

CURRICULUM DEVELOPMENT

## Establishing a Women's Health Curriculum Using the Delphi Method

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**ABSTRACT** **Context:** A Women's Health Initiative Task Force was formed with the collaboration of five primary care medical specialties at the University of Texas Medical Branch (UTMB) at Galveston to address the education of medical students about important issues related to women's health.

**Objective:** To identify and prioritize key concepts in issues related to women's health.

**Methods:** Literature review and three generational Delphi Method.

**Results:** The content was identified for development of a curriculum in Women's Health for medical students and resident physicians. Objectives, tasks, skills, learning opportunities, and learning materials were defined, and the curriculum is being designed to produce, within all specialties, parallel and consistent opportunities to educate students about issues important for women's health.

**Conclusion:** The rankings of topics gathered through the Delphi Method will be used to develop a curriculum in Women's Health Issues that defines objectives, tasks, skills, learning opportunities, and learning materials for the purpose of educating UTMB medical students and resident physicians about the health needs of women.

**KEYWORDS** Women's health, undergraduate medical school curriculum, Delphi Method.

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## **Introduction**

The importance of gender issues in medicine and health care is obvious and has received much attention during the curricular reform movement of the 1990s in the education of health professionals (Donoghue, 1996). The term “gender issues” does not describe a field of specialization, but is a template useful to assure a standard of adequacy of any approach to health and medical care and the education of health care providers. This organizing paradigm recognizes the importance of the study of gender differences and the need for multidisciplinary approaches. This paradigm responds to real and perceived disparities in the roles, rights, and treatment of women. It includes the values and knowledge of women and their own experience with health and illness and reflects needs over the life cycle. The paradigm also responds to differences in race, class, ethnicity, culture, sexual preference, levels of education and access to medical care, and includes the empowerment of women so that, as for all patients, they can be informed participants in their own health care (Sumaya *et al.*, 1997).

A group of faculty members at the University of Texas Medical Branch (UTMB) at Galveston were concerned about the extent and consistency of attention that the topic of women’s health was receiving in the medical school curriculum. Therefore, a series of meetings were held by key faculty to discuss integrating women’s health issues into the curriculum at UTMB. As a result of these meetings, a Women’s Health Initiative Task Force was formed to address the education of medical students about important issues related to women’s health. This task force is composed of a multidisciplinary group of faculty that includes members from the Departments of Family Practice, Internal Medicine, Surgery, Psychiatry, and Obstetrics & Gynecology.

These members are dedicated advocates promoting the inclusion of women’s health issues in the medical school curriculum. Since the inception of the task force in January 2000, there have been on-going planning meetings with members from the five core disciplines. It is important to note that all five departments agreed to incorporate the teaching of topics that the group felt were most important. As a result of the planning sessions, a clear vision emerged for collaboration among the five specialties in building a curriculum for medical student education that is parallel and consistent between all of these specialties.

## **Methodology**

A three-generational Delphi Method was used to prioritize the various issues relating to women’s health. The “Delphi Method” was pioneered by scientists at the RAND Corporation to assess the direction of long-range trends, with special emphasis on science and technology, and their probable effects on society (Helmer-Hirschburg, 1964). This approach was popularized in the mid-

60s (Helmer-Hirschburg, 1966). It is unfortunate that the set of procedures developed to improve methods of forecasting came to be known as the “Delphi Method”, since, according to the originator, this harkens to the oracles found in that location in ancient Greece (Dalkey & Helmer-Hirschburg, 1962). This denotes a mystic quality to what is actually a very systematic means to the reliable and creative exploration of ideas and the production of suitable information for decision making. The Delphi Method is a useful communications device that provides a structured process for collecting and distilling knowledge from a group of experts, using a series of questionnaires interspersed with controlled opinion feedback (Adler & Ziglio, 1996), thus facilitating the formation of a group judgment or consensus statement (Helmer-Hirschberg, 1967). The great advantage of the Delphi Method is that it minimizes social interactive behaviour that occurs during normal group discussions, which can hamper opinion formation. The method makes discussion between experts more productive, especially when complete scientific knowledge is lacking, and decision-makers must rely on their own intuition or on expert opinion (Philips, 1991).

