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Developing a model curriculum for a university course in health impact assessment in the USA

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As health impact assessments (HIAs) become increasingly common in the USA, there is growing demand for instruction beyond short courses and online training. As of October 2013, there are graduate level courses that include instruction on HIA in at least 17 universities in the USA, including four courses that focus explicitly on HIA. Instructors of these four courses collaborated to develop a model curriculum for teaching HIA that draws on a framework for experiential learning and on a theoretical model of curriculum formulation. This article includes an in-depth analysis of these courses and presents a model curriculum for HIA instruction during an academic quarter or semester course in a university. This model curriculum may help faculty develop a graduate level HIA course at their institution, as well as inform public health and community design professionals interested in building capacity to conduct HIAs, and students considering taking an HIA course. International instructors could also learn from the US experience, and apply the model curriculum to their setting and educational structure.

Keywords: HIA; model curriculum; graduate education

Introduction

The use of health impact assessment (HIA) in the USA has grown rapidly over the last decade. In 2011, the National Research Council published a report presenting a framework for HIA practice in the USA (National Research Council 2011). A new professional society, Society of Practitioners of Health Impact Assessment (SOPHIA; www.hiasociety.org), was launched in late 2011. As of mid-2014, over 300 HIAs have been completed or are in progress in the USA (Health Impact Project 2014). Two national HIA meetings have each attracted approximately 400 attendees. A Medline search for the term "health impact assessment" found that 62 HIA-related papers with US authors were published from 2000 to 2013; 38 (61%) were published since 2010.

As demand to conduct HIAs grows, additional training is needed to build capacity (Dyjack et al. 2013). Most existing HIA trainings range from one to five days and are geared to urban planning and public health practitioners. HIA workshops lasting 3–8 hours have been organized at several annual conferences in the USA, including the 2013 Active Living Research Conference (http://activelivingresearch.org/tuesday-february-26-2013-agenda).

As a growing field, the introduction of graduate level university courses to train HIA practitioners is of increasing importance. The number of academic institutions offering HIA courses has increased in recent years, creating an opportunity to determine optimal course components to prepare students to conduct HIAs. Although the methods and format to teach HIA vary by institution, identifying a minimum set of core components for HIA courses will strengthen the field by providing a benchmark for instruction. This article proposes a model curriculum for use in both schools of urban or city and regional planning (herein referred to as "planning") and schools of public health in the USA, based primarily on a review of existing US-based courses and feedback from current courses. While focused on instruction in the USA, this curriculum may be a good starting point for HIA courses elsewhere, while recognizing variation in different practices and cultures in other countries.

Methods

Courses were identified by Internet searches and word of mouth among colleagues working in this field. A list of HIA courses compiled by SOPHIA was also reviewed. In addition, Human Impact Partners (www.humanimpact.org) included in its August 2013 electronic newsletter a request for instructors of HIA courses to contact this manuscript's lead author. From these sources, 17 unique courses across the USA were identified for potential inclusion. Courses were excluded if they lasted less than an academic quarter (Lehman College; Portland State University); if they had been designed but not yet taught (Georgia Institute of Technology; University of California, Los Angeles); or if instruction on HIA was included as part

of a course focused on the built environment or some other topic (Arizona State University; Berea College; Georgia Institute of Technology; Michigan State University; Oregon State University; University of Florida; University of Pennsylvania; University of Virginia; University of Wisconsin).

Courses at four universities – Indiana University (IU), Johns Hopkins University (JHU), University of California at Berkeley (UCB), and University of Washington (UW) – centered on HIA, lasted an academic quarter or semester, and had been taught at least three times as of late 2013 (UCB has been taught since 2006). These criteria facilitated the development of the model curriculum from the most established courses. All syllabi were reviewed to describe key characteristics. Additional information on evaluation measures and course graduates were collected from the course instructors. Authors applied this course synthesis, drawing on dominant theories of learning, and developed a model curriculum for teaching HIA in a university setting.

Results
Course summaries
Table 1 presents an overview of the four courses. The courses were similar in content but varied in length. All courses were taught in graduate schools of public health, with two cross-listed in departments of urban planning (UCB, UW). Class enrollment across the four schools ranged from 6 to 27 students, with a median of 14 students. Although not a HIA step, stakeholder engagement is a key aspect of HIA practice, and was addressed in multiple lectures. Instructors used HIA guidance documents including the North American HIA Practice Standards (North American HIA Practice Standards Working Group 2010), and National Research Council HIA report (NRC 2011), as well as training materials from Human Impact Partners (Human Impact Partners Tools and Resources 2013).

