

TOWARDS AN INTEGRATED CASE-BASED PUBLIC HEALTH CURRICULUM

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BACKGROUND

In our inaugural year, 2013-14, our one-year Master of Public Health (MPH) program required six courses in the fall, and another eight courses in the winter. These courses represented the five core disciplines of public health (e.g. biostatistics, environmental health sciences, epidemiology, health services administration, and social and behavioural sciences) as well as cross-cutting areas such as Developing Healthy Communities, and Leading People and Organizations in Public Health. In our adaptation of case method learning, the classroom portion of the courses consisted of three 80-minute blocks from 8:00am to 12:30pm each day.

CULMINATING EXPERIENCE: TRANSFORMING PUBLIC HEALTH COURSE

The Council for Education in Public Health defines a culminating experience as an opportunity for learners to synthesize and integrate knowledge gained from coursework and other experiences, and apply it to a situation, issue, or problem that approximates one that could be encountered in public health practice (Council on Education for Public Health, 2011). Unlike other programs where a single culminating experience occurs at the end of the program, we incorporated this into our curriculum by designing a course called Transforming Public Health that ran across both fall and winter semesters. Specifically once in the fall semester, and twice in the winter semester, we scheduled an entire day for an integrated workshop. The purpose of this chapter is to describe the three integrated workshops from our first year in terms of their structure, the learning resources required, and their deliverables, and to provide a brief rationale for our choice of topics.

STRUCTURE AND LEARNING RESOURCES

Workshops began with a session in the large classroom, where guest speakers (topic experts and community representatives) introduced the learners to the issue or topic of the integrated workshop. The afternoons were heavily weighted towards group-based learning in the six-person learning teams. Learning teams were tasked with problems to solve with regard to the topic at hand. Guest speakers sometimes circulated amongst the learning teams, acting as a resource to the teams. Each integrated workshop typically concluded with brief presentations by each learning team, accompanied by feedback from faculty and guest speakers.

DELIVERABLES

The specific deliverables varied with the integrated workshop topic, but they were always a concrete product (e.g. a brief presentation, a written policy brief) produced by the learning team and posted to our learning management system by specified deadlines during the day.

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TOPIC PROGRESSION

We sought to have the integrated workshop topics build over the year in terms of complexity and the number of stakeholders potentially involved. In addition we looked for public health issues that were timely and controversial. In 2013-2014, the integrated workshop topics/situations were: i) the public health impacts of industrial wind turbines; ii) supervised injection facilities for individuals who use injection drugs; and iii) a chemical spill and refinery fire, and evacuation of the surrounding community.

PRIOR PREPARATION

In order to generate excitement and a 'real world' feel, we found it useful to keep the topic unannounced until very shortly before the workshop. In some cases we released selected readings on the previous day, and required team preparation the day prior to the workshop. This ensured our learners were prepared and that our guest speakers could assume a certain level of basic knowledge.

The following sections provide detailed outlines for the first two integrated workshops from 2013-14. These outlines were given to the learners the day prior to the workshop if preparation was required, otherwise at the beginning of the workshop as the basic information needed to start the day. Because the third integrated workshop was designed to mimic a disaster in which the situation changed quickly, we posted regular updates on our learning management system rather than distribute outlines. We describe our approach to integrated workshop #3 following the handouts we distributed for the first two workshops:

INTEGRATED WORKSHOP #1: THE CASE OF INDUSTRIAL WIND TURBINES

(Verbatim handout)

Background

Communities frequently face new situations that foster worries and questions about potential health impacts in the public, the government and other stakeholders. A recent example in Ontario is the installation of large industrial wind turbines (IWT) in rural areas.

Workshop

For this integrated workshop, your learning team will assume the role of a Public Health team that has been asked by a group of citizens to advise the broader general community (i.e. citizens, government, media and other stakeholders) on the community health impacts of industrial wind turbines.

To learn more about the issue, your team will attend a small conference on November 22 where two resource persons who have experience with IWTs will present their perspectives: a public health physician who has studied the literature on health impacts of IWTs and a community member who is concerned about IWTs in her rural community. Following the presentations, your learning team will have the opportunity to ask questions of these individuals to determine appropriate implications, uses, gaps and limitations of what we know about IWTs.

Your advisory response should be an appropriate public health response as viewed by your fellow public health professionals. To be credible, your response should be balanced, evidence-based, and professional. You should acknowledge sources of uncertainty, consider any trade-offs, and focus on the health of the entire community.

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Learning Team Preparation Beforehand

1. Based on learnings from your first semester coursework thus far, what are the key concepts and information you need to understand in order to approach this topic?
2. Using your deliberations in #1, develop (written) questions to ask the resource persons.

