Title

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

Journal

American Journal of Obstetrics and Gynecology, 214(5)

ISSN

0002-9378

Authors

Sutton, Patrice M
Giudice, Linda C
Woodruff, Tracey J

Publication Date

2016-05-01

DOI

10.1016/j.ajog.2016.03.029

HHS Public Access

Author manuscript

Am J Obstet Gynecol. Author manuscript; available in PMC 2019 July 15.

Published in final edited form as:

Am J Obstet Gynecol. 2016 May ; 214(5): 555–558. doi:10.1016/j.ajog.2016.03.029.

Moving From Awareness to Action on Preventing Patient Exposure to Toxic Environmental Chemicals

Patrice M. Sutton, MPH,
University of California, San Francisco Program on Reproductive Health and the Environment, San Francisco, California

Linda C. Giudice, MD, PhD, and
University of California, San Francisco, Department of Obstetrics, Gynecology and Reproductive Sciences

Tracey J. Woodruff, PhD, MPH
University of California, San Francisco Program on Reproductive Health and the Environment, San Francisco, California

A recent headline in the *New York Times* posed the question, “Are You A Toxic Waste Disposal Site?” [1] and a reasonable reply is “yes”. Toxic chemicals are ubiquitous in our homes, workplaces, and communities, and, consequently in everyone, everyday, everywhere. Two articles in this issue of AJOG bring 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 Blumberg, provides an overview of the burgeoning research linking exposure to endocrine disrupting chemicals (EDCs) with obesity, and recommends that strategies to prevent exposure to EDCs should be routinely discussed by obstetricians with their patients [2]. The second article, “Will my work affect my pregnancy?”: Resources for anticipating and answering patients’ questions by Grajewski, Rocheleau, Lawson, and Johnson, summarizes queries made to the National Institute for Occupational Safety and Health (NIOSH) regarding reproductive hazards encountered at work and importantly, provides invaluable resources to support clinicians in answering patient questions [3].

Publication of these two 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 has surged over the past three years. In 2013, the American College of Obstetricians and Gynecologists (ACOG) and the American Society for Reproductive Medicine (ASRM) published an Opinion calling 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

Corresponding author: Patrice Sutton, Mail Stop 0132, 550 16th Street 7th Floor, San Francisco, CA 94143, Patrice.Sutton@ucsf.edu.
The authors report no conflict of interest.

reproductive health impacts of exposure to toxic environmental chemicals [6]. FIGO includes 125 countries/territories, is the leading global voice of reproductive health professionals, and its actions have profound resonance.

Publication of the FIGO Opinion coincided with the FIGO "Summit on Shaping Our Planetary Survival," held in conjunction with the XXIII FIGO World Congress in Vancouver, British Columbia. The Summit brought together over 50 reproductive health professionals from 25 countries who began to develop a plan of action for 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 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/healthnottoxics.html

Thus, reproductive health professional societies in the U.S. and around the globe now regard the topic of preventing exposure to toxic chemicals as *their* issue. They now officially recognize the science linking 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 four mutually reinforcing recommendations for action by OBGYNs, women's health nurse practitioners, nurses, and other health professionals, and as described below, the good news is that OBGYNs and other reproductive health professionals can and are acting on each of these recommendations.

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 preventing exposure to toxic chemicals. In February 2016, five societies of reproductive health professionals, i.e., ACOG, the ASRM, the Endocrine Society, American Society of Reproductive Professionals, and the Society for Maternal-Fetal Medicine, joined nine other public and 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 (TSCA), 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], a policy gap likened by Dr. Linda Birnbaum, Director of the National Institute of Environmental Health Sciences to "… environmental chemicals act[ing] like uncontrolled medicine [11]."

Reproductive and other health professional societies recommended that efforts to reform TSCA 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 preventing harm, as individuals cannot act on their own behalf to prevent many environmental exposures, i.e., 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 al 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 [3]. Additionally, as Janesick and Blumberg 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 or not to proceed to human clinical trials for pharmaceuticals [2]. By the time human studies show harm, prevention has largely failed.

