

Moving from awareness to action on preventing patient exposure to toxic environmental chemicals

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A recent headline in *The New York Times* posed the question, “Are you a toxic waste disposal site?”¹ A reasonable reply is “yes.” Toxic chemicals are ubiquitous in our homes, workplaces, and communities, consequently in everyone, everyday, everywhere. Two articles in this issue of the *American Journal of Obstetrics and Gynecology* (AJOG) have brought to the fore how reproductive health professionals are beginning to seize on this immense challenge as an opportunity to benefit the health of all patient populations and future generations.

The first article, “Obesogens: an emerging threat to public health” by Janesick and Blumberg² provides an overview of the burgeoning research that links exposure to endocrine-disrupting chemicals with obesity and recommends that strategies to prevent exposure to endocrine-disrupting chemicals should be discussed routinely by obstetricians with their patients. The second article, “Will my work affect my pregnancy?” by Grajewski et al,³ which provides resources for anticipating and answering patients’ questions, summarizes queries made to the National Institute for Occupational Safety and Health regarding reproductive hazards that are encountered at work and, importantly, provides invaluable resources to support clinicians in answering patient questions.

Publication of these 2 articles by AJOG comes on the cusp of a sea change in awareness and action among reproductive health professionals about exposure to toxic environmental chemicals that have surged over the past 3 years. In 2013, the American College of Obstetricians and Gynecologists and the American Society for Reproductive Medicine published an opinion that called for “timely action to identify and reduce exposure to toxic environmental agents while addressing the consequences of such exposure.”^{4,5} On October 1, 2015, this call echoed around the world with publication of a policy

statement by the International Federation of Gynecology and Obstetrics (FIGO) on reproductive health impacts of exposure to toxic environmental chemicals.⁶ FIGO includes 125 countries/territories and is the leading global voice of reproductive health professionals; its actions have profound resonance.

Publication of the FIGO opinion coincided with the FIGO “Summit on Shaping Our Planetary Survival” that was held in conjunction with the XXIII FIGO World Congress in Vancouver, British Columbia. The Summit brought together >50 reproductive health professionals from 25 countries who began to develop a plan of action for the implementation of FIGO’s recommendations.⁷ FIGO has established a Reproductive and Developmental Environmental Health Work Group that will review and address these issues from scientific, social, and political perspectives and will keep this as a central FIGO agenda item for the coming decade. Videos of the presentations at the XXIII FIGO World Congress and other related materials are at the following link: <http://prhe.ucsf.edu/prhe/healthnotttoxics.html>.

Thus, reproductive health professional societies in the United States and around the globe now regard the topic of the prevention of exposure to toxic chemicals as their issue. They now officially recognize the science that links exposure to toxic chemicals and adverse health outcomes as informing the practice of reproductive healthcare delivery, have issued a call to action, and have an official work group to bring the plan to fruition.

So what does this mean for the practicing health professional?

FIGO outlined 4 mutually reinforcing recommendations for action by obstetricians and gynecologists, women’s health nurse practitioners, nurses, and other health professionals. The good news is that obstetricians and gynecologists and other reproductive health professionals can and are acting on each of these recommendations.

Recommendation 1: Advocate for policies to prevent exposure to toxic environmental chemicals

The unique and powerful voices of reproductive health professionals around the world have become part of the global movement for the prevention of exposure to toxic chemicals. In February 2016, 5 societies of reproductive health professionals (ie, the American College of Obstetricians and Gynecologists, the American Society for Reproductive Medicine, the Endocrine Society, the American Society of Reproductive Professionals, and the Society for Maternal-Fetal Medicine) joined 9 other public and

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environmental health professional societies in urging the leadership in the US Senate and the US House of Representatives to prioritize public health in their current efforts to reform the Toxic Substances Control Act, which is the outdated regulatory framework for environmental chemicals.⁸ Currently, unlike pharmaceuticals, most environmental chemicals enter the marketplace and people with little to no scrutiny of their potential health impacts,^{9,10} which is a policy gap likened by Birnbaum,¹¹ Director of the National Institute of Environmental Health Sciences, to "...environmental chemicals act[ing] like uncontrolled medicine."

Reproductive and other health professional societies recommended that efforts to reform the Toxic Substances Control Act protect the safety and health of their most vulnerable patients and the public from unsafe chemicals and ensure access to confidential business information by public health and other professionals.⁸ Effective public policy is essential to prevent harm, because individuals cannot act on their own behalf to prevent many environmental exposures (ie, chemicals in our air, food, and public drinking water).¹²

Likewise, unrecognized or uncontrolled exposures to toxic chemicals at work are not amenable to individual-level action. Grajewski et al³ point to a long list of urgent policy needs to prevent workplace exposure to reproductive and developmental toxicants among women and men of childbearing age. First and foremost, the authors underscore the need for reliable toxicity data about the chemicals in use so that employers, workers, and health professionals can make informed decisions and the need for policies to prevent discrimination against pregnant workers. Additionally, as Janesick and Blumberg² point out, we need to act on the findings of well-designed animal studies in the absence of human evidence, much as we do now when deciding whether to proceed to human clinical trials for pharmaceuticals. By the time human studies show harm, prevention has largely failed.