Case examples of completed HIAs were reviewed to help students understand how HIA steps have been applied to various proposals. All courses included an experiential learning component requiring students to work on an HIA or selected steps thereof.

Course assignments
Students learned about HIA steps through lectures and readings, and then applied this foundational knowledge as part of their experiential learning. Assignments included an introduction to HIA methods, critical reviews of previously completed HIAs, exercises in the steps of conducting HIAs, and active engagement in conducting an HIA of a current local project often in collaboration with decision-makers. Model HIAs identified by SOPHIA (http://hiasociety.org/?page_id=57) are particularly useful for in-class examples when detailing the steps of the HIA process. Each course required students to make an oral and/or written critique of a completed HIA, either selected from a list of HIAs or as assigned by the instructor.

Students also worked collaboratively in groups to complete an HIA on a topic of real-world concern identified in partnership with a local stakeholder. In most cases, the instructor identified the topic for the class HIA prior to the beginning of the course. The instructors used their existing networks to identify potential topics, sources of data, and local perspectives on policies. In addition, several instructors are HIA practitioners, and are involved in advisory boards or part of existing HIA groups, which facilitate selection of topics. Table 2 includes a sample of these HIA course topics. Criteria for selecting a class HIA project include having a decision-maker and/or stakeholder willing to interact with the students, being outside of the health sector but with potential health impacts, being local so the students can do a site visit, being finite in scope so the HIA can be completed during the academic term, and being timely so recommendations from the course HIA may be considered in the decision-making process.

Table 1. Overview of four term-length university HIA courses in the USA.

	UCB	IU	JHU	UW
Department	Department of City and Regional Planning, and School of Public Health	Richard M. Fairbanks School of Public Health, Department of Health Policy and Management	Bloomberg School of Public Health, Department of Health Policy and Management	College of Built Environments, Department of Urban Design and Planning, and School of Public Health, Department of Environmental and Occupational Health Sciences
Course format	Fifteen weeks; weekly three-hour lecture, discussion, and group work	Fifteen weeks; weekly three-hour lecture, discussion, and group work	Eight weeks; weekly two-hour lecture, discussion, and group work	Ten weeks; weekly two-hour lecture, discussion, and group work
Course prerequisites	None	None	Graduate course in health policy and instructor permission	None; prior related courses and/or experiences in health and built environment, health policy and urban planning issues are helpful
Level of students	Graduate students primarily in planning and public health	Graduate students primarily in public health and health administration program, but open to others	Graduate students only, primarily public health and public policy	Primarily graduate students in urban planning, public health, and public policy

Table 2. Examples of HIA course topics in the USA, 2006–2013.

Institution	HIA topics
UCB	Oak to Ninth redevelopment
	California climate change cap and trade and carbon tax
IU	Marion County transportation expansion
	Impact of a full service grocery store in the Meadows neighborhood
JHU	Westside-Lexington market area redevelopment
	Baltimore City pool closing plan
UW	Duwamish River Superfund cleanup project
	Tacoma south downtown subarea plan

The final products included an oral presentation and a written report, which were disseminated on the Internet (UCB, UW, IU) and to the stakeholders directly. The course at UCB asks students to complete the HIA either individually or in teams, with oral and written deliverables and feedback from instructors and student peers along the way, culminating in a final oral presentation to the class. Some of the completed HIAs are submitted to the HIA catalogs on the Human Impact Partners or the Health Impact Project websites (Human Impact Partners 2013; Health Impact Project 2014).

Although students review the HIA step of monitoring and evaluation, and can complete a process evaluation, it is not feasible for them to evaluate the impact or outcome of their HIA during the course. The limited evaluation is included in courses through students' reflection on the HIA process, and feedback on the group experience.

Course evaluations

End-of-course evaluations suggest that students learned about the HIA process and gained valuable skills in applying HIA to a topic. One frequent comment was that students liked gaining a practical skill, beyond learning theory and foundational knowledge as in many other classes. Students noted skills such as analytics/assessment and systems thinking as being of greatest value. Students in several courses reported positive reactions to stakeholder engagement and interacting with community organizations. Although information on subsequent employment for most students who took these courses is not available, the authors are aware of at least 15 students who began jobs after graduation where they are part of a team working on a HIA.