Learning Team Deliverables (end of workshop):

1. Prepare a 10-minute (maximum) presentation, suitable for a town-hall meeting, which summarizes the public health issues. Your presentation can include PowerPoint (no more than 10 slides), Prezi or other audio/visual aids.
2. In no more than one page (bullet-points), summarize any issues you were not able to mention in your presentation. Include a separate section summarizing your advice on the next steps the community should undertake.

Schedule

8:30-8:45	Introduction – Dr. Mark Speechley
8:45-9:10	Speaker 1 – Dr. Ray Copes “Evidence of health effects of wind turbines”
9:10-9:35	Speaker 2 – Ms. Esther Wrightman – “Community perspectives of wind turbines”
9:35-9:45	Short questions: Points of clarification
9:45-10:00	Break (Learning Teams review their prepared questions)
10:00-11:00	Q&A of prepared questions by Learning Teams
11:00-11:30	Learning Teams discuss and plan
11:30-12:30	Lunch (all)
12:30-3:00	Learning Teams prepare presentations & one page summary
3:00-4:30	Presentations
4:30-4:45	Faculty Debrief (grading of learners’ work)
4:45	Feedback to Learners

Purpose

This Integrative Workshop is one of the learning activities for MPH 9015Y Transforming Public Health. Its purpose is to introduce learners to an exercise of integration and synthesis of the materials covered to date in the fall semester courses:

MPH 9001A	Principles of Epidemiology
MPH 9002A	Statistical Methods in Health
MPH 9003A	Sustaining Environmental Health
MPH 9004A	Health Promotion
MPH 9005A	Social Cultural Determinants of Health
MPH 9006A	Developing Healthy Communities

The specific situation of public health impacts of Industrial Wind Turbines is used in the Integrative Workshop as context to which key concepts and learnings from each of the courses can be synthesized and integrated.

Objectives of the Integrative Workshop (same as the course MPH 9015Y Transforming Public Health):

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By engaging with your colleagues and professors after studying and thinking deeply about the material presented, you will be able to:

1. Analyze information from multiple disciplinary and indigenous stakeholder perspectives to determine appropriate implications, uses, gaps and limitations in a specific situation;
2. Determine the meaning of this information, considering the current ethical, political, scientific, socio-cultural and economic contexts;
3. Synthesize and integrate knowledge across disciplines, situation specific information and meaning of this information;
4. Recommend specific actions based on the analysis, synthesis and integration of information from multiple disciplinary and indigenous stakeholder perspectives; and
5. Revise judgments and change behavior in light of new evidence.
6. GRADING: Pass/Fail

Feedback from learners on IW1 was positive. While the time pressure and public presentations were a source of stress, the learners knew they were in a supportive environment and responded with highly professional presentations.

INTEGRATED WORKSHOP #2: THE CASE OF SUPERVISED INJECTION FACILITIES (*Verbatim handout*)

Background

Use of injection drugs has implications for personal health, as well as public health and public safety. In order to address this complex problem, collaborative strategies are required involving multiple stakeholders, including individuals who use injection drugs.

In September 2013, the Middlesex-London Health Unit presented a report to its Board of Health which discussed harm reduction strategies, including needle and syringe exchange programs, methadone treatment, opioid overdose prevention strategies and supervised injection sites <https://www.healthunit.com/uploads/2013-09-report-092-13.pdf> . In November 2013, the Health Unit presented another report to the Board outlining the results of a survey of people who use injection drugs in London. This survey found very high rates of hepatitis C and lower rates of HIV infections compared to similar national surveys <https://www.healthunit.com/uploads/2013-11-21-report-119-13.pdf> .

The Health Unit is currently working on a Health Status Report to further understand the drug use patterns and illnesses associated with injection drug use in Middlesex-London. This report will form the basis of planning a Municipal Drug Strategy, which will involve community partners in developing strategies to address the issues presented by injection drug use. An opioid overdose prevention strategy is currently being developed. Supervised injection sites or services are being considered in other cities and may also be a future consideration for London.

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Workshop

To learn more about the issue, your team will attend a half day conference on February 19 where four resource persons who are committed to addressing the issue of injection drug use in London, will present their perspectives: Dr. Bryna Warshawsky on behalf of Dr. Chris Mackie, Chief Medical Officer of Health , Middlesex-London Health Unit; Mr. Brad Duncan, Chief of Police, London Police Service; Dr. Lauren Cipriano, Assistant Professor of Management Science, Ivey School of Business; and Mr. Greg Thompson, Chair of the Urban League of London.

