselines and monitor trends associated with the delivery of various health programs and services and their associated costs (e.g., diagnostic imaging and laboratory tests);
- To justify a change in public health policy or legislation (e.g., legislation to ban smoking in public places such as workplaces, restaurants and shopping centres and its impact on mortality rates of lung cancer associated with chronic exposure to second-hand smoke);
- To evaluate access to health care services and programs (e.g., wait times for hip and knee replacement surgeries in rural versus urban communities in Newfoundland);
- To test a hypothesis related to the outcomes or delivery of a health program;
- To monitor and determine what needs to be changed to improve the overall effectiveness of a program and to ensure continuous quality improvement of program delivery and outcomes;
- To determine the efficiency and cost-benefit of a public health program; and
- To determine what public health programs work for certain target groups, communities or entire populations, what doesn't work and why.

The United Nations Committee on Economic, Social and Cultural Rights (2002) suggests using four basic criteria to evaluate access to health: (a) availability (of functioning, staffed and stocked with supplies health care facilities); (b) accessibility (all individuals have affordable access to health care and health information and are not discriminated against in reference to their sex, age, marital status, physical ability or other characteristics); (c) acceptability (health care interventions and practices adhere to current standards of care and ethical practices that are confidential and respectful of cultural, gender and life cycle requirements); and (d) quality (of health facilities, goods and services utilized are scientifically appropriate and of good overall quality).

Appropriate comparisons can sometimes be a challenge in terms of comparing one public health program with another due to a variety of complex physical and sociopolitical issues (e.g., transportation issues, availability of required infrastructures, access in remote communities, unemployment, availability of health professionals and specialists required to carried out the program). When comparisons cannot be made in a straightforward nature, creativity is required. For example, a so-called “tracer method” may be employed to evaluate the effectiveness of a health program (Bartfay and Bartfay 2015; Budgen, Cameron, and
Bartfay 2010; Kaluzney and Veney 1999). This method is analogous to the use of a radioactive tracer used for clinical diagnostic purposes. The radioactive tracer is introduced into a vein via an intravenous device and is literally traced throughout the patient's body to assess the health of vessels, glands and/or entire organ systems. With this method, a health problem or issue is literally traced through a community or defined population, and variables such as the socioeconomic conditions present, changing demographics, health care access, availability of health care professionals and required infrastructures, and the like are examined.

What Are the Types of Program Evaluations Conducted?

There are a variety of program evaluation types that can be broadly classified into the following three main categories, which are typically based on when the evaluations are being conducted and the type of information being collected (Bartfay and Bartfay 2015; Budgen, Cameron, and Bartfay 2010; Van Marris and King 2007): (a) formative, (b) process, and (c) summative. Formative evaluations focus on public health programs that are being planned and developed to help ensure that the stakeholder’s needs are being addressed and that the program uses effective and appropriate structures, resources, facilities, procedures and/or materials (Bartfay and Bartfay 2015). Formative evaluations include such things as needs assessments; program logic models (detailed below); pretesting or piloting of program materials or educational resources; and a preliminary analysis to determine if your program’s intended aims, goals or outcomes can be achieved, measured and evaluated. The term structure is often employed to describe all the resources and personnel required to support the health process. A structural evaluation is a common component of formative evaluations and involves the assessment of resources used in the program (Bartfay and Bartfay 2015).

Process evaluations focus on programs that have gone through the formal planning stages and have been implemented or are already underway and seek to answer the question “What health services are actually being delivered and to whom?” In reality, public health programs are rarely implemented exactly according to plans. Hence, a process evaluation focuses on the specific tasks and procedures necessary to carry out the program and includes a variety of activities, including (Bartfay and Bartfay 2015):

- implementation evaluations;
- quantity and quality of public primary health care services rendered and to whom;
- providing descriptions of what actually transpired while providing health services; and
- descriptions of the users who access the public primary health program.
Summative evaluations are carried out for health programs that are well underway or have been completed and can be used to assess short-, medium-, or long-term aims, goals or desired outcomes of the program both intended and unintended. Summative evaluations seek to answer the questions “Did the health program make a difference?” and “Did the health program meet all of its aims and goals?”

The terms outcome measures and impact measures are often used interchangeably to describe the effects of a health program during summative evaluations; however, they are distinct entities (Borus, Buntz, and Tash 1982; Lorig et al. 1996; Van Marris and King 2007). An outcome measure evaluates what specifically occurred as the result of the health program being implemented in reference to its noted aims or goals (Bartfay and Bartfay 2015). Conversely, impact measures are used to evaluate the effect of the implemented health program on the users, stakeholders and implementers and specifically measure what changes (positive, negative or neutral) occurred as a result of the program (Bartfay and Bartfay 2015). Both outcome and impact measures require quantifiable indicators or measures. Indicators might be, for examples, public safety, behavioural changes, health-related quality of life measures, health-related policies, public participation, individual health status, population health status, use of resources and the like (Budgen, Cameron, and Bartfay 2010).

What Is the Program Planning and Evaluation Process?

There are a variety of program planning and evaluation process models that have been described in the literature and are beyond the purpose and
scope of this chapter. We present here a simple, easy to understand and implement eight-step process, which is based on several of these process models. The reader is cautioned that the terminology or concepts used in this process often varies depending on the specific program planning and evaluation model employed (Bartfay and Bartfay 2015; Budgen, Cameron, and Bartfay 2010). We shall also describe in a section below the program logic model, which is currently being utilized by various public health agencies and departments in Canada (Mullet 1995; Porteous, Sheldrick, and Stewart 1997, 2002; Public Health Agency of Canada 2008).

The process involved in program planning and evaluation is similar to the research process. Indeed, there is often a fine line between formal program planning and evaluation and research in the health sciences. Hence, it is imperative to protect the stakeholders involved in terms of the principles of autonomy, confidentiality, beneficence and social justice every time your program planning and evaluation involves the collection or documentation of opinions, observations, interviews, surveys or the collection of personal health-related data or outcomes. Both require a review of the best available evidence, critical thinking and formal planning and evaluation or assessment techniques for EIPH. When you plan and design a public health program for evaluation, it is important to consider whether you will need to get ethical approval from all stakeholders involved and/or a formal review of your program proposal from one or more institutional review boards (IRBs). IRBs are found at most universities, health care centres and hospitals, public health departments and other governmental and non-governmental organizations. Figure 10.2 shows the eight critical steps involved in the program planning and evaluation process (Bartfay and Bartfay 2015).

**Step I**

The first step consists of a needs assessment which helps to formulate a clear understanding by all stakeholders and implementers as to what the actual or potential needs, problems or health-related issues are that need to be addressed to positively influence health and well-being in a defined community or region. Figure 10.3 provides some factors that are often considered during a typical needs assessment. Actual problems are those that currently exist in a defined group or community (e.g., high incidence of STIs in teens in a community). Potential problems are those that may occur at some later time or date (e.g., development of heart disease or...
diabetes in adults who were obese as children). **Stakeholders** are defined as all individuals or groups (both internal and external) who have an interest in the program or those who may be affected by the program either directly or indirectly, including community volunteers, potential program participants, policy makers, governmental agencies, non-governmental agencies or industry (Bartfay and Bartfay 2015).