Recommendation 2: Work to ensure a healthy food system for all

Currently, there is tremendous momentum for leveraging the billions of dollars in purchasing power of healthcare institutions to create a healthy food system for all.¹³ Community and market-based interventions by the healthcare sector are bringing healthier food to diverse and vulnerable populations.¹⁴ By aggregating their volume demand for regional, sustainable food products, hospitals are not only helping to increase access to healthy foods but also are building community wealth in workforce development and jobs.^{13,14}

For example,

- One in 4 hospitals in California participate in the Healthy Food In Health Care Program¹⁴;
- Almost one-half of the fresh produce that is purchased for patients at Kaiser Permanente are produced sustainably and/or locally grown¹⁵;

- Gundersen Lutheran Health System in Wisconsin cofounded a multiple stakeholder–owned Fifth Season Co-op to strengthen the local food economy by building the necessary infrastructure¹³; and
- In Detroit, an expanding network of healthcare sites are connecting patients with chronic disease, at risk pediatric patients, and food insecure families with local healthy food resources by writing prescriptions for fresh, local fruits and vegetables.¹⁵

These achievements were supported by over a decade of policy work that was undertaken by health professionals in organizations such as the California Nurses Association and the California Medical Association. In the case of the California Medical Association, early initiatives that raised concerns about pesticide use and health impacts within agricultural areas and schools laid the basis for follow-on comprehensive healthy food policies that were supported, in turn, at the national level by the American Medical Association.⁸

All of these preceding examples illustrate how health professionals and their institutions are working for a healthy and equitable food system that is a powerful tool for the prevention of chronic disease.

Recommendation 3: Make environmental health part of healthcare

A 2014 survey of US obstetricians found that, although the vast majority believed that asking about exposure to toxic chemicals would benefit their patient's health, "they equated counseling with 'opening Pandora's box' (ie, they feared broaching the topic of environmental health with patients because they lacked adequate knowledge and understanding to answer patients' questions about exposures ...).¹⁶ The article by Grajewski et al³ demonstrates that healthcare professionals can feel secure in beginning a conversation with their patients about their workplace exposures because the National Institute for Occupational Safety and Health, an agency of the US Centers for Disease Control and Prevention, has resources and experts who can help find evidence-based answers to patient questions. Grajewski et al provide guidance on asking about workplace exposures; environmental and occupational health history forms are available online, along with resources for counseling patients.¹⁷⁻¹⁹

Moreover, complementary expertise and resources are available to health professionals regarding nonoccupational exposures through the US Centers for Disease Control and Prevention's Pediatric Environmental Health Specialty Units (PEHSUs).²⁰ The PEHSUs, which are located throughout North America, are ready, willing, and able to respond to the myriad of patient queries (ie, "Should I tell my patients to avoid manicures in pregnancy?" "I ordered a lead level, and it's high; what should I do?" "Patients are asking me to order hair testing for heavy metals, should I do it?" "My patient is pregnant and renovating an older home; is that a worry?"). The PEHSUs have been serving the pediatric community for the past 15 years; in recognition of the science linking

prenatal exposure to environmental chemicals and children's health, they recently extended their program to support reproductive health professionals. Each PEHSU has a hotline for health professionals who seek answers to patient questions.²⁰

Although many challenges to asking patients about their exposure to toxic chemicals remain (ie, time and training),¹⁶ the capacity to overcome these barriers is improving rapidly, and counseling patients about chemicals in their work and home environments is within the reach of practicing reproductive health professionals.

Recommendation 4: Champion environmental justice

Although FIGO's opinion emphasizes that it should not be a privilege to breathe clean air, eat nutritious food, drink potable water, or have a workplace free of poisons, the discovery and disclosure of the epidemic of lead poisoning from public drinking water in Flint, Michigan, reflects the persistent inequities in exposure to toxic environmental chemicals.^{21,22} The saga of Flint also illustrates how health professionals are championing environmental justice successfully in their own communities. Hanna-Attisha, a pediatrician, played an essential role in supporting the tireless efforts of community members to force action by local, state, and federal officials.^{22,23} In response to her patient's concerns about the water, she looked at the lead test data and determined, "We had an ethical, professional, moral responsibility to alert our community (to) what was going on."²³

Health professionals who work on climate change are at the forefront of action on environmental justice; an editorial in the *British Medical Journal* put it succinctly, "climate change is about poverty and equity."²⁴ The health impacts of climate change disproportionately impact low-income and other vulnerable patient populations in the United States and low-income countries around the world.²⁵ Physicians and medical scientists are working in many arenas to stimulate an urgent response to climate change,²⁶ and opportunities to "shout from the rooftops that climate change is a health problem"²⁴ abound. In just 1 example, our medical school at the University of California San Francisco is working to educate faculty members on how to integrate climate change and sustainability themes into existing courses, effectively normalizing environmental health and justice as part of healthcare among the next generation of physicians.

In summary, regarding the scope of health professional concerns, these 2 articles in AJOG are a bellwether of the content of medical journals to come. Reproductive health professionals are moving from "awareness of" to "patient-centered action" on the environmental threats to healthy reproduction and development. Indeed, this trajectory of health professional practice offers a powerful opportunity for keeping our families and communities healthy now and across generations. ■

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