2. Work to ensure a healthy food system for all.

There is currently 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 health care 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 building community wealth in workforce development and jobs [13, 14].

For example,

- One in four hospitals in California participate in the Healthy Food In Health Care Program [14];
- Almost half of the fresh produce purchased for patients at Kaiser Permanente are sustainably produced and/or locally grown [15];
- Gundersen Lutheran Health System in Wisconsin co-founded a multi-stakeholder-owned Fifth Season Co-op to strengthen the local food economy by building the necessary infrastructure [13]; and
- In Detroit an expanding network of health care sites are connecting chronic disease patients, 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 undertaken by health professionals in organizations such as the California Nurses Association and the California Medical Association (CMA). In the case of the CMA, early initiatives raising concerns about pesticide use and health impacts within agricultural areas and schools laid the basis for follow-on comprehensive healthy food policies that were in turn supported 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 a powerful tool for preventing chronic disease.

3. Make environmental health part of health care.

A 2014 survey of U.S. obstetricians found that while the vast majority believed that asking about exposure to toxic chemicals would benefit their patient's health "they equated counseling with òpening Pandora's box', i.e., 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 paper by Grajewski et al demonstrates that healthcare professionals can feel secure in opening up a conversation with their patients about their workplace exposures because NIOSH, an agency of the U.S. Centers for Disease Control and Prevention (CDC), has resources and experts who can help find evidence-based answers to patient questions [3]. Grajewski et al provide guidance on asking about workplace exposures, and 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 non-occupational exposures through the CDC's Pediatric Environmental Health Specialty Units (PEHSUs)[20]. The PEHSUs, located throughout North America, are ready, willing, and able to respond to the myriad of patient queries, i.e., "should I tell my patients to avoid manicures in pregnancy?", "I ordered a lead level and it's high, what should I do?", "patient's 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?", and others. The PEHSUs have been serving the pediatric community for the past 15 years, and 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 seeking answers to patient questions [20].

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

4. Champion environmental justice.

While FIGO's opinion emphasizes 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 successfully championing environmental justice in their own communities. Dr. 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 working on climate change are at the forefront of action on environmental justice – as an editorial in the BMJ succinctly put it, “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 US 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 one example, our medical school at the University of California San Francisco is working to educate faculty 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 two 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.

Acknowledgments

Funding for this editorial was provided to the University of California, San Francisco (UCSF) Program on Reproductive Health and the Environment by the Barbara and Donald Jonas Family Fund, Forsythia Foundation, Fred Gellert Family Foundation, Marisla Foundation, Passport Foundation, Tides Foundation, the National Institute of Environmental Health Sciences (ESO22841), and the U.S. EPA STAR grants (RD83543301). The contents of this paper are solely the responsibility of the authors and do not necessarily represent the official views of the U.S EPA.

References

1. Kristof N: Are you a toxic waste disposal site? In: The New York Times. New York: The New York Times; 2016.
2. Janesick AS, Blumberg B: Obesogens: an emerging threat to public health. Am J Obstet Gynecol 2016.
3. Grajewski B, Rocheleau CM, Lawson CC, Johnson CY: Will my work affect my pregnancy? Am J Obstet Gynecol 2016.
4. American College of Obstetricians and Gynecologists Committee on Health Care for Underserved Women, American Society for Reproductive Medicine Practice Committee, The University of California San Francisco Program on Reproductive Health and the Environment: Exposure to toxic environmental agents. No. 575. In. Washington, D.C.: The American College of Obstetricians and Gynecologists; 2013.
5. American College of Obstetricians and Gynecologists Committee on Health Care for Underserved Women, American Society for Reproductive Medicine Practice Committee, The University of California San Francisco, Program on Reproductive Health and the Environment: Exposure to toxic environmental agents. Committee Opinion No. 575 Companion Piece. In. Washington, D.C.: American College of Obstetricians and Gynecologists; 2013.
6. Di Renzo GC, Conry JA, Blake J, DeFrancesco MS, DeNicola N, Martin JN Jr., McCue KA, Richmond D, Shah A, Sutton P et al.: International Federation of Gynecology and Obstetrics

opinion on reproductive health impacts of exposure to toxic environmental chemicals. Int J Gynaecol Obstet 2015.