This first step is critical in crystallizing what the program’s intent is (e.g., decrease the incidence of type 2 diabetes); for whom (e.g., young adults aged 18–40 living on First Nations reserves); and who will implement the program (e.g., public health care professionals in concert with volunteers and community leaders). The program’s intended target population or groups and who will ultimately deliver and fund the program needs to be clearly clarified and agreed to by the stakeholders and implementers.

**Figure 10.3** Example of factors that may be involved with a needs assessment.


**Photo 10.6** Community stakeholders were consulted in Copenhagen, Denmark to deal with health-related concerns associated with intravenous (IV) drug use (e.g., STIs, hepatitis B). This converted ambulance is known as the “Fixulance” and was the first safe drug consumption room (DCR) in Denmark. This unique DCR provides public health care professionals such as nurses to supervise clients during IV drug injections, provide them with sterile supplies (e.g., syringes and needles), dispose of used supplies safely, and also to provide health education, counselling and referrals to other community-based health services and professionals. The first DCR began operations in September, 2011 and there are currently four DCRs total due to the success of this pilot project.
Step II

Program aims or goals should be clear, measurable and realistic in nature, and those that are not specific should be clarified before proceeding. In other words, the proposed program should have measurable indicators that can be short term, middle range and/or long term in nature. For example, a short-term aim or goal may be to increase knowledge related to inactivity, poor nutritional choices and the hazards associated with obesity amongst school-aged children aged 10–12 years old, parents or guardians, teachers and caregivers. A middle-term aim or goal may be related to improving body mass index scores over a period of 8–12 months in the children, and a decrease in the consumption of high fat and high sugar foods by children and their parents. A long-term aim or goal may be to decrease the incidence of type 2 diabetes over a five-year period in high-risk school-aged children.

Step III

The third step of the program planning and evaluation process is to develop a draft program plan based on a critical review of the best available evidence and the current state of knowledge related to the actual or potential problem(s) or issue(s) identified. For example, what is the current state of knowledge related to cosmetic pesticides and the development of skin rashes, neurological disorders and cancer? A variety of portals may be consulted, as noted above. In addition, there are a variety of reputable websites and search engines that can be accessed by public health care professionals and workers (e.g., MEDLINE, CINAHL, PUBMED). It is also critical to review the outcomes of similar programs and determine what worked and what did not work and why at this point in time.
This plan of action is like a blueprint for the construction of a home which shows where all the support beams will go, the electrical wiring and plumbing, the size of each room, timelines for completion, and so on. This action plan should be evidence informed and each proposed intervention of the program plan needs to be carefully detailed. Many kinds of action strategies can be considered or created, and imagination is an essential ingredient for success. Resources should be sought from both within and outside the community or group. Plans of action, for example, may involve a specific research methodology, approach or design (e.g., pretest–posttest experimental design, prospective cohort study, cross-sectional design study). It is critical that public health care professionals and workers clearly understand the stakeholders’ interests and expectations. Successful program planning must be linked with time estimates and task specifications (e.g., Gantt charts described below). Timelines indicate tasks or activities that must be done and by whom and when.

A **task development timeline** specifies the specific tasks or activities that need to be completed and the time frame in which the tasks are estimated to be completed by (McKenzie, Neiger, Thackeray 2009). Making an optimistic and an alternative timeline (if things take longer) may be wise. As with all aspects of program planning and evaluation, flexibility is needed in combination with goal directedness (Bartfay and Bartfay 2015; Budgen, Cameron, and Bartfay 2010). For example, if students in a public high school are involved, note when the students must have their tasks completed; if seniors in a community need immunizations prior to flu season, note when the immunizations should be finished; or if an agency or institution has provided funding for a project or primary health care intervention, note when a final report is expected. The Gantt chart was first developed by Henry Gantt in 1911 as a production tool and provides a list of tasks to be completed and associated timelines; monitors the progress made towards completing the noted tasks; and uses a marker (e.g., *) above the columns to indicate the current date or time period (TechTarget 2007; Timmreck 2003). **Gantt charts** are typically depicted in a tabular format and are a commonly employed visual tool to present the sequence and timing of tasks or activities that must take place in order to accomplish the specific objectives of the program or project (Bartfay and Bartfay 2015). Hence, a Gantt chart provides stakeholders and planners with a visual aid to monitor tasks completed and progress made on a regular basis. Table 10.3 presents an example of a fictitious Gantt chart for a pilot community-based health promotion program.

It is also critical to determine the availability of funding or potential funding sources for the program at this point in time; the availability of community-based resources and facilities, staff, volunteers, and how potential users will learn about your program and how it will be accessed. One needs to also determine and articulate how you will formally evaluate the effectiveness, outcomes and/or impact factor of the program based on its intended aims or goals. You should select the type of evaluation that shall take place; an evaluation framework or tools for evaluation (e.g., survey, clinical data, mortality and morbidity rates); determine when it will be conducted; and how qualitative and quantitative data will be analyzed. The action plan, design or approach and evaluation model should use easy-to-understand terms and health-related jargon or technical terms should be avoided. It is often helpful to show each step of your plan of action using flowcharts, diagrammatic models, conceptual maps, symbols or even photos or pictures.

These can also be utilized to help guide the formal evaluation process once the program has been implemented. Although the primary intent of diagrammatic models is to make clear the connections between values, goals, program activities, and outcomes, other relevant program dimensions may be included for practical purposes (Bartfay and Bartfay 2015; Budgen, Cameron, and Bartfay 2010). Diagrams such as program logic models and conceptual maps may be created in a variety of forms for planning purposes, updated regularly and used finally to help guide the evaluation process. Cartoonlike sketches, for example, may be helpful in depicting the human experiences represented within the diagrams. Of importance is not the form of the diagrams per se, but that they effectively depict in the visual sense that which is planned, is happening or has happened. Constructing diagrams in conjunction with community stakeholders helps to promote clarity, a shared vision and ownership for the process and outcomes achieved (Bartfay and Bartfay 2015; Budgen, Cameron, and Bartfay 2010).
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<tr>
<th>Major Tasks</th>
<th>JAN</th>
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<th>APRIL*</th>
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<td>1. Develop pilot program rationale</td>
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<td>2. Conduct needs assessment for all stakeholders concerned</td>
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<td>3. Develop program goals and objectives</td>
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<td>4. Detail health promotion interventions</td>
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<td>5. Assemble necessary resources and train program facilitators</td>
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<td>6. Promote and pilot test program</td>
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<td>7. Collect and analyze data and evaluate program outcomes</td>
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<td>8. Write report</td>
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<td>9. Present findings to key stakeholders</td>
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X—planned time frame; XO—completed.
*—marker for current date or time frame.
Step IV
The fourth step of this process is seeking feedback and suggestions from all stakeholder’s and implementer’s. It is critical to determine that you have identified all the program aims or goals, how the program will be implemented and by whom, the target dates for completion and so on. In other words, have you done a good job communicating what the proposed program is all about and what it wants to accomplish? Communities and groups work from their own values, experiences and definitions of situations, and public health care professionals and workers need to be supportive of these. Effective communication emphasizes the need to find a common language and ground which recognizes the interdependence between stakeholders and public health care professionals and workers.