A “starter set” of Women’s Health Issues was derived from information gathered by conducting a literature review and was selected by the six members

**Table 1.** Starter set of women’s health issues derived from a literature review

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Topics
Ageing (disability, widowhood and abandonment, cognitive decline)
Cancer <ul style="list-style-type: none"> <li>– Breast (mammography, genetics and cancer prone women, therapeutic issues)</li> <li>– Cervical (human papillomavirus testing)</li> <li>– Colorectal (endoscopic screening)</li> <li>– Lung (smoking control)</li> </ul>
Cardiovascular Care (unstable angina, heart disease and stroke)
Caregiver Burnout (young families, parents and spousal parents)
Diabetes Control
Eating Disorders (anorexia and bulimia)
Health Promotion (exercise and lifestyle)
Maternal, Foetal and Infant Health
Menopause/Hormone Replacement Therapy (menopausal oestrogen and progestin therapy)
Mental Health (depression, suicide, sexuality, substance abuse)
Nutrition (weight management and herbal medicine)
Occupational Health (women in the workforce)
Osteoporosis
Pregnancy (cervical ectopic pregnancy)
Reproductive Health (infertility)
Rheumatoid Arthritis
Sexually Transmitted Diseases (chlamydia, HIV, herpes, HPV)
Violent Injuries (rape and domestic violence)

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of the taskforce representing the departments of the medical school that have a prominent interest in women's health issues (Table 1). The starter set of issues was initially distributed to about 30 members of the medical school faculty who had identified an interest and a potential role in teaching about women's health issues at UTMB. The goal was to stimulate thought about areas that needed to be considered as part of a women's health curriculum. The issues that were chosen as part of the starter set were topics that were important for both patients and clinicians, and were topics offering opportunities to develop integrated learning experiences that were longitudinal across the undergraduate medical curriculum.

As is customary in Delphi procedure, a decline in responders occurs after the first step of the initial distribution of the starter set to members of the medical school faculty. In the second step, 23 of the original faculty participated as recipients of the refined starter set and were asked to add or delete from the list any topics that they thought should or should not be considered for inclusion in the second iteration list.

A second iteration of the starter set was then distributed. Participating faculty were asked to review the modified second iteration to identify the issues that could most effectively focus and integrate critical subject matter into the undergraduate medical curriculum. At this point, four items from the original starter set had received votes for elimination. Faculty members were asked if they wanted to keep or delete these items from the list. There were also several new items that had been added during the first iteration of the Delphi Method. During the second iteration, faculty had the opportunity to delete any topic they thought should not be considered for inclusion in the final list, and they were asked to add any new topics that they thought should be included. These two iterations of the Delphi Method were performed in order to obtain substantial agreement about the items on the list (Table 2).

The third step in the Delphi procedure involved prioritizing the final list of women's health topics based on the rating of faculty who participated to this point in the study. The task was to rank the list of topics according to those that should receive first attention in any curricular initiative or other learning integration. The original Core Group of 30 medical school faculty who, in a survey of interests, were found to have listed women's health as a key word prioritized this final list of sixteen women's health topics. The members of the Core Groups were asked to rate the topics from one to sixteen, with one being considered the highest ranking. The prioritization of the topics by these faculty resulted in a numerical average. The lower the numerical average, the higher the rank of the topic that was being considered. The numerical averaging resulted in a three-tiered ranking of topics.

The Delphi Method appears deceptively simple because it is relatively easy to formulate and iterate. The difficulties arise in formulating the starter set, engendering adequate responses at each step and iteration, and in establishing criteria for determining consensus. While the Delphi Method can be used with

**Table 2.** Summary of the changes in consensus topics after two iterations using the Delphi Method

	% Concurrence of rankers	
	Generation 1	Generation 2 <sup>a</sup>
Topics Deleted	98.2%	91.7%
1. Ageing (disability, widowhood and abandonment, cognitive decline)		
2. Caregiver burnout (young families, parents and spousal parents)		
3. Pregnancy (cervical ectopic pregnancy)		
4. Rheumatoid arthritis		
Topics added		
1. Mental Health (depression, suicide, sexuality, substance abuse)	New set	No change in new set
2. Sexuality (sexuality throughout life, body image, sexual relationships after major operations)		

<sup>a</sup>44% of the original set of rankers responded in the second generation sustaining a high concurrence percentage. As a general rule, when there is a substantial decline in rankers, further iterations of the procedure will not produce meaningful changes. A solid consensus on the items to be included is determined when two generations produce a combined concurrence of greater than 90%.

little training or experience those with formal training and experience in nominal process measurement and analysis best guide it. Those types of faculty are often in short supply at medical schools because they are most often found in social and population sciences.

**Results**

Menopause and Hormone Replacement Therapy (HRT) ranked highest among a list of 16 Women's Health Initiative topics generated through the Delphi Method (Table 3). However, other important women's health topics were also identified. In addition to HRT, the first tier of topics included Health Promotion (smoking cessation, exercise, nutrition, control of hypertension, and weight management); Cancer (breast, cervical, colorectal, lung, and ovarian), Reproductive Health, and Cardiovascular Care. The second level of topics included Mental Health; Maternal, Foetal, and Infant Health; Violent Injuries; Musculoskeletal Disorders; Ageing; and Sexuality. The last tier consisted of topics such as the Caregiver Role, Autoimmune/Rheumatoid Diseases, Diabetes Control, Eating Disorders, and Occupational Health.