7. Program on Reproductive Health and the Environment, FIGO: Summit on shaping our planetary legacy: setting an agenda for reproductive environmental health preconference discussion document. 2015.
8. Health Professional Organizations' Policy Statements Database [http://prhe.ucsf.edu/prhe/clinical/index.html-ps]
9. Cranor C: Legally Poisoned: How the Law Puts Us at Risk from Toxicants. Cambridge, MA: Harvard University Press; 2011.
10. Vogel SA, Roberts JA: Why The Toxic Substances Control Act Needs An Overhaul, And How To Strengthen Oversight Of Chemicals In The Interim. Health Aff (Millwood) 2011, 30(5):898–905. [PubMed: 21555473]
11. Birnbaum LS: When environmental chemicals act like uncontrolled medicine. Trends Endocrinol Metab 2013, 24(7):321–323. [PubMed: 23660158]
12. Hacker JS, Pierson P: The real cause of the Flint crisis. In: The Atlantic. 2016.
13. Norris T, Howard T: Can Hospitals Heal America's Communities? In.: Democracy Collaborative,; 2015.
14. Health Care Without Harm, San Francisco Bay Area Physicians for Social Responsibility: California healthy food in healthy care: harnessing the purchasing power and expertise of the health care sector to build a sustainable food system. In.
15. Kaiser and Healthcare without Harm Health Care Food Purchasing Power Infographic [https://noharm-uscanada.org/sites/default/files/documents-files/3124/HealthyFoodSystemInfographics(Print).pdf]
16. Stotland N, Sutton P, Trowbridge J, Atchley D, Conry JA, Trasande L, Gerbert B, Charlesworth A, Woodruff T: Counseling patients on preventing prenatal environmental exposures: A mixed-methods study of obstetricians. PLoS ONE 2014, 9((6)):e98771. [PubMed: 24964083]
17. University of California San Francisco Program on Reproductive Health and the Environment: Food Matters. In. Edited by UCSF Program on Reproductive Health and the Environment, Health Care Without Harm's Healthy Food in Health Care Initiative, Physicians for Social Responsibility; 2011.
18. SafetyNEST [http://www.mysafetynest.org/]
19. All That Matters Series of Patient Counseling Brochures [http://prhe.ucsf.edu/prhe/allthatmatters.html]
20. Pediatric Environmental Health Specialty Units (PEHSUs) [http://www.cdc.gov/features/pehsu/]
21. Hanna-Attisha M, LaChance J, Sadler RC, Champney Schnepp A: Elevated Blood Lead Levels in Children Associated With the Flint Drinking Water Crisis: A Spatial Analysis of Risk and Public Health Response. Am J Public Health 2016, 106(2):283–290. [PubMed: 26691115]
22. Bellinger DC: Lead Contamination in Flint - An Abject Failure to Protect Public Health. N Engl J Med 2016.
23. Gupta S, Tinker B, Hume T: 'Our mouths were ajar': doctor's fight to expose Flint's water crisis In: CNN. CNN; 2016.
24. Costello A, Montgomery H, Watts N: Climate change: the challenge for healthcare professionals. BMJ 2013, 347:f6060. [PubMed: 24108169]
25. Levy B, Patz J: Climate Change and Public Health. New York: Oxford University Press; 2015.
26. American Congress of Obstetricians and Gynecologists: Position statement: climate change and women's health. In.: American Congress of Obstetricians and Gynecologists; 2016.