Step V
The feedback and suggestions received by the stakeholders and implementers above should be carefully recorded and considered. This information may be utilized to help clarify program aims or goals, target populations or users, resources available or needed, definitions of actual or potential health-related issues or concerns, action plans and timelines, and/or evaluation tools or methods. Feedback may occur in a variety of formats (e.g., town hall meetings, focus group sessions, e-mails). For example, programs involving the use of community volunteers as resources are becoming increasingly popular as a way to help contain costs and, hopefully, encourage community partnerships and empowerment in term. This is an example of the so-called “art of effective program planning and evaluation” where the feedback and inputs from volunteers are actively sought. Furthermore, this helps to solidify their active involvement and the success of the proposed program under review.

Step VI
Once the program is implemented, it is critical to carefully monitor and assess the program on an ongoing basis for unforeseen events or circumstances that may negatively impact on the overall success of the program. For example, suppose a rural community-based dialysis program is implemented and the clinic was initially planned to run between the hours of 9 am and 4 pm. The rationale for the clinic was to decrease travel times for dialysis patients so they wouldn’t have to engage in long commutes to urban-based dialysis clinics. Based on feedback from users of the rural dialysis program, you learn that these proposed program hours conflict with school and work schedules and that users would prefer the clinic to run after 5 pm. Changing the dialysis clinic hours in response to user feedback would help to facilitate access to the clinic for more users and likely increase the success of this rural community-based dialysis program.

Step VII
This step involves the formal evaluation of the program aims or goals. The evaluation is based on the documented outcomes achieved and an analysis of the qualitative and/or quantitative data collected. Evaluation approaches must be flexible and holistic in nature; whenever possible, to permit a better understanding of the outcomes of the program and its true impact on the target group or community. A variety of questions may be addressed during this stage. It is important to remember that different questions may be important to different stakeholders and implementers of the program. As much as possible, evaluations must be designed to answer pertinent questions for all stakeholders and implementers involved with the program. Standardized tools may be employed or tools may be developed specifically for the program to answer these critical questions. For example: Were the aims of the program met, partially met, or not met at all? What contributed to the program’s overall success and/or shortcomings? Was the program carried out as planned within the timelines? Were the outcomes or results of the program worth the effort and associated costs? What has changed as a result of the program being implemented?
Step VIII

This step serves as a vehicle for providing feedback related to the program findings and outcomes achieved to all stakeholders and implementers in reference to the program aims or goals. Although formal documentation of the evaluation is often a requirement for various health programs, informal mechanisms may also be employed. Regardless of how communications are delivered or their format, the goal of dissemination is to achieve full and impartial reporting and disclosure of the program outcomes in reference to its intended aims or goals. A checklist to consider during this stage may include tailoring the content of your report to the specific intended audience(s) (e.g., lay public, public health care professionals, governmental agencies, non-governmental agencies [NGOs]); explaining the focus of the evaluation; and listing both the strengths and limitations of the evaluation methods or tools employed.

SWOT (see Figure 10.5) is an acronym for Strengths, Weaknesses, Opportunities and Threats (Fraser and Stupak 2002; Helms and Nixon 2010). A SWOT analysis can be employed to identify both internal and external strengths and analysis of the proposed program along with potential barriers, gaps, challenges and opportunities.

A variety of forums can be employed to provide feedback to stakeholders and implementers of the program including the publication of the results (e.g., public health reports or bulletins, peer-reviewed journals, conference proceedings); online forums (e.g., e-mails, a website developed for the program); social media (e.g., Facebook, Twitter, YouTube); town hall meetings or public lectures; and the mass media (e.g., local newspapers, television, radio).

A cost analysis of the program may also be provided at this stage, and which evaluates the total costs of the program in relation to actual health outcomes (e.g., program total accounting costs; cost benefit and effectiveness analysis). Conclusions reached can be strengthened by providing stakeholders and

Photo 10.7 A research poster presented at an international research conference related to Alzheimer’s disease. The last step of the program planning and evaluation process is dissemination and communication of the findings observed in a timely, unbiased and consistent fashion. Bartfay, E, and W.J. Bartfay: A Comparison of the Effect of Adult Day Programs on the Quality of Life of Alzheimer’s Disease Patients. The 25th International Conference on Alzheimer’s Disease International, March, 2010, Thessaloniki, Greece (Poster: P043).

Figure 10.5 The SWOT method.

Note: Users of the SWOT method need to ask and answer questions that generate meaningful information for each of the categories (strengths, weaknesses, opportunities, and threats) in order to generate meaningful analysis.
implementers with plausible mechanisms that resulted in noted health outcomes achieved; delineating a temporal order between the sequence of program interventions or activities and outcomes achieved; searching for possible alternative explanations based on similar findings from the empirical literature; and demonstrating the desired outcomes were replicable in users of the program.

Lastly, recommendations are actions for future consideration that result from the evaluation process. For example, knowing that a specific community-based fitness program for young adults may reduce the risk of developing heart disease or stroke does not necessarily translate into a recommendation to continue the effort, especially when competing priorities or other effective alternatives exists. Hence, recommendations for continuing, expanding, redesigning or terminating a specific program should be viewed as separate judgments regarding a program’s overall effectiveness or impact factor. Refer Web-Based Resource Box 10.2 for additional resources related to program planning and evaluation.

What Are Program Logic Models?

There are numerous program planning and evaluation models that provide frameworks or guides to assist public health care professionals and workers to collect, organize and utilize evidence-informed data to form coherent action plans for public health. However, there are often several factors that need to be considered when choosing a particular framework or guide. For example, most public health agencies utilize a standardized planning framework or guide that is often employed across disciplines and departments. A particular framework or guide may also be a funding program requirement by private or government organizations, NGOs and institutions (e.g., to define and examine the underlying social-environmental determinants of the health problem). In addition, the selection of a particular framework or guide may be influenced by a set of underlying principles or social values deemed critical for the specific public health program in Canada or abroad internationally (e.g., participatory decision-making or social justice).
Although a discussion of all the available frameworks and guides available to health care professionals and workers is beyond the scope of this chapter, we shall provide an overview of the program logic model that is used extensively in many municipal, regional, provincial and federal governmental public health agencies in Canada (Mullet 1995; National Collaborating Centre for Methods and Tools 2010; Porteous, Sheldrick, and Stewart 1997, 2002; Public Health Agency of Canada 2008; Wooten et al. 2014) (see Figure 10.6).

