Health Impact Assessment: Necessary but Not Sufficient for Healthy Public Policy

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During the last 20 years, there has been increasing recognition that the health of populations is strongly influenced by social, economic, and environmental factors outside the reach of the medical care sector.¹⁻⁴ Some studies have estimated that health-care access and quality are responsible for only 10%–50% of avoidable morbidity and premature mortality.⁵⁻⁹ Although much is still unknown about the mechanisms explaining the associations between societal (including social, physical, and economic) determinants and health, factors such as lower levels of education and income have, with few exceptions, been linked repeatedly and strongly to poorer health, with dose-response relationships that support causal links.^{10,11}

While an appreciation for the social, physical, and economic determinants of health, disease, and injury is not new, ¹² momentum for addressing these determinants has been increasing. One contributing factor has been a rising awareness of the economic consequences of avoidable illness and premature death in the form of both increased health-care costs and decreased productivity^{11,13} and the cost-effectiveness of many prevention-oriented population-level interventions. ¹⁴ A second critical factor has been a push by the World Health Organization (WHO) for more attention to a range of underlying health determinants beyond health care. This increased emphasis began visibly in the late 1970s with WHO's Primary Health Care initiative calling for joint action across multiple sectors (e.g., education, agriculture, housing, labor, urban planning, transportation, and health care) to improve health, both directly and indirectly. ^{15,16} WHO has subsequently developed and promoted more detailed, concrete recommendations for how governments and nongovernmental organizations can help create healthy communities by addressing societal factors. ^{3,17–20}

One aspect of the WHO recommendations has generated substantial interest in the United States. Health Impact Assessment (HIA) is a systematic process

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(encompassing a range of procedures, methods, and tools) for assessing the health impacts of proposed policies, programs, and projects outside of the traditional health-care sphere. HIA, however, is only one component of a broader strategy aimed toward achieving better health outcomes and reducing health disparities. Emerging during the course of the last decade, this broader strategy has been referred to as Health in All Policies, Healthy Public Policy, 52,26 and has received less attention than HIA in the U.S. With this article, we seek to raise awareness of both HIA and Healthy Public Policy, and to place HIA within the context of this more comprehensive strategy for cross-sectoral action, which is crucial to achieving the ultimate goals of both.

HEALTHY PUBLIC POLICY

Healthy Public Policy is an integrated approach to improving health and reducing health disparities in policy, program, and project decisions made in both public and private sectors. WHO has played a leading role in developing and endorsing the concepts and practices that support Healthy Public Policy. In June 2009, a multidisciplinary group of public health practitioners, policy makers, and academics convened in Kobe, Japan, at the WHO Center for Health Development to catalog replicable ways to trigger cross-sectoral action for greater health equity in urban settings.²⁷ The discussion drew on the experience gleaned from more than 18 international case studies of cross-sectoral actions for health.²⁸ These case studies and others were reexamined at the WHO Conference on Health in All Policies in Adelaide, Australia, in 2010.

Papers from and related to these conferences identified conditions^{26–31} that appear to be essential and that have been employed in pursuit of Healthy Public Policy, both including and exceeding dedicated resources for HIA. These conditions include:

- Widespread awareness and appreciation for the nonmedical determinants of health among the public and policy makers;
- Strong political support at the highest possible levels of government;
- Finance mechanisms that can support cross-sectoral collaboration, including grants, joint financing agreements, subsidies, and appropriations that are earmarked for cross-sectoral activities;
- Clearly defined, measurable health targets for improved health and/or health determinants;
- Agencies/actors and processes designed to foster collaboration in priority setting, planning, and

- evaluation, such as cross-sectoral steering committees, knowledge networks, and capacity-building units; and
- Mechanisms for accountability, including laws, mandates from high political levels, regulations, and joint agreements.