Your Task (Fictional Situation)

Dr. Mackie has recently received approval from the Board of Health, Middlesex-London Health Unit to move forward with the planning for London InSite, an organization to oversee and support supervised injection sites/services, prior to a request for funding for these services from the Provincial Government. To assist with this initiative, the position of Program Director, London InSite has been created. For this integrative workshop your learning team will assume the role of an applicant to this position. You have been short listed for the Program Director position at London Insite and have been asked to present your vision and implementation plan for London InSite to the selection committee. Following the presentations, your learning team will have the opportunity to ask questions of the four presenters. Information from all speakers can be used and where necessary your team can choose to seek out additional research to determine an appropriate vision and implementation plan for London Insite.

Learning Team Preparation beforehand

1. Based on learnings from your coursework thus far, what are the key concepts and information you need to understand in order to approach this topic?
2. Using your deliberations in #1, develop at least four (written) questions (per resource person) to ask each of the resource persons. Please have one learner from your learning team submit these questions prior to the start of the workshop on OWL Sakai by 8:45 am under MPH 9015Y Assignments.

Learning Team Deliverables (end of workshop)

1. Prepare a 15-minute (maximum) presentation regarding your vision and implementation plan for London InSite. Please address how you would propose to implement the plan given the various perspectives and how you would balance the needs of the various stakeholders. Your presentation can include PowerPoint (no more than 10 slides), or other audio/visual aids and must be suitable for a job talk.
2. Please have one learner from your learning team submit your presentation (e.g. Prezi, PowerPoint, speaking notes, etc.) on OWL Sakai MPH 9015Y under Assignments at 2:45pm - 15 minutes prior to the start of the presentations. Also, one learning team member needs to be in the classroom at 2:45pm to load the presentation onto the classroom computer.

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Schedule

8:00-8:45	Mandatory Learning Team time to develop questions (submit questions online by 8:45am)
8:45-8:50	Introduction – Dr. Marlene Janzen Le Ber
8:50-9:20	Speaker 1 – Dr. Bryna Warshawsky on behalf of Chris Mackie “Harm Reduction and Injection Drug Use”
9:20-9:50	Speaker 2 – Police Chief Brad Duncan “Community Policing Issues”
9:50-10:20	Speaker 3 – Dr. Lauren Cipriano “What about the Economics”
10:20-10:50	Speaker 4 – Mr. Greg Thompson, “Neighbourhoods Matter”
10:50-11:00	BREAK
11:00-12:00	Q&A of prepared questions by teams
12:00-1:00	Lunch
1:00-2:45	Teams prepare presentations
2:45	Teams submit presentations online
3:00-4:30	Presentations
4:30-4:45	Faculty Debrief (grading of learners’ work)
4:45	Feedback to Learners

Purpose

This Integrative Workshop is one of the learning activities for MPH 9015Y Transforming Public Health. Its purpose is to introduce learners to an exercise of synthesis and integration of the body of knowledge developed to date in the MPH Program.

The specific situation of harm reduction strategies with injection drug use is used in the Integrative Workshop as a context to which key concepts and learnings from each of the courses can be synthesized and integrated. The most advanced team presentation will demonstrate holistic integration of learning across courses.

Objectives of the Integrative Workshop (same as the course MPH 9015Y Transforming Public Health):

By engaging with your colleagues and professors after studying and thinking deeply about the material presented, you will be able to:

1. Analyze information from multiple disciplinary and indigenous stakeholder perspectives to determine appropriate implications, uses, gaps and limitations in a specific situation;
2. Determine the meaning of this information, considering the current ethical, political, scientific, socio-cultural and economic contexts;
3. Synthesize and integrate knowledge across disciplines, situation specific information and meaning of this information;
4. Recommend specific actions based on the analysis, synthesis and integration of information from multiple disciplinary and indigenous stakeholder perspectives; and
5. Revise judgments and change behavior in light of new evidence.

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Grading

Consistent with the overall grading for Transforming Public Health (MPH 9015Y), the deliverable from the integrated workshop will be a pass/fail. The presentation is intended to be a team effort. One team will be recognized as having the most advanced presentation. While there may be limited verbal feedback given on the date of the workshop, each team faculty advisor will give written feedback regarding the presentation to their respective teams within several days after the workshop.

INTEGRATED WORKSHOP #3: THE CASE OF THE COMMUNITY EVACUATION FOLLOWING A CHEMICAL SPILL AND FIRE AT AN OIL REFINERY

(Summary description of case)

The final integrated workshop of our first year was a simulated disaster. Because of the dynamic nature and complexity of integrated workshop #3, it is difficult to reproduce it in its entirety here. Briefly, integrated workshop #3 built on material taught in courses towards the end of the winter semester, including the role of public health units in disaster response. Because the learning teams had considerable experience working together, integrated workshop #3 appropriately placed a heavy emphasis on smooth team functioning, and rapid deliverables. This also entailed the application of the Incident Management System, which required learners to know the required skills, competencies, and roles of individual team members: Operations Manager, Planning Manager, Logistics Manager, Finance Manager, Safety/Risk, Liaison and Communication.