Program logic models are often employed by public health agencies and institutions in Canada because of their simplicity for use and ability to clearly reveal program interrelationships and linkages (Cooksey, Gill, and Kelly 2001; Porteous, Sheldrick, and Stewart 1997, 2002). The logic model provides a diagram of what the program is supposed to do, with whom and why (Porteous, Sheldrick, and Stewart 2002). Development of a logic model consists of two main planning stages: (a) Components, Activities and Target groups (CAT) and (b) the Short-term Outcomes and Long-term Outcomes (SOLO). During the CAT stage, activities are typically clustered thematically into components for the public health program under consideration or review. For example, a program to address the prevention of sexually transmitted infections (STIs) on a First Nations reserve may include the components of risk assessment, targeted face-to-face and web-based health education in schools and/or community centres, and support for community workers and teachers. The activities are the specific intervention strategies that are employed as a primary health care intervention (e.g., development of a website targeting Aboriginal youth; providing information and resources to community workers, teachers and parents). The target groups are the intended recipients of the specific community-based primary prevention program (e.g., Aboriginal youth).

During the SOLO stage, short- and long-term health-related outcomes of the community-based STI primary prevention program are identified. The short-term outcomes are the immediate effects of the program. For example, increasing knowledge related to the types of STIs, their possible clinical manifestations and outcomes and primary prevention strategies that can be employed to prevent their occurrence (e.g., latex condoms, abstinence). Building the knowledge base of parents related to STIs, community workers and teachers may also be a short-term goal that can be assessed. The long-term outcomes may involve the achievement of goals related to decreasing incidence rates of STIs, clinical interventions (e.g., prescription of antibiotics to treat bacterial STIs such as syphilis, chlamydia and gonorrhoea) and associated clinical complications for this targeted First Nations Reserve over the course of a five-year plan.

Figure 10.6 shows the Program Evaluation Toolkit employed by the Public Health Agency of Canada (2008). This toolkit is based on a program logic model and highlights which specific evaluation processes can be employed to inform and assist with the decision-making process during program planning and implementation. It is based on a relatively inexpensive do-it-yourself approach and is designed to be user friendly and free of technical jargon. The toolkit has been developed specifically to evaluate public health programs based on five basic steps: (a) focus the evaluation; (b) select methods; (c) develop tools; (d) gather and analyze data; and (e) make decisions (see Figure 10.6). The toolkit is presented as a series of short learning modules with simply explanations and specific tools, and worksheets are provided to assist individuals through the process (Public Health Agency of Canada 2008). The toolkit is tailored specifically to the decision-making needs of managers of public health programs, public health officials, and frontline field staff plus anyone assisting with evaluation, such as health unit program evaluation specialists, epidemiologists, public health nurses, health planners and educators, information analysts, or outside consultants. The toolkit presents a decision-orientated model of program evaluation and has been specifically designed as a concise in-house guide to the necessary steps and processes involved (Public Health Agency of Canada 2008).

The evaluation component is a dynamic and ongoing process that helps to support and guide programs, their refinements, along with previously unknown gaps, deficiencies, and/or flaws in the original design of the public health program. This toolkit can be used in conjunction with community stakeholders and groups to help build partnerships when engaging in program planning and evaluation. Indeed, involvement of all community stakeholders, public health professionals and workers, agencies, and organizations will help to build and foster commitment to the public health program and aid in its design, implementation, and evaluation of outcomes achieved.
What Is Health Services Research?

A brief overview of health services and outcomes research shall be highlighted in this section to familiarize the reader with these associated terms. A health service is simply any primary health care service provided by a public health care professional or worker for the purpose of maintaining, promoting, protecting, and/or restoring the health of diverse populations across the lifespan (Bartfay and Bartfay 2015). Health services research (HSR) is defined as an integrative and multidisciplinary scientific field that involves the integration of knowledge, the study and evaluation of the organization, and functioning and performance of health services (Bartfay and Bartfay 2015). Health services research does not involve a specific research design or methodological approach per se, but is a field of scientific inquiry that seeks to better understand organizational influences, functions and the performance of various health services provided. According to Porta (2008, 113), HSR requires the formal evaluation of four critical components:

1. **Structure**—which is concerned with resources, facilities, and human resources available.
2. **Process**—which seeks to evaluate matters related to the where, by whom and how health care services are provided.
3. **Output**—which is concerned with the amount and the exact nature of health services provided.
4. **Outcome**—which is ultimately concerned with the results of the health services provided based on measureable benefits (e.g., improved survival rates, decreased mortality rates, improvements related to DALYs).

HSR investigations seek to determine how various personal behaviours, economic and sociopolitical factors, financing systems, organizational structures and processes, the availability of various laboratory and
diagnostic imaging technologies, and geography affect access to public primary health care services, their overall costs and quality and their health impact in terms of quantity and quality of life measures. The primary aims of HSR is to improve the overall quality of primary health care services provided to diverse populations across the lifespan; determine the most effective and cost-efficient ways of managing and delivering these health care services; reduce errors by health care personnel; and to improve overall client safety and satisfaction (Agency for Healthcare Research and Quality 2002).

What Is Outcomes Research?

An outcome for a public health service provided includes all possible results (negative, positive or neutral) that may stem from exposure to a known causal factor (e.g., H1N1), determinant of health and/or from a primary health care intervention (Bartfay and Bartfay 2015). End results may include such things as mortality, survival, disability, individual's experience with the public health services provided and morbidity measures such as their overall health-related quality of life (Black and Gruen 2005; Clancy and Eisenberg 1998). Outcomes research is designed to critically and objectively examine and document the effectiveness of health-care policies and services and the end results of care provided to clients (Bartfay and Bartfay 2015).

Outcomes research examines the specific outcomes of primary health care interventions and seeks to understand why these end results were obtained or not. Outcomes research seeks to provide important insights about making public health services efforts more effective, equitable, timely and client focused by filling in the gaps in evidence needed by health care professionals and workers and the individuals they serve to make informed decisions in concert. Outcomes research, in other words, seeks to provide evidence about which primary health care interventions work best for each client and under what specific circumstances. The urgent need for outcomes research was highlighted in the early 1980s, when researchers discovered that geography is destiny (Agency for Healthcare Research and Quality 2000). Time and again, studies documented that certain routine medical procedures (e.g., hysterectomy, hernia repairs, cardiac bypass surgeries) were performed much more frequently in some areas than in others, even if there were no differences in the underlying rates of disease. Furthermore, there was often no information about the end results for the individuals who received a particular procedure, and few comparative studies were undertaken to show which interventions were most effective or had the most beneficial health-related outcomes (Agency for Healthcare Research and Quality 2000).