Developing a model curriculum for HIA

To develop a model curriculum for HIA, the authors came together and discussed the approaches being used in the USA, and noticed considerable overlap in curriculum content and teaching approach for the four major university courses in the USA. The authors also reviewed Tyler's (2013) four-step process of curriculum development (stating objectives, selecting learning experiences, organizing learning experiences, and evaluating the curriculum),

Botchwey et al.'s (2009) development of a model built environment and public health course, and Kolb's (1984) experiential learning cycle (abstract conceptualization, active experimentation, concrete experience, and reflective observation). Together, these approaches support using didactic instruction and experiential learning to teach HIA. The resulting curriculum follows guidance from these resources, includes an experiential learning component, as well as experiences of the instructors.

Table 3 presents a model curriculum for HIA instruction, derived from the syllabi of the four courses. The authors identified course-learning objectives, session topics, potential readings, assignments and the final course project. A course on HIA should provide students with instruction on the origins of HIA; its key principles (Gothenburg Consensus Paper 1999); the steps and how to apply them in practice; and the potential for, and limitations of, HIA to inform decision-making. The course components described in Table 3 may serve as a framework for HIA instruction and allow flexibility to address institutional context and practical concerns. For example, having interdisciplinary teams for the small group projects is only feasible when students in the class come from multiple disciplines, which is more likely if the course is cross-listed in urban planning, public health and other schools in the university. Instructors need to decide whether to focus on a single HIA or on several HIAs for the class project, and how to grade the students for their group contributions and knowledge attained.

Discussion

The academic community is creating courses to respond to the growth of HIAs in the USA. This article adds to the extant literature, since prior articles on teaching impact assessments have generally focused on environmental impact assessments (Sanchez & Morrison-Saunders 2010). A focus on teaching HIA is warranted because of the tremendous growth and demand in the USA. While this article focused on US courses, instructors from other countries could learn from the US experience and adapt the model curriculum to their institutional setting.

HIA can be taught in many venues, and there are ongoing needs for new and experienced practitioners to acquire the skills necessary to practice HIA effectively. University-based HIA courses serve an important role in preparing future generations of professionals in these fields with an appreciation for evaluating health early in planning, working across disciplines, and stakeholder engagement, as well as the skills and practical experience needed to carry out such work (Botchwey & Trowbridge 2011; Dyjack et al. 2013).

Although short workshops are ideal for professionals (Dyjack et al. 2013), there are some advantages to teaching HIA methods in full-length university courses. First, courses provide depth of HIA skills so that students could be involved and possibly take the lead on conducting HIAs after graduation. As noted, several students who have taken this course are now HIA practitioners. Second, the

Table 3.   Proposed model HIA course curriculum.

Course learning objectives	• Articulate the value of assessing health impacts of policies and projects to improve population health effects and health equity • Describe the purpose, benefits and challenges of using HIAs to convey information to decision-makers ways to mitigate and improve population health effects • Describe the core steps used to conduct HIAs including screening, scoping, assessment, recommendations, reporting, monitoring and evaluation • Summarize the similarities and differences in using HIA as an approach separate from other impact assessments • Assess critically the strengths and limitations of previously completed HIAs • Demonstrate collaboration in completing an HIA in an interdisciplinary environment • Demonstrate multi-sector and diverse stakeholder engagement	

Session topics	Assignments	Reference list for potential readings
Introduction/overview of social determinants of health; overview of HIA and EIA; state of the field in the USA and internationally; institutionalizing HIA	Critique of completed HIA	Dannenberg and Wernham (2013), Bond and Pope (2012), NRC (2011), Bhatia and Wernham (2008), Dannenberg et al. (2006), and Marmot (2005).
Introduction to HIA project (scope, purpose, timeline, etc.) by the decision-maker who is invited		
Screening and scoping	Complete class project screening and scoping	Human Impact Partners – HIA Toolkit (2013), NRC (2011), and Taylor et al. (2003).
Stakeholder engagement (*emphasize its role throughout the HIA process*)	Discuss and design project stakeholder engagement	NRC (2011), Kearney (2004), and Arnstein (1969).
Assessment: baseline and impact assessment; quantitative and qualitative methods; data sources	Draft assessment of class project	NRC (2011), Human Impact Partners (2011), Bhatia and Seto (2010), Seto et al. (2007), and Cole et al. (2005).
Recommendations	Draft project recommendations	NRC (2011), Human Impact Partners (2010).
Reporting	Develop plan for reporting (and communicating and dissemination) findings	NRC (2011) and Human Impact Partners (2010).
Evaluation	Draft process evaluation of class project and discuss approach for impact and outcome evaluation	NRC (2011), Bhatia and Coburn (2011), Mindell et al. (2010), Harris-Roxas (2008), Wismar et al. (2007), Parry and Kemm (2005), and Quigley and Taylor (2004).
Monitoring	Draft project monitoring plan	
Using policy tools to facilitate HIA	Allow in-class time to work on HIA	Gottlieb et al. (2012), Hodge (2012), Wernham (2011), and Cole and Fielding (2007).
Presentation of class project to the decision-maker	Oral presentation by students to decision-maker summarizing the HIA and its recommendations, and decision-maker is invited to respond	