HEALTH IMPACT ASSESSMENT

In the U.S. and elsewhere, interest in HIA has increased with the recognition of the importance of societal determinants of health. WHO defines HIA as a "combination of procedures, methods, and tools by which a project, program, policy, or legislative proposal may be judged for its potential effects on the health of a population and the distribution of these effects within it."32 Formal HIAs follow a systematic series of steps to yield recommendations to optimize the health effects of proposals whose primary objectives are not health, but which are judged to be likely to have positive and/or negative health outcomes 33,34 (Figure). HIA evaluates the potential future impacts of proposed actions in other sectors that are likely to yield significant health effects that are positive, negative, or both. 35

Consistent with its roots in Environmental Impact Assessment (EIA), land-use and development proposals are the most common HIAs in the U.S., 36 although assessments of non-land-use decisions (e.g., living wage ordinances,³⁷ paid sick day laws,³⁸ and menu-labeling requirements³⁹) are increasing. New funding mechanisms (http://www.healthimpactproject.org), training and research opportunities (http://www.cdc.gov/ healthyplaces/hia.htm),40-44 data collection and measurement techniques (http://www.health-forecasting .org, http://www.thehdmt.org, http://www.health indicatorsgov), and even legislative mandates⁴⁵ offer ways to incorporate HIA into some aspects of government decision-making. Going through the process of HIA may help agencies develop an awareness of the societal determinants of health, establish a precedent for collaborations across departments, identify funding opportunities, and locate and share available data. For instance, HIAs conducted in San Francisco have contributed to the San Francisco Department of City Planning more regularly consulting the Public Health Department on major planning projects, which are now in stages before most HIAs would be initiated.⁴⁶

HIA: NECESSARY BUT NOT SUFFICIENT FOR HEALTHY PUBLIC POLICY

Proponents of Healthy Public Policy have underscored the importance of HIA as a vital component of a successful implementation strategy.^{29,47} Healthy Public Policy, however, requires more than formal HIAs. It is a comprehensive approach to achieving more health-informed decision-making in other sectors, and generally requires multiple components; these components should include HIA, but other strategies to achieve Healthy Public Policy are also necessary, including collaborative cross-sectoral governance structures, finance agreements, and regulatory and legal frameworks.^{27,29,30} These other strategies may set the stage for HIA, but may also reduce the need for HIA by collaboratively addressing health priorities before programs, policies, and plans are drafted.

While HIA often contributes to moving toward Healthy Public Policy, in some situations, HIA may be a less effective tool than alternative approaches, or may even be counterproductive if introduced without paying attention to optimal timing. For instance, in some contexts, it may be best to conduct an HIA only after first putting into place preconditions such as joint goal and priority setting across multiple sectors, concretized through formal memoranda of understanding, legal agreements, or even informal arrangements to consider health effects under specific circumstances. These agreements may provide funding, identify needed expertise, and improve access to data. Putting these preconditions into place across sectors may reduce the resources and time required to conduct an HIA. Most importantly, they set the stage for cross-sectoral buy-in and joint action across sectors in response to HIA findings.

While collaborative cross-sectoral relationships can be strengthened by HIA processes, efforts to institutionalize HIA in some countries have been hindered by limited endorsement of a shared responsibility for health protection and promotion. 48 In some situations, introducing HIA before establishing cross-sectoral relationships may be perceived as a form of "health imperialism"—implying that all other sectors should

be subordinate to the health sector—which can undermine efforts to create a shared agenda.⁴⁹ In those situations, it may be most productive to first pursue other avenues toward building Healthy Public Policy, such as initiating cross-sectoral dialogue about overlapping interests and exploring the possibility of undertaking limited activities that match the interests of all participants, with shared budgets and/or shared staff.

RECOMMENDATIONS TO SUPPORT HEALTHY PUBLIC POLICY APPROACHES IN THE U.S.

Identify and support emerging programs and legislation that promote interagency responsibility for healthy communities

Achieving Healthy Public Policy will require support for emerging cross-agency efforts that aim to promote health beyond HIA. For instance, an interdepartmental responsibility for healthy communities is articulated in the Patient Protection and Affordable Care Act. This provision establishes a National Prevention, Health Promotion, and Public Health Council, chaired by the Surgeon General, whose membership includes the Secretaries of Agriculture, Homeland Security, Transportation, Labor, and Health and Human Services; the Chairman of the Federal Trade Commission; the Administrator of the Environmental Protection Agency; the Directors of the Office of National Drug Control Policy and of the Domestic Policy Council; and the Assistant Secretary of Indian Affairs. This cross-sectoral Council is charged with developing "a national prevention, health promotion, public health, and integrative health care strategy that incorporates the most effective and achievable means of improving the health status of Americans and reducing the incidence of preventable illness and disability in the United States."50 The Council's June 2011 National Prevention Strategy outlines four strategic directions and seven health priorities, with specific actions the