The Research Focus Box 10.2 highlights the results from a two-generation program designed to address the link between the lack of school readiness in children and parenting stress and the social determinants of health involving poverty, unemployment and inadequate housing. The researchers employed outcomes research to determine the effectiveness of this community-based program.

In the formal appraisal of health care outcomes, various factors need to be considered. Donabedian (1987), whose pioneering efforts in this field of scientific inquiry, created a simply framework for conducting outcomes research that consists of the following three factors:

**Research Focus Box 10.2**

What are the short-term effects of a two-generation preschool program on parenting stress, self-esteem, life skills, and children’s receptive language?

**Study Aim/Rationale**

Poverty and its associated sequelae is a critical determinant of health, especially for young children and their families. There is a proposed link between the lack of school readiness in children and parenting stress associated with poverty, unemployment and inadequate housing. The aim of this two-generation program was to determine if early interventions addressing the needs of parents and their preschool children could offset negative associated health effects.
Methodology/Design
Outcomes research was utilized to determine the effectiveness of a two-generation program which consisted of early childhood education (20 hours per week provided by the Centre), parenting life skills education (designed and implemented by off-site program staff members), and family support administered by social workers in the home setting. This multi-intervention program was offered to interested parents and children at no costs and a pretest–posttest experimental design study was employed to evaluate changes to outcomes. Specifically, caregivers were asked to complete a parenting stress index, community life skills scale, and a self-esteem scale at the onset of the program and upon its completion. Fifty-five caregivers of seventy-six preschool-aged children partook in the portion of the study examining the impact of the program and 112 children participated in the child outcomes portion.

Major Findings
In comparison to pretest measures, parents who attended the program reported significantly decreased parental stress and defensive responding, decreased total stress, increased levels of self-esteem and an increase in daily management skill scores. Preschool-aged children demonstrated a statistically significant improvement in receptive language skills. Interestingly, for Aboriginal children who partook in the program, a longer duration of time in the program was associated with increased gains in language skills.

Implications for Public Health
These findings suggest that the program had a positive effective on both parents and children who partook in the program. Moreover, appropriate and timely supports and services for low-income families may help to reduce the negative impacts of their financial status.

Source: Benzies et al. (2009).

1. Structure of care—which refers to the broad organizational and administrative features (e.g., type of facilities, technologies employed, range of services provided, size, location, organizational climate);
2. Processes—which include the various aspects of clinical care provided, clinical management, decision-making processes and health care interventions; and
3. Outcomes—which refer to the specific outcomes achieved as a result of a given primary health care intervention carried out.

By providing a critical link between the health services individuals access and those that are offered or provided with and the actual outcomes they experience, outcomes research has become a critical component to develop better ways to monitor and improve the quality of care (Agency for Healthcare Research and Quality 2000; Black and Gruen 2005). Moreover, governments, NGOs, public health institutions and departments, and policy makers are all interested in identifying ways to improve the quality and value of health care services while decreasing their associated costs. Mitchell, Ferketich, and Jennings (1988) argue that the emphasis on evaluating quality of care has shifted from structures (having the right things) to processes (doing the right things) to outcomes (having the right things happen).

Photo 10.8 Youth engaged in “tagging their territory” via graffiti. Ethics deals with the study of human nature, behaviours, and decisions surrounding ethical or moral issues in society.
Ethical Considerations for Public Health Professionals and Workers

**Ethics** is defined as a branch of philosophy which deals with the study of nature and justification of principles that guide human behaviours and decisions and are applied when moral issues or dilemmas arise (Bartfay and Bartfay 2015). **Public health ethics** is defined as a practical means of collaboratively determining a moral course of action with all stakeholders concerned and their impacts and consequences (Bartfay and Bartfay 2015). It may be argued that public health ethics focuses more on issues related to the interaction of individuals, families, communities and entire populations, reflecting on collective responsibilities, and common goals or desires. The right to health care includes the right to goods and services to maintain and promote health across the lifespan (Commission on the Social Determinants of Health 2008).

Hardly anyone would question the many positive contributions and ripple effects achieved via public health programs, activities, and policies in regards to improving the health and well-being of various groups, communities and entire populations across the lifespan. At first glance, public health policies (e.g., tobacco legislation, compulsory seat belt use) and programs (e.g., immunization, promoting active lifestyles, and healthy eating) may appear sufficient to ethically justify their need and impact for preserving and promoting health and for prevention disease and illness. But a moment of critical reflection makes it apparent that there are several ethical issues and challenging questions that need to be considered throughout the program planning and evaluation process in public health (Arah 2009; Baylis, Kenny, and Sherwin 2008; Buchanan 2008; Gostin and Gostin 2009).

Recent public health events, such as SARS, H5N1, and the Walkerton E.coli outbreak, along with the growing recognition of the disparities present for certain populations (e.g., Aboriginal peoples, immigrants, elderly) in terms of the social determinants of health (SDH), have reinforced the need for ethical reflection in practice (Dawson and Verweij 2007; Holland 2007; University of Toronto Joint Centre for Bioethics 2012). For example, when a particular communicable disease begins to affect a larger than usual number of people, or to circulate globally among populations that have little or no immunity against it (e.g., SARS, AH1N1), the specific program aims of public health interventions, programs, policies or legislations and how they should be prioritized requires that difficult decisions be made for the “collective good” of society. Indeed, during a global pandemic, the area of communicable disease control in public health has no shortage of ethical issues related to mandatory reporting requirements, trade and travel restrictions, quarantines, school closers, bans on public gatherings, staffing management and workplace safety assurances, contact tracing and the use of public health powers and legislation to alter behaviour, to name but a few public health actions that may be required (Barry 2009; McDougal 2010; Paranthaman et al. 2009).

The PHAC (2012) reports that there is a growing need to consider the ethical foundations for and implications of our work in public health, and to need to reflect upon the values underlying public health practice in Canada. The **Chief Public Health Officer’s Ethics Advisory Committee** assists with integrating ethical thinking into the development of public health policies, programs, and services (PHAC 2012). The PHAC (2013) has released a set of thirty-six core competencies deemed essential for all public health professionals and workers in Canada. Refer Chapter 1 for a detailed discussion of these thirty-six core competencies. Unfortunately, specific competencies related to ethical decision-making or practice per se for public health professionals and workers are not clearly identified in the document, but inferred or implied as highlighted by the following quote:

> All public health professionals share a core set of attitudes and values. These attitudes and values have not been listed as specific core competencies for public health because they are difficult to teach and even harder to assess. However, they form the context within which the competencies are practiced . . . If the core competencies are considered as the notes to a musical score, the values and attitudes that practitioners bring to their work provide the tempo and emotional component of the music. One may be a technically brilliant musician but without the correct temp, rhythm and emotion, the music will not have the desired effect.