Not only was this the most complex and time-urgent integrated workshop, it involved the most guest speakers, including a chemical spill expert from the local fire department, a medical officer of health, a representative of the Red Cross, and a representative of Tara International, a training agency for NGOs.

Objectives

To assess learners' abilities in the following key areas:

1. Assessment and analysis – assessing the situation and analyzing the potential health concerns that should be acted upon.
2. Response management – acting upon the recommendations of the assessment and analysis, to decide what actions are taken.
3. Communications – all internal and external communication related to the event, specifically what, when, and how to disseminate information.
4. Decision-making – ensuring learners know what decisions they can make, and the approval process for this (knowing they need to get approval from MOH for communications, expenditures, etc.).

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Structure

Rather than a two-page handout (as reproduced from the first two integrated workshops, above), integrated workshop #3 was a dynamic unfolding set of scenarios that we posted to our learning management system as the day unfolded. To summarize, the day began with a news story about a chemical spill at a local oil refinery, after which the teams assembled and assigned their individual roles. This was quickly followed by a fire, which was fanned by high winds and caused smoke plumes over the surrounding area. By 10:00 the mayor was calling for an evacuation of the immediate area. Learners in their teams quickly wrote a public communiqué about potential public health risks and precautions, which they 'released' to the public after receiving approval by the medical officer of health and the public relations person.

The next escalation occurred when the provincial police force deliberately disrupted cell phone service as a precaution against a rumored terrorist attack. Rumors also spread that a Level 3 biohazard facility in the vicinity may have been the 'target' of the attack. By noon the terrorist attack had been identified as a hoax, but the situation had worsened because of explosions at the refinery. Local ERs were swamped with people complaining of breathing difficulties, nausea, and vision problems, and patients were being evacuated to a nearby city. The learners were also faced with media interviews with frantic citizens, a power failure, and a confirmed release of toxic chemicals in both water and atmosphere.

The final integrated workshop was also the first to engage members of MPH faculty in role-playing, including the mayor, a reporter, a government representative, and a frantic citizen.

CONCLUSION

We conceived of the integrated workshops as a sort of "Case 2.0" – opportunities to use active learning to integrate and synthesize material learned to that point in the classroom, and to practice applying skills to real or realistic public health issues. Learners were expected to make the 'least worst' decision, under time pressure, and to defend their choice. By involving genuine experts and having them provide feedback to the learners, the integrated workshops brought the community into the classroom and enhanced the linkages between our program and the surrounding community.

Planning for and implementing three integrated workshops during our first year required substantial faculty and staff resources. The informal impressions of faculty and outside experts supported the notion that the meta-objective of 'big picture' thinking required for public health practice was met by the integrated workshops. Learners demonstrated an awareness of the interdependencies involved with complex public health situations, and had learned to identify and make use of the unique skills of individual members of their learning teams. Although the situations were obviously simulated, learners took them seriously and demonstrated a calm confidence and professional demeanor.

Integrated workshops offered learners an opportunity to put the knowledge they were learning into practice. In doing this, their learning became more solidified and valued (Frenk et. al., 2010). Expert guest speakers, external to the program, exposed learners to the real world of decision making. The unique and current challenges we posed in these day-long events forced our learners to think outside the box, and fast, in order to make meaningful and applicable decisions. Further, their decisions were then analyzed by our experts, adding another dimension of realism to each event. With three Integrated Workshops over the course of the program, learners' abilities to integrate, synthesize, and apply knowledge to real situations could be developed and assessed throughout the program. The integrated workshops also assisted in

the preparation for the learners' practica. The integrated workshops truly took the curriculum and the program to another level; learners and faculty alike continued to applaud the success of each event.

Our future plans include more formal evaluation of the integrated workshops as well as publication of full sets of handouts and background resources. In the meantime we would be pleased to share our experiences with other programs who are interested in exploring this promising approach towards public health curriculum integration.

REFERENCES

1. Council on Education for Public Health. (2011). Accreditation criteria – public health programs. Silver Spring, MD: Council on Education for Public Health.
2. Frenk, J., Chen, L., Bhutta, Z.A., Cohen, J., Crisp, N., Evans, T., ... Zurayk, H. (2010). Health professionals for a new century: Transforming education to strengthen health systems in an interdependent world. *Lancet*, 376(9756):1923-58.