Figure. Major steps of a Health Impact Assessment^a

Major steps of an HIA	Description
Screening	Identify projects or policies for which an HIA would be useful.
Scoping	Identify which health effects to consider.
Assessing	Identify which people might be affected and how they might be affected.
Developing recommendations	Suggest changes to proposals to promote positive or mitigate adverse health effects.
Reporting	Present the results to decision makers.
Evaluating	Determine the effect of the HIA on the decision.

^aAdapted from the Centers for Disease Control and Prevention (US). Health impact assessment. 2010 [cited 2010 Oct 20]. Available from: URL: http://www.cdc.gov/healthyplaces/hia.htm

HIA = Health Impact Assessment

federal government will take to achieve improved health outcomes in these areas.⁵¹ For instance, the strategic direction on "Healthy and Safe Communities" includes a commitment to coordinating federal government investments in transportation, housing, and environmental protection; the priority on "Healthy Eating" in the United States includes a commitment to aligning agricultural policies with nutritional goals from the Dietary Guidelines for Americans. The report also includes recommendations for how partners in local, state, and tribal governments and businesses can support this national prevention effort. How the Council will ensure resources and accountability for implementing this strategy has not been described, yet will be a key element of an emerging focus on crossagency responsibility for health.¹⁴

Several other new federal initiatives create opportunities for cross-sectoral planning for health and will need sustained support. Partnerships for Sustainable Communities is a joint effort of the Department of Housing and Urban Development, the Environmental Protection Agency, and the Department of Transportation, with an explicit goal of advancing public health.⁵² The program aims to encourage the local integration of affordable housing, employment opportunities, and public transportation, all of which are important societal determinants of health. The role that the Department of Health and Human Services should play in identifying health outcomes targeted by this effort is unclear, though some international efforts have suggested that national departments of health can be important contributing agencies in this work.⁵³ Regardless, supporting these interagency programs with financial and technical resources, evaluating program outcomes, and improving implementation over time are together likely to advance Healthy Public Policy in ways that are distinct from HIAs.

An important challenge to this and all Healthy Public Policy efforts will be how to align agency missions and identify shared agendas in the face of departmentspecific priorities.⁵⁴ The federal intersectoral collaborations described in this article suggest that it is possible for governments to orient toward cross-departmental work, but these collaborations remain rare and are infrequently valued by political leadership. The deliberate investment of resources, including time and personnel, will be required to create the shared languages, perspectives, and priorities necessary to achieve joint action and to spread accountability for health across government agencies. Internationally, researchers describe various strategies to stimulate and sustain intersectoral collaborations. These include "win-win" strategies that aim to find policies and actions that will

benefit all participating departments, and "damage limitation" strategies, where only potential negative health effects are identified in policy proposals outside the health sector.⁵⁵ The most effective of these tactics for promoting Healthy Public Policy across government agencies has not been established and may differ in each context.

Encourage the strategic use of HIA

Efforts to promote Healthy Public Policy must strengthen opportunities to conduct HIA. In part, this strengthening can be achieved by enforcing existing legislation. The National Environmental Policy Act (NEPA) and the Council of Environmental Quality's Executive Order 12898 are both examples of nonhealth-care sector policies that address the reciprocity between the physical environment and human health. NEPA requires that major federal actions that significantly affect the quality of the human environment undergo an evaluation through the environmental impact statement (EIS) process, in part to "stimulate the health and welfare of man."56 A study of the effectiveness of NEPA 25 years post-implementation found that, overall, the Act has been successful at helping all government agencies look at the environmental consequences of their actions, though no explicit mention of human health was made in the report on NEPA's accomplishments.57