—PHAC 2013, 3
Rapid advances in the allied health sciences and health care technologies have precipitated a dramatic rise in ethical dilemmas for public health care professionals and workers. Ethical questions often arise when sociocultural values, norms or expectations are infringed upon. For examples, what if the aims or goals of the proposed program infringes on individual civil liberties or shared values of minority groups or vulnerable populations or communities (e.g., immigrants, Aboriginal peoples, homeless, unemployed)? How far should public health programs go in presenting health information campaigns for protecting the health of the majority without unduly stigmatizing individuals or groups by making them feel guilty for their non-compliance (e.g., smokers, individuals who are obese)? Should society stigmatize women who choose to feed their new born infants with infant formula as opposed to breast feeding, despite the many noted health benefits for both mother (e.g., decreased incidence of breast cancer) and child (e.g., passive immunity)? Hence, we argue that program planning and evaluation is an inherently value-laden process that also requires ethical reflection and consideration in order to comprehend and negotiate the potentially conflicting fundamental values of public health professionals and workers and stakeholders who will ultimately be affected. Table 10.4 provides a list of some basic ethical principles relevant to the practice of public health, what they entail and examples of each (Dawson 2007; Holland 2007; McDougal 2010; Nuffield Council on Bioethics 2007; University of Toronto Joint Centre for Bioethics 2012).

### Table 10.4 Basic Ethical Principles

<table>
<thead>
<tr>
<th>Ethical Principle</th>
<th>What the Principle Entails</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>Autonomy</td>
<td>Deals with respect for persons and the right to self-determination and destiny. (Note: Informed consent, confidentiality, fidelity, and veracity all rely on the acceptance and exercise of this principle).</td>
<td>Allowing a client in their home the right to refuse a treatment or intervention (e.g., IV medication, dressing change, insertion of a Foley catheter).</td>
</tr>
<tr>
<td>Active collaboration</td>
<td>Requires formalized input from public health professionals and workers and all stakeholders considered in order to ensure active discussions, decision-making, prioritization of needs, education, and communication.</td>
<td>Holding a community-based meeting to discuss a proposal related to fluoridation of drinking water supplies on a First Nations reserve with several boil water advisories.</td>
</tr>
<tr>
<td>Beneficence</td>
<td>Deals with doing or promoting good that requires abstention from injuring others, and the promotion of the opinions or interests of others primarily by decreasing, preventing or limiting possible harms.</td>
<td>Installing hand-rails and other safety equipment in an elderly client’s bathroom to prevent falls.</td>
</tr>
<tr>
<td>Equitable processes</td>
<td>Requires that specific protocols, plans, and/or standards be collective made by all stakeholders concerned via an open, transparent, and accountable process, as well as the formal application of the decisions made in a consistent manner without discrimination and in proportion to the identified need, degree of scarcity, and/or scale of the public health emergency identified.</td>
<td>During a global pandemic when there may be a scarcity of vaccines available, priority will be given to high-risk individuals (e.g., elderly, children, individuals with chronic diseases and those immunocompromised) in community-based immunization clinics.</td>
</tr>
</tbody>
</table>
We argue that public health is, by its very nature, both a normative and acculturative practice. It is normative because it recommends or makes inferences about what is “good health” and how to preserve, maintain, and promote it; what are acceptable versus unacceptable risks and environments. Given that many health-related behaviours, practices, lifestyles, and/or environments are contextually bound in social and cultural values, public health is therefore also an acculturative enterprise. Ethics in public health, therefore, involves applying a critical, analytical, and value-laden lens to address a particular need, program or policy. Refer Chapter 1 for a detailed discussion on how health, disease, illness, and sickness are influenced by various social, cultural, and environmental factors.

Understanding ethical principles and theories are helpful to address ethical issues and moral planning and decision-making related to ethical practices, policies and programs for all stakeholders concerned (Dawson and Verweij 2007; Holland 2007; Nuffield Council of Bioethics 2007; Thompson 2010). Ethical decisions in health care are guided primarily by two classical ethical theories: (a) deontology and (b) teleology, especially the utilitarianism form. **Deontology** is defined as the classical ethical theory based on moral obligations and duties that require individuals to act in certain ways in response to moral, cultural and social norms, and expectations or motivations (Bartfay and Bartfay 2015). **Teleology** is defined as a classical theory that determines rightness or wrongness based solely on the basis of an estimate, likelihood or probably outcomes.

### Table 10.4 Basic Ethical Principles (Continued)

<table>
<thead>
<tr>
<th>Ethical Principle</th>
<th>What the Principle Entails</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fairness</td>
<td>Requires that decisions and public health interventions be based on the best available evidence and be responsive to the needs of those affected, acceptable to all, while respecting professional obligations and duties related to care, compassion, resource stewardship, and maintenance of public trust.</td>
<td>Setting up a mandatory screening station outside all public health facilities to screen all health professionals and workers and the general public prior to entrance (e.g., temperature check, screening survey related to travel abroad, fever, coughing) during a global pandemic (e.g., SARS).</td>
</tr>
<tr>
<td>Fidelity</td>
<td>Deals with keeping/honouring one's promise made to others.</td>
<td>A public health nurse makes a follow-up home visit to a client in the community at the agreed-upon date and time.</td>
</tr>
<tr>
<td>Following the Rule of Law</td>
<td>Requires that appropriate public health legislations, actions, standards, and/or incentives are only made by the proper designated public authorities (e.g., Minister of Health) or agencies (e.g., Health Canada, PHAC) via appropriate processes and laws.</td>
<td>A decision by the federal government to increase taxes on tobacco products sold in Canada as a means to discourage smoking by individuals and associated negative health outcomes.</td>
</tr>
<tr>
<td>Non-maleficence</td>
<td>Deals with doing no harm to the client.</td>
<td>A public health nurse helps a homeless man in distress to a community clinic for follow-up diagnostic services.</td>
</tr>
<tr>
<td>Social Justice</td>
<td>Deals with the issue of fairness that an individual is entitled to, deserves or has a legitimate claim to.</td>
<td>A client is placed upon the provincial waiting list for cardiac surgery based on priority needs.</td>
</tr>
<tr>
<td>Veracity</td>
<td>Deals with telling the truth to clients.</td>
<td>A public health professional informs a teen that they have contracted a STI based on laboratory findings.</td>
</tr>
</tbody>
</table>
Utilitarianism is one form of teleology which is based on usefulness or utility of the outcomes achieved. The utility of action is decided on the basis of whether the action would bring about the greatest number of beneficial outcomes or consequence, and has a long association with public health. Some argue that public health may be envisioned as the practical implementation of a utilitarian ethic (Dawson 2007; Holland 2007; Nuffield Council on Bioethics 2007; University of Toronto Joint Centre for Bioethics 2012). To assist the reader in distinguishing between the two theoretical positions, consider the issue of an abortion resulting from severe trauma following a motor vehicle accident (MVA). To the deontologist, abortion remains unjustifiable even if it may save the life of the mother due to complications (e.g., serious internal injuries sustained and bleeding) because the action would violate the moral duty to preserve life and avoid killing at all cost. On the other hand, a utilitarian may argue that preserving the life of the woman is justified by aborting the foetus in utero, which will allow her to recover, return to her family or to contribute to society in general. Although the abortion of the foetus is viewed as tragic by the utilitarian, this action represents the potential for greater good than allowing both the foetus and mother to die as a result of the MVA.