**Table 3.** Women's Health Initiative: summary of ranking from the final iteration using the Delphi Method

Women's Health Initiative Ranking Set Summary			
Topics	Number of raters	Numerical average	Rank
Menopause/Hormone Replacement Therapy (oestrogen replacement, progestin therapy, non-hormonal therapies, incontinence)	8	4.88	1.1
Health Promotion (smoking control, exercise, nutrition, control of hypertension, weight management)	8	5.25	1.2
Cancer Breast (mammography, genetic counselling, therapeutic issues) Cervical (human papillomavirus testing) Colorectal (endoscopic screening, genetic counselling) Lung (smoking control) Ovarian	8	5.75	1.3
Reproductive Health (acute and chronic pelvic pain, infertility, chlamydia, HIV, herpes, HPV)	8	6.13	1.4
Cardiovascular Care (unstable angina, heart disease, peripheral occlusive arterial disease, stroke)	8	6.25	1.5
Mental Health (depression, suicide, sexuality, substance abuse, Positive Image Center, effects of and management of stress)	8	7.25	2.1
Maternal, Foetal and Infant Health (pregnancy, teen pregnancy)	8	7.63	2.2
Violent Injuries (rape, domestic violence, elderly abuse)	8	7.75	2.3
Musculoskeletal Disorders (osteoporosis, hip fractures, sports injury)	8	8.38	2.4
Ageing (disability, widowhood and abandonment, cognitive decline)	8	8.5	2.5.5
Sexuality (sexuality throughout life, body image, sexual relationships after major operations)	8	8.5	2.5.5
Caregiver Role (burnout, young families, parents and spousal parents)	8	11.38	3.1

*(continued overleaf)*

**Table 3.** (continued)

Women's Health Initiative Ranking Set Summary			
Topics	Number of raters	Numerical average	Rank
Autoimmune / Rheumatoid Diseases (rheumatoid arthritis, osteoarthritis, polymyalgia rheumatica, temporal arthritis)	6	11.67	3.2
Diabetes Control	8	11.88	3.3
Eating Disorders (anorexia and bulimia)	8	12.25	3.4.5
Occupational Health (women in the workforce, work-related injuries, environmental exposures)	8	12.25	3.4.5

## Discussion

Since Menopause/Hormone Replacement Therapy was ranked as the prime topic of investigation, using the Delphi method, a curriculum task force was formed to survey curricular offerings at UTMB. They found that the topic of Menopause/Hormone Replacement Therapy was almost non-existent in the current medical school curriculum. Consequently, the Women's Health Initiative Task Force embarked on the development of a comprehensive list of Learning Objectives for Menopause to guide student learning. This list, representing core competencies, is consistent with information from authoritative sources in the field of women's health. These objectives have a unique application in that they reflect the need for longitudinal, multidisciplinary teachings in the clinical segments of the undergraduate medical curriculum. This will resonate well at UTMB as modifications are considered in how to reform the third and fourth year curriculum.

This project is significant because it provides easily obtained and useful information for the Women's Health Task Force at UTMB that includes all five primary care specialties at the medical school and others with a stake in women's health promotion. A promising development stemming from this study was the emergence of a faculty consensus with identified advocates for more curricular initiatives that address women's health issues. The information gathered by the Delphi Method is being used to develop a curriculum, and associated learning activities, that can be infused into various learning activities at UTMB. The reaction of the faculty to the Delphi Method was increased dedication among those faculty who were already sympathetic to women's health concerns from the five major disciplines. The process and procedures of the Delphi Method promoted a collaborative spirit that is likely to ensure that there will be effective, ongoing teaching about women's health. It is less clear

that this teaching will occur longitudinally in the clinical rotations in the Departments of Obstetric & Gynecology, Internal Medicine, Family Medicine, Surgery, and Psychiatry. The Delphi Method was useful because it provided a systematic and formal way for faculty to document these unmet teaching and learning needs in very precise terms. The process provided experience with a model for the diffusion of new and improved subject matter into the undergraduate medical school curriculum in a manner that avoids the need for formal confirmation by curriculum governance structures.

## Conclusion

These rankings of topics will be used to develop a curriculum in Women's Health Issues that defines objectives, tasks, skills, learning opportunities, and learning materials for the purpose of educating UTMB medical students and resident physicians about the health needs of women. The task force that was formed is a collaborative effort of all five primary care medical specialties to develop a curriculum that is parallel and consistent between all of these specialties in the education of students about important issues in women's health.

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