Similarly, Executive Order 12898 directs all federal agencies to consider "ecological, cultural, human health, economic, or social impacts on minority communities, low-income communities, or Indian tribes" when proposed activities are also related to the physical environment.⁵⁷ The scope of these policies includes the protection of human health and welfare, though in practice the EIS process has been irregularly applied to federal projects that may affect health, and there is little federal guidance on how to evaluate health effects.46 Despite their limitations, these two federal efforts illustrate the potential for non-health-care policy to elaborate health priorities. Both NEPA and Executive Order 12898 have been used successfully to enhance the evaluation of health impacts through integrated HIA/EIS processes, but this evaluation could become more systematic.^{58,59} Although the integration of HIA and EIA may improve the legal standing of HIA, other efforts to incorporate HIA into decision-making must also be supported.⁶⁰

Whether through integrated EIA/HIA, voluntary HIA, or other legislative efforts, the use of HIA should be directed toward policy and planning contexts that, per HIA screening recommendations,61 are likely to benefit from this process. These policy and planning

contexts include contexts in which there are sufficient data, policy or program decisions can be influenced by the analysis of health impacts, and decision makers are open to potential HIA alternatives or mitigation proposals. The timely and appropriate use of HIA can introduce and support other collaborations across government agencies, though HIA must be part of a more comprehensive approach to creating healthy communities.

Improve the evidence base for programs and policies that address community health by promoting interdepartmental evaluation opportunities, data collection, and analysis

Significant data and methodological issues continue to challenge intersectoral planning and research. Efforts to bridge these scientific gaps will require new and improved methods for intervention evaluations, including projection and risk forecasting models for HIA. Funding population-wide, linked databases that support data collection and data sharing across government departments will aid research efforts on policy interventions. 62,63 Additionally, agreeing on the standards of evidence for evaluating large-scale policy interventions will be critical; biomedical standards of evidence are inappropriate for most policy-level work, and a broader array of evidence could and should be incorporated into public health decision-making. 64,65 For example, with a team of liaisons, consultants, and staff, the U.S. Task Force on Community Preventive Services has produced evidence-based recommendations—including ratings of the available evidence for improving health through tenant-based rental assistance programs and comprehensive, center-based programs for children of low-income families.⁶⁶ These types of systematic reviews could be expanded through the Task Force or other institutions.

CONCLUSIONS

Research findings continue to show how education, transportation, agriculture, economic, and housing policies affect health. Little work, however, exists on how cross-sectoral work to establish or modify those policies can be launched, institutionalized, or evaluated. It is clear from countries that have moved toward cross-sectoral collaboration for health that achieving Healthy Public Policy will require sustained, strong political support at multiple levels of government. The preconditions to developing this support include expanding public and policy-making understanding of the limits of medical care and the crucial role of social, economic, and physical environments in achieving

optimal health. As that understanding grows, we must identify and support emerging and existing initiatives that promote interdepartmental efforts to advance healthy communities—including, but not limited to, HIA—and simultaneously improve efforts to evaluate these initiatives. HIA is one crucial component of a comprehensive strategy to achieve Healthy Public Policy, but it will be most effective when conducted within the context of that broader approach.