Assignments	Review of a completed HIA	Students can select completed HIAs from: http://www.healthimpactproject.org/hia/us; or http://hiasociety.org/?page_id=57
	Write a 4–5 page paper review of a completed HIA including a summary of the proposed project or policy; methods; major findings; recommendations; reporting; strengths and limitations, and impact measures, if available	
Class HIA project	Complete a HIA to identify the potential health impacts of a current proposed local project or policy • Conduct screening and scoping • Design stakeholder engagement • Conduct assessment • Draft recommendations	

(*Continued*)

Table 3 – *continued*

	• Draft monitoring plan • Draft process evaluation and discuss approach for impact and outcome evaluations • Present results and recommendations to decision-maker • Write individual reflections on impressions of the field of HIA and the class project, including comments on what was learned, its value, and the group process
Select suggested textbooks	• Ross C, Orenstein M, Botchwey N. 2014. Health impact assessments in the USA • O'Mullane M. 2013. Integrating health impact assessment with the policy process: lessons and experiences from around the world • Kemm J. 2013. Health impact assessment: past achievement, current understanding, and future progress • Birley M. 2011. Health impact assessment: principles and practice

HIA practicum encourages multidisciplinary collaborations among students in public health, planning and other disciplines. The learning environment also creates interactions with community stakeholders, which provides valuable experiences for students. Third, HIAs conducted in the context of graduate coursework may lead to innovations in HIA practice (e.g., the development of new screening criteria) that have translated to HIAs outside of academia. Finally, each course given may provide a completed HIA, which helps the field grow.

Courses on HIA are attractive for planning students as the curriculum aligns well with the work expected of planners – 'to improve the welfare of people and their communities by creating more convenient, equitable, healthful, efficient, and attractive places for present and future generations' (American Planning Association 2013). In schools of planning, an HIA may qualify for internship credit if the HIA is conducted in partnership with an organization external to the academic institution. It also helps planning programs meet Planning Accreditation Board Standards and Criteria (e.g., required planning skills and values and ethics) (Planning Accreditation Board 2012).

Courses on HIA can be attractive for public health students since HIA aligns well with several public health core competencies (Calhou et al. 2008). The accreditation agency for schools of public health requires a minimum number of practicum hours for all MPH students; for one institution (JHU), the HIA course counts for 25% of the required practicum hours because of the strong experiential learning aspects and partnership with an external agency. Public health faculty seeking to expand practicum experiences for students may consider an HIA course to help address that requirement.

There are challenges to teaching university HIA courses. First, there are time constraints to complete a HIA, especially for a course that occurs over an 8- to 15-week academic quarter or semester. Second, it can be challenging to select the most appropriate and current class HIA project for experiential learning. The screening questions discussed in this article may help to address this challenge. Third, for some institutions, there are limitations on the number of new courses that can be developed annually. In instances when it is not feasible to develop a new course on HIA, faculty should consider including HIA as part of courses on the built environment, environmental health, transportation, or planning, as has occurred in several schools. By focusing on courses that exclusively taught HIA, this study did not review all ways to expose individuals to HIA (e.g., short courses for professionals, pre-conference sessions at meetings). Additional teaching resources including HIA course syllabi are available online (www.bephc.gatech.edu). Finally, evaluation (process, impact, and outcome) and monitoring are key steps of HIA that are discussed but not completed during the courses. HIAs completed as part of courses make important contributions to the field, and it would be useful to monitor the use of class-generated HIAs through downloads or local or topical project references, monitor the variables important to the subject HIA and evaluate their impacts. Impact evaluations could include determining if the HIA was used to help leverage resources or recommendations by decision-makers, or resulted in new and/or strengthened cross-sector collaborations. Such evaluations require resources.

Conclusions

Training in HIA offers the critical analysis of potential impacts of policies, projects and programs that combines the planning and community design skills of understanding how planning decisions affect communities with the public health skills of surveillance. The core curriculum presented in this paper, which combines didactic and practical instruction, provides a framework for faculty from the USA and other countries seeking to develop a HIA course at their own institution and for students who desire to use HIA in their professional careers.

Notes
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