In the past decade, considerable attention has been devoted to the existence of inequities leading to disparities in reference to access to public health care services and health outcomes, which are rooted in our greater understanding of the SDH (Commission on the Social Determinants of Health 2008; Raphael 2009). Refer Chapter 1 for a detailed discussion on the fifteen SDH. The existence of these marked disparities has led to the analysis of the relationship between social justice and public health (Commission on the Social Determinants of Health 2008; Powers and Faden 2006; University of Toronto Joint Centre for Bioethics 2012). For example, Powers and Faden (2006) argue that a social justice lens addresses the twin moral impulses that bring to life the practice of public health:

\[ \ldots \text{to improve human well-being by improving health and to do so in particular by focusing on the needs of those who are the most disadvantaged. A commitment to social justice } \ldots \text{attaches a special moral urgency to remediating the conditions of those whose life prospects are poor across multiple dimensions of well-being. Placing a priority on those so situated is a hallmark of social justice.} \]

—Powers and Faden 2006, 82

We argue that for public health ethics to contribute to effective program planning and evaluation, policy and practice, it must be understood in the context of an applied ethics that is relevant to all public health professionals, workers, and stakeholders concerned (Bartfay and Bartfay 2015). No one ethical principle, theory or framework will be appropriate for all situations, needs or decisions ultimately reached based on some magical algorithm that always provides the right moral solution. These are simply meant to assist with the systematic and transparent examination of the issues, including consideration of the interests of all stakeholders concerned. A discussion of all professional ethical codes of practice, principles, and frameworks for decision-making in public health is beyond the scope of this chapter. The Web-Based Resource Box 10.3 provides various ethical codes for health care professionals in Canada, frameworks, guides, and aids to assist with formal training, skills, and professional competencies related to ethical analysis and practices in the public health context.

**Future Directions and Challenges**

Primary health care is an integral part of the Canadian health care system and provides a set of guiding principles for public health professionals and workers to help empower citizens to make informed decisions about their health and well-being, build community capacity, and promote harmony with our environments (Bartfay and Bartfay 2015; Budgen, Cameron, and Bartfay 2010; English 2000; McKnight 2001). To reach this aim in public health, we must devote our knowledge, clinical skills and will to planning for effective primary health care services and also formally evaluating the impact of these public health actions.
Program planning and evaluation are also critical components for project management. In October 1969, the Project Management Institute (PMI) was founded as a global non-profit professional organization for professionals in this noted field (Sliger and Broderick 2008; PMI 2013). The objectives of the PMI are to foster professionalism in the field of project management; provide a forum for the exchange of problems, solutions, and applications; coordinate both industrial and academic research efforts in this field; develop common techniques and terminology; provide interface between users and suppliers of software and hardware products for project management activities; and provide guidelines in reference to career development.
Program Planning and Evaluation in Public Health

(see link: http://www.pmi.org/). The PMI offers a range of services including the development of standards, research, education, publications, networking opportunities in local chapters, conferences and training seminars and for obtaining additional training and credentials related to project management. Currently, there are PMI chapters in various cities across Canada including Victoria, Vancouver, Calgary, Edmonton, Saskatoon, Region, Winnipeg, Kitchener, London, Mississauga, Toronto, Oshawa, Ottawa, Montréal, Québec City, Fredericton, Saint John, Moncton, Halifax, and St. John's.

As the primary targets of public health interventions have greatly expanded over the past few decades in Canada beyond the management and prevention of communicable diseases to include non-communicable and chronic diseases, domestic violence, an aging population, emerging pathogens (e.g., H1N1, West Nile Virus), threats of bioterrorism, climate change and the social determinants of health, and so on, the task of program planning and evaluation for public health has become more complex and fluid in nature. As these public health challenges expand, so do the associated costs. For example, it is generally agreed upon that health care costs tend to increase with age in Canada due to a growing number of associated disabilities and the higher incidence of chronic disease. For example, in 2015 health care costs exceeded $219.1 billion or $6,105 per Canadian under the age of 65; compared to $11,557 for those 70–74 years, and $20,917 for those 80 years and older (CIHI 2015).

Program planning and evaluation in public health should not occur in isolation from the setting or situation, but should consist of an interdisciplinary team of health care professionals, community stakeholders, governmental and NGOs, and institutions in order for the program to be ultimately successful in achieving its short and long-term goals. Budgen, Cameron, and Bartfay (2010) note that thoughtful consideration of the context within which a health program will be developed and implemented contributes directly to the program's overall success. Local contexts are nested with regional, national and international contexts. Although these contexts may vary considerably, important factors and trends relevant to health usually can be identified if the public health care professional or worker is open minded, observant and questioning and works in partnership with the community or target population.

Regional, national or international health programs often consist of a web of complex and interacting determinants of health. Poverty and its associated outcomes (e.g., inadequate housing, malnutrition), for example, is an important SDH across the lifespan in Canada and globally (Commission of Social Determinants of Health 2008; Raphael 2008). The challenge is to acknowledge and identify the often complex web of relationships and associated outcomes during the program planning and evaluation process for these determinants of health.

Dramatically changing and/or evolving technologies have created an unprecedented flow of health-related information, screening, and diagnostic tools as well as advancements in how various health-associated conditions are managed. For example, until the 1960s, all health care professionals could offer an individual with kidney failure was supportive and/or palliative care until they finally succumbed to their condition. Shortly after, the available options greatly increased with the introduction of dialysis to clinically manage the condition, followed by kidney transplantation. All of these had to be formally evaluated in terms of their effectiveness and impact on the clients receiving these treatment options (Dieppe 2007). Although new treatment regimens often result in limited gains in terms of the total years of survival or cure per se, it could be deemed preferable if the individual's perceptions of their broader health-related quality of life were improved by adopting these.

The increasing emphasis on the individual's perspective of primary health care services received during the past few decades in Canada has created a paradigm shift in the approach to the operationalization and measurement of the impact of health outcomes achieved. Making an overall judgment about the quality of primary health care services received requires, therefore, a complex assessment of the individual's experiences and health care priorities. These health care priorities are often fluid in nature and change and evolve due to a variety of health events and challenges. National and international social-political, economic and environmental forces and trends (e.g., 2009 global recession, climate change, bioterrorism) are driving health care reforms and a multitude of proposed healthcare approaches with ethical, legal, social, cultural and economic implications, as well as negative iatrogenic health effects (Armstrong et al. 2000; Budgen, Cameron, and Bartfay 2010; Canadian Public Health Association 2000). Public health care professionals and workers should anticipate
encountering these forces and dilemmas in their practice. Societal trends are significant to program planning and evaluation because they are directly linked to the community and the types of programs that would be most useful.