REFERENCES

- Commission to Build a Healthier America. Beyond health care: new directions to a healthier America. Princeton (NJ): Robert Wood Johnson Foundation; 2009. Also available from: URL: http:// www.commissiononhealth.org/PDF/11f12754-e8ff-408b-9451-6456d939b15f/ExecutiveSummary_FINAL.pdf [cited 2010 Nov 2].
- Adler NE, Stewart J, editors. The biology of disadvantage: socioeconomic status and health. New York: Annals of the New York Academy of Sciences; 2010.
- 3. Commission on the Social Determinants of Health. Closing the gap in a generation: health equity through action on the social determinants of health. Geneva: World Health Organization; 2008. Also available from: URL: http://www.who.int/social_determinants/thecommission/finalreport/en/index.html [cited 2011 Oct 3].
- 4. The John D. and Katherine T. MacArthur Foundation. MacArthur Research Network on Socioeconomic Status and Health: about the network/network mission [cited 2010 Dec 1]. Available from: URL: http://www.macses.ucsf.edu/about
- Bunker JP. The role of medical care in contributing to health improvements within societies. Int J Epidemiol 2001;30:1260-3.
- Mackenbach JP. The contribution of medical care to mortality decline: McKeown revisited. J Clin Epidemiol 1996;49:1207-13.
- McGinnis JM, Williams-Russo P, Knickman JR. The case for more active policy attention to health promotion. Health Aff (Millwood) 2002;21:78-93.
- 8. Lee P, Paxman D. Reinventing public health. Annu Rev Public Health 1997;18:1-35.
- Schroeder SA. Shattuck Lecture. We can do better—improving the health of the American people. N Engl J Med 2007;357:1221-8.
- Braveman PA, Cubbin C, Egerter S, Williams DR, Pamuk E. Socioeconomic disparities in health in the United States: what the patterns tell us. Am J Public Health 2010;100 Suppl 1:S186-96.
- Minkler M, Fuller-Thomson E, Guralnik JM. Gradient of disability across the socioeconomic spectrum in the United States. N Engl J Med 2006;355:695-703.
- Puska P, Ståhl T. Health in All Policies—the Finnish initiative: background, principles, and current issues. Annu Rev Public Health 2010;31:315-28.
- Suhrcke M, Nugent RA, Stukler D, Rocco L. Chronic disease: an economic perspective. London: Oxford Health Alliance; 2006.
- Teutsch SM, Fielding JE. Comparative effectiveness—looking under the lamppost. JAMA 2011;305:2225-6.
- World Health Organization. Declaration of Alma-Ata. International Conference on Primary Health Care; 1978 Sep 6–12; Alma-Ata, USSR.
- Ollila E. Health in All Policies: from rhetoric to action. Scand J Public Health 2011;39 Suppl 6:S11-8.
- World Health Organization. The Bangkok charter for health promotion in a globalized world. 2005 [cited 2011 Sep 27]. Available from: URL: http://www.who.int/healthpromotion/conferences/6gchp/hpr_050829_%20BCHP.pdf
- 18. World Health Organization. Ottawa charter for health promotion. First International Conference on Health Promotion; 1986 Nov 21; Ottawa, Ontario. Also available from: URL: http://www.who.int/hpr/NPH/docs/ottawa_charter_hp.pdf [cited 2011 Sep 27].
- World Health Organization. Adelaide recommendations on Healthy Public Policy. Second International Conference on Health Promotion; 1988 Apr 5–9; Adelaide, South Australia. Also available from:

- URL: http://www.who.int/healthpromotion/conferences/previous/adelaide/en/index.html [cited 2011 Sep 27].
- World Health Organization. Adelaide statement on Health in All Policies: moving towards a shared governance for health and well-being. Report from the International Meeting on Health in All Policies; 2010 Apr 13-15; Adelaide, South Australia. Also available from: URL: http://www.who.int/social_determinants/ hiap_statement_who_sa_final.pdf [cited 2011 Sep 27].
- 21. Williams DR, McClellan MB, Rivlin AM. Beyond the Affordable Care Act: achieving real improvements in Americans' health, Health Aff (Millwood) 2010;29:1481-8.
- National Academy of Sciences. A framework and guidance for Health Impact Assessment [cited 2010 Nov 23]. Available from: URL: http://dels.nas.edu/Study-In-Progress/ Framework-Guidance-Health/DELS-BEST-09-06
- Kickbusch I, McCann W, Sherbon T. Adelaide revisited: from Healthy Public Policy to Health in All Policies. Health Promot Int 2008:23:1-4.
- Secretary's Advisory Committee on National Health Promotion and Disease Prevention Objectives for 2020. Healthy people 2020: an opportunity to address societal determinants of health in the U.S. 2010 [cited 2011 Sep 27]. Available from: URL: http:// healthypeople.gov/2020/about/advisory/SocietalDeterminants Health.pdf
- Metcalfe O, Higgins C. Healthy public policy—is Health Impact Assessment the cornerstone? Public Health 2009;123:296-301.
- Public Health Agency of Canada. Health equity through intersectoral action: an analysis of 18 country case studies. Geneva: World Health Organization; 2008. Also available from: URL: http:/ www.phac-aspc.gc.ca/publicat/2008/hetia18-esgai18/pdf/hetia18esgail8-eng.pdf [cited 2010 Jun 7].
- World Health Organization. Health equity in all urban policies: a report on the expert consultation on intersectoral action (ISA) in the prevention of noncommunicable conditions. Kobe (Japan): World Health Organization; 2009. Also available from: URL: http://www .who/or/jp/ISA-Report_final_22Feb2010.pdf [cited 2010 Oct 17].
- Public Health Agency of Canada. Crossing sectors: experiences in intersectoral action, public policy and health. 2007 [cited 2011 Sep 27]. Available from: URL: http://www.phac-aspc.gc.ca/ publicat/2007/cro-sec/index-eng.php
- St-Pierre L. Governance tools and framework for Health in All Policies. 2009 [cited 2011 Sep 27]. Available from: URL: http://rvz .net/uploads/docs/Achtergrondstudie_-_Governance_tools_and_ framework.pdf
- St-Pierre L. Governance structures and processes for HiAP: analytical framework for intersectoral governance. Presented at the Health in All Policies International Meeting; 2010 Apr 14; Adelaide, South Australia. Also available from: URL: http://www.sahealth.sa.gov .au/wps/wcm/connect/12ee030043af35e18667ceed1a914d95/ StPierreDay2-hiap-phcc-20100423.pdf?MOD=AJPERES&CACHEID =12ee030043af35e18667ceed1a914d95 [cited 2011 Sep 27].
- Ritsatakis A, Jarvisalo J. Opportunities and challenges for including health components in the policy-making process. In: Stahl T, Wismar M, Ollila E, Lahtinen E, Leppo K, editors. Health in All Policies: prospects and potentials. Helsinki (Finland): Finnish Ministry of Social Affairs and Health, European Observatory on Health Systems and Policies; 2006. p. 145-68.
- European Centre for Health Policy. Health Impact Assessment: main concepts and suggested approach: Gothenburg consensus paper. Brussels: World Health Organization Regional Office for Europe; 1999. Also available from: URL: http://www.euro.who .int/document/PAE/Gothenburgpaper.pdf [cited 2011 Sep 27].
- Lock K. Health Impact Assessment. BMJ 2000;320:1395-8.
- Collins J, Koplan JP. Health Impact Assessment: a step toward Health in All Policies. JAMA 2009;302:315-7.
- Cole BL, Fielding JE. Health Impact Assessment: a tool to help policy makers understand health beyond health care. Annu Rev Public Health 2007;28:393-412.
- Dannenberg AL, Bhatia R, Cole BL, Dora C, Fielding JE, Kraft K, et al. Growing the field of Health Impact Assessment in the United States: an agenda for research and practice. Am J Public Health 2006:96:262-70.
- Bhatia R, Katz M. Estimation of health benefits from a local living wage ordinance. Am J Public Health 2001;91:1398-402.
- San Francisco Department of Public Health, Program on Health

