AMERICAN MEDICAL ASSOCIATION WOMEN PHYSICIANS SECTION

Resolution: Assigned by HOD
(I-24)

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Subject: Regulation of Ionized Radiation Exposure for Healthcare Workers

Referred to: Reference Committee (Assigned by HOD)

Whereas, ionizing radiation is a known human carcinogen and breast tissue is particularly sensitive to radiation, with a direct linear correlation between increased exposure and heightened breast cancer risk;[1] and

Whereas, a survey of over five-hundred orthopedic residents find that 98% believed radiation safety personal protective equipment (PPE) should be provided, yet only 54.2% reported that it was made available to them;[2] and

Whereas, standard lead and lead-free aprons often leave the upper outer quadrant (UOQ) of the breast and axilla, common sites for breast cancer, exposed, and lead to increased vulnerability for radiation exposure and risk for breast cancer;[3] and

Whereas, radiation aprons that are both too tight or too loose and use C-arm X-Ray machines in the lateral projection instead of an anteroposterior projection both result in increased breast radiation dose-equivalent rates in the UOQ;[4] and

Whereas, recent studies indicate an increased risk of breast cancer among female surgeons, particularly those frequently exposed to ionizing radiation during image-guided procedures;[5] and

Whereas, in a recent study using artificial female torsos to assess radiation exposure, researchers discovered insufficient protection for the UOQ and found no statistically significant reduction in radiation dose in breast tissue when comparing standard PPE to a torso without PPE;[6] and

Whereas, research demonstrates that female orthopedic surgeons have 2.9-fold to 3.9-fold increase in the prevalence of breast cancer, compared with an age matched female population, and a recent study reports a 1.7-fold increase in breast cancer rates among female healthcare workers exposed to radiation compared to their non-exposed female healthcare worker counterparts;[5] and

Whereas, a 2022 study demonstrates a standardized prevalence ratio of invasive cancer, breast cancer, and melanoma in orthopedic surgeons to be 7.59%, 2.98%, and 1.49%, respectively, demonstrating a prevalence of cancer of 189% higher in female orthopedic surgeons than the general US female population when adjusted for age and race;[7] and

Whereas, unlike orthopedic surgeons, similar lifestyle and demographic female surgeons that are not exposed frequently to ionized radiation from image-guided techniques such as fluoroscopy, such as plastic or urologic surgeons, do not have an increased risk compared to the general population;[8] and

Whereas, in addition to surgeons, specialists such as cardiologists and radiologists, that rely on tools like fluoroscopy, also have increased risk of cancer, with one prospective cohort study pointing to elevated risks of brain cancer, breast cancer, and melanoma in radiologic technologists;[9] and

Whereas, fields with increased exposure to ionizing radiation are increasing in popularity for women, including an increase in female applicants to orthopedic surgery residency programs from 11.7% in 2007 to 23% in 2022,[10] highlighting the increased need for re-evaluation of current radiation protective measures; and

Whereas, it has been shown that many orthopedic surgeons are currently not satisfied with current options to protect themselves from radiation;[11] therefore be it

RESOLVED, that our AMA encourage public and private healthcare institutions to ensure more comprehensive coverage of different body types by providing PPE that more completely protects employees of all genders and pregnancy statuses, such as lead and lead-free aprons with capped sleeves, axillary supplements, and maternity aprons.

Fiscal Note: Assigned by HOD

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Relevant AMA Policy

Risks of Nuclear Energy and Low-Level Ionizing Radiation H-455.994

1. Our American Medical Association supports the following policy on nuclear energy and low-level ionizing radiation. Usefulness of Nuclear Energy: Energy produced by nuclear reactors makes an important contribution to the generation of electricity in the US at present, and it will continue to do so in the foreseeable future. Investigation and research should continue in order to develop improved safety and efficiency of nuclear reactors, and to explore the potential of competing methods for generating electricity. The research should include attention to occupational and public health hazards as well as to the environmental problems of waste disposal and atmospheric pollution.
2. Research on Health Effects of Low Level Radiation: There should be a continuing emphasis on research that is capable of determining more precisely the health effects of low level ionizing radiation.
3. Uranium Mill Tailings: Uranium mill tailings should be buried or otherwise covered.
4. Radioactive Waste Disposal: There should be acceleration of pilot projects to evaluate techniques for the disposal of high-level radioactive wastes. The decommissioning of nuclear reactors is a source of nuclear waste which requires accelerated technological investigation and planning.
5. Occupational Safety: The philosophy of maintaining exposures of workers at levels "as low as reasonably achievable (ALARA)" is commended. The present federal standards for occupational exposure to ionizing radiation are adequate. The responsibilities of the various federal agencies regarding workers in the nuclear energy industry should be clarified; these agencies include the Departments of Energy, Defense, HHS, Labor and Transportation; and the NRC, VA and EPA.
6. Minimizing Exposures to Radiation: Each physician should attempt to minimize exposures of patients to ionizing radiation in accord with good medical practice.
7. Radiation Exposure Standards: The present standards for exposure of populations to ionizing radiation are adequate for the protection of the public.
8. Emergencies and Governmental Readiness: Government agencies at all levels should be prepared to respond to nuclear energy-related emergencies. There is need for improved public planning by the several federal agencies involved, including the Federal Emergency Management Agency (FEMA) and the agencies of state and local governments. Responsible officials should develop skills and undergo periodic retraining in order to be able to act appropriately during major radiation emergencies. Because emergency planning is a complex task involving aspects of health as well as problems related to utilities, state and local governments and the federal government (FEMA) would benefit from the cooperation of physicians and others in the health sciences.
9. Federal Radiation Emergency Planning Responsibilities: Federal groups such as the NRC and FEMA must work together closely to fulfill responsibilities in radiological emergency preparedness and in crisis management. There is a need for NRC and FEMA to define better the roles of community hospitals and of physicians.
10. Reactor Operators and Radiation Inspectors: There is a need for better training of operating personnel with regard to prevention and management of untoward reactor operating conditions. Selection, training, and ongoing performance evaluation of operating personnel, and of radiation inspectors, are key elements in the safety of reactor workers and of the public. Physicians should help develop methods of selecting and evaluating personnel in the nuclear power industry.
11. Radiation Training for Physicians: Physicians should be prepared to answer the questions of their patients about ionizing radiation, especially if there is a radiation emergency. Each hospital should have adequately trained physicians and a plan and protocol for receiving and caring for radiation victims.

12. Radiation Education for the Public: Further education of the public about ionizing radiation is recommended.
13. Location of Nuclear Reactors: All nuclear reactors built in the future should be placed in areas of low population density; present reactors located in low density areas should be managed so that the populations surrounding them remain small.
14. Multiple Sources of Power Generation: AMA recommends the use of a diverse set of electricity generating methods and a continuing emphasis on the conservation of energy.
15. X-Ray Security Scanners:
    1. Our AMA believes that as of June 2013, no data exist to suggest that individuals, including those who are especially sensitive to ionizing radiation, should avoid backscatter security scanners due to associated health risks.
    2. Our AMA supports the adoption of routine inspection, maintenance, calibration, survey, and officer training procedures meant to ensure that backscatter security scanners operate as intended.

Monitoring Patient Exposure to Ionizing Radiation H-455.976
Our American Medical Association will support public health, radiology and radiation oncology specialty societies and all other interested parties to monitor the issue of radiation exposure to the American public and develop a plan, if appropriate, to allow the ongoing monitoring and quantification of radiation exposure