For example, unemployment in the auto sector in the Durham Region of Ontario during the recent global economic recession in 2009 had significant negative social-psychological, economic and physical health effects on unemployed autoworkers and their families (Bartfay, Bartfay, and Wu 2011, 2013). Programs directed at supporting laid-off autoworkers and their families are imperative during economic downfalls resulting in unemployment. These programs may include community-based support groups and resources, housing, medication and dental assistant programs, food banks, and job retaining. Health care professionals and workers who consider current and emerging health care challenges and societal trends can use this knowledge to avoid pitfalls, realize opportunities and increase the likelihood that the program will be successful (Bartfay and Bartfay 2015). Indeed, opportunities for program planning and evaluation in Canada and globally have never been greater.

**Group Review Exercise Child family health program planning in public health: What’s the evidence?****

**About this public health webinar**
This ninety-minute webinar first aired on February 2, 2012, and was hosted by Maureen Dobbins, the Scientific Director of Health Evidence. This webinar focused on child and family health program planning in public health and examined the evidence presented on the following four systematic reviews of the scientific literature. The first systematic review in this webinar focused on Internet-based innovations for the prevention of eating disorders (also see Newton 2006 at http://www.health-evidence.ca/articles/show/16914). The second examined alternatives to inpatient mental health care for children and young people (also see Shepperd 2009 at http://www.health-evidence.ca/articles/show/19286). The third systematic review consisted of internet-based self-management interventions for youth with health conditions (also see Stinson 2009 at http://www.health-evidence.ca/articles/show/20114). The last systematic review in this webinar examined the literature related to supplementation with calcium to improving bone mineral density in children (also see Winzenberg 2006 at http://www.health-evidence.ca/articles/show/17768). This webinar also hosted an online discussion which allowed participants to further discuss these presentations, pose additional questions and comments and also share information with other public health care professionals and workers. This webinar helps to highlight the importance of program planning in evaluation in public health and the importance of critically evaluating the scientific literature to help guide evidence-based practice related to child and family health programs in the community.

**Instructions**
This assignment may be done alone, in pairs or in groups of up to five people (note: if you are doing this assignment in pairs or groups, please only submit one hard or electronic copy to your instructor). The assignment should be typewritten and no more than 4–6 pages maximum in length (double-spaced please). View the ninety-minute webinar and take notes during the presentations. See link http://www.youtube.com/watch?v=TtrErDzd9g (and links noted above for specific topic systematic reviews).

1. Provide a brief overview of the importance of examining the empirical evidence in reference to program planning and evaluation in public health.

2. Provide a brief summary of the salient findings highlighted in the four systematic reviews.

3. Describe some of the social determinants of health described in these four systematic reviews of the literature and their implications for public health practice.
Summary

- Program planning is defined as an organized and structured systemic decision-making process which attempts to meet specific primary health care aims or objectives through the application of currently available, competing or needed resources in the future based on identified priorities or projected needs.
- Strategic or allocative planning is defined as an open and transparent formalized decision-making process which seeks to determine which health care needs should be addressed in accordance with the available resources and closely resembles policy making.
- Operational or activity planning is defined as a formalized decision-making process which focuses on the implementation of plans based on detailed time frames.
- Program evaluation is defined as a formalized ongoing and dynamic process which seeks to monitor, assess and refine health program activities and interventions and to identify gaps or actual or potential flaws in the original program design and implementation.
- Evaluation in public health may be viewed as a process that is ultimately intended to determine the worth of something, presumably in comparison with some norm or standard of goodness.
- There are a variety of program evaluation types that can be broadly classified into the following three main categories based on when the evaluations are being conducted and the type of information being collected: (a) formative, (b) process, and (c) summative.
- Outcome measure evaluates what specifically occurred as the result of the health program being implemented in terms of its noted aims or goals.
- Impact measures are used to evaluate the effect of the implemented health program on the users, stakeholders and implementers and specifically measures what changes (positive, negative or neutral) occurred as a result of the program.
- There are eight critical steps in the program planning and evaluation process:
  - Step I includes the need to conduct a needs assessment and the active engagement of stakeholders and implementers (e.g., public health nurses).
  - Stakeholders are defined as all individuals or groups (both internal and external) who have an interest in the program or those who may be affected by the program either directly or indirectly including community volunteers, potential program participants, policy makers, governmental agencies, NGOs or industry.
  - Step II requires that the stakeholders and implementers collectively describe and detail the program’s aims or goals.
  - Step III involves the development of a draft proposed action plan, design, or approach and a proposed evaluation model based on the best available evidence.
  - Step IV consists of seeking feedback from the stakeholders and implementers regarding the draft proposed action plan, design or approach and proposed evaluation model.
  - During Step V, the action plan, model or design is formally refined based on the feedback and suggestions received.
  - Step VI consists of the formal implementation of the action plan, model or design.
  - Step VII consists of the evaluation the successes and outcomes of the program via the formal documentation of the evidence and outcomes achieved to justify the conclusions reached.
  - Step VIII involves the dissemination of the program findings and outcomes achieved with the stakeholders and implementers.
- The program logic model is used extensively in many municipal, regional, provincial and federal governmental public health agencies in Canada.
- The development of a logic model consists of two main planning stages: (a) CAT and (b) SOLO.
- During the CAT stage, activities are typically clustered thematically into components for the public health program under construction or review.
During the SOLO stage, short- and long-term health-related outcomes are identified. An example of the program logic model.

HSR is defined as an integrative and multidisciplinary scientific field that involves the integration of knowledge, and the study and evaluation of the organization, functioning and performance of health services.

HSR requires the evaluation of the following four critical components: (a) structure, (b) process, (c) output, and (d) outcome.

Outcomes research seeks to study the specific outcomes of primary health care interventions and seeks to determine why these end results were obtained or not and is designed to critically and objectively examine and document the effectiveness of health care policies and services and the results of care provided to clients.

The emphasis on evaluating the quality of primary health care interventions has shifted from structures to an understanding of the critical processes involved.

Public health care professionals and workers need to be cognizant of various ethical principles and dilemmas that may arise during the process of program planning and evaluation.

Critical Thinking Questions

1. Your health care agency is collaborating with a senior’s advocacy group in your community to address the issue of elder abuse. What are some of the underlying SDH that may put seniors at risk? How would you conduct a needs assessment to address these issues?

2. Based on the elder abuse issue above, what types of evidence would you need to collect or assemble to support the need for the development of an elder abuse prevention program in your community? What specific levels of prevention do you believe need to include and how would you prioritize them?

3. What would the specific aims or goals of your community-based elder prevention program be, and how would you determine its impact factor or success?

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