- Equity and Sustainability. Paid sick days HIA. 2009 [cited 2011 Sep 27]. Available from: URL: http://www.sfphes.org/work_sick_day
- Simon P, Jarosz CJ, Kuo T, Fielding JE. Menu labeling as a potential strategy for combating the obesity epidemic: a Health Impact Assessment. Los Angeles: County of Los Angeles Public Health, Division of Chronic Disease and Injury Prevention; 2008.
- University of California, Los Angeles. Health Impact Assessment Clearinghouse Learning and Information Center [cited 2010 Oct 20]. Available from: URL: http://www.hiaguide.org
- University of California, Berkeley, School of Public Health. Health Impact Assessment course [cited 2010 Oct 20]. Available from: URL: http://sites.google.com/site/ucbhia/education
- National Association of County and City Health Officials. Planning for healthy places with Health Impact Assessments [cited 2010 Oct 20]. Available from: URL: http://professional.captus.com/Planning/hia/default.aspx
- San Francisco Department of Public Health, Environmental Health Section, Program on Health Equity and Sustainability. HIA practitioners summer training course; 2011 Jul 25-28; Oakland, California. Also available from: URL: http://www.sfphes.org/HIA_Training. htm [cited 2010 Oct 20].
- Johns Hopkins Bloomberg School of Public Health. Buildings, land use, transportation, and public health course [cited 2010 Oct 20]. Available from: URL: http://www.jhsph.edu/courses/ course/188.682/01/2010/14114
- Farquhar D. Health Impact Assessments: a tool to assess and mitigate the effects of policy decisions on public health. Washington: National Conference of State Legislatures; 2008.
- Wernham A, Bhatia R. Integrating human health into environmental impact assessment: an unrealized opportunity for environmental health and justice. Environ Health Perspect 2008;116:991-1000.
- Metcalfe O, Higgins C. Health Impact Assessment contributing to Healthy Public Policy. Public Health 2009;123:295.
- Mannheimer LM, Gulis G, Lehto J, Ostlin P. Introducing Health Impact Assessment: an analysis of political and administrative intersectoral working methods. Eur J $\hat{\text{P}}\text{ublic}$ Health 2007;17:526-31.
- Kemm J. Health Impact Assessment: a tool for Healthy Public Policy. Health Promot Int 2001;16:79-85.
- Patient Protection and Affordable Care Act. HR 3590, Title IV, §4001 (2010).
- National Prevention Council (US). National Prevention Strategy: America's plan for better health and wellness. Washington: Department of Health and Human Services, Office of the Surgeon General (US): 2011.
- Environmental Protection Agency (US). HUD-DOT-EPA partnership for sustainable communities [cited 2010 Oct 17]. Available from: URL: http://www.epa.gov/smartgrowth/partnership
- Pettersson B. Health in All Policies across jurisdictionsfrom Sweden. Public Health Bull SA 2010;7:17-20.
- Bacigalupe A, Esnaola S, Martín U, Zuazagoitia J. Learning lessons from past mistakes: how can Health in All Policies fulfill its promises? J Epidemiol Community Health 2010;64:504-5.
- Koivusalo M. The state of Health in All Policies (HiAP) in the European Union: potential and pitfalls. J Epidemiol Community Health 2010;64:500-3.
- National Environmental Policy Act of 1969. Pub. L. No. 91-190, 42 U.S.C. (1969).
- Council on Environmental Quality. The National Environmental Policy Act: a study of its effectiveness after twenty-five years. Washington: President's Council on Environmental Quality; 1997.
- Wernham A. Inupiat health and proposed Alaskan oil development: results of the first integrated Health Impact Assessment/ environmental impact statement for proposed oil development on Alaska's North Slope. EcoHealth 2007;4:500-13.
- Bhatia R. Protecting health using an environmental impact assessment: a case study of San Francisco land use decisionmaking. Am J Public Health 2007;97:406-13.
- Corburn J. Toward the healthy city: people, places, and the politics of urban planning. Cambridge (MA): MIT Press; 2009.
- Human Impact Partners. Considerations for the selection of appropriate policies, plans, or projects for analysis using Health Impact Assessment. 2009 [cited 2011 Jul 18]. Available from: URL: http:/ www.humanimpact.org/component/jdownloads/finish/12/20
- Chamberlayne R, Green B, Barer ML, Hertzman C, Lawrence WJ,

- Sheps SB. Creating a population-based linked health database: a new resource for health services research. Can J Public Health 1998:89:270-3.
- 63. Centers for Disease Control and Prevention (US). National Environmental Public Health Tracking Network [cited 2010 Oct 17]. Available from: URL: http://ephtracking.cdc.gov/showAbout.action
- 64. Braveman PA, Egerter SA, Woolf SH, Marks JS. When do we know enough to recommend action on the social determinants of health? Am J Prev Med 2011;40(1 Suppl 1):S58-66.
- 65. Anderson LM, Brownson RC, Fullilove MT, Teutsch SM, Novick LF, Fielding J, et al. Evidence-based public health policy and practice: promises and limits. Am J Prev Med 2005;28(5 Suppl):226-30.
 66. Centers for Disease Control and Prevention (US). Guide to Com-
- 66. Centers for Disease Control and Prevention (US). Guide to Community Preventive Services: promoting health through the social environment [cited 2010 Dec 21]. Available from: URL: http://www.thecommunityguide.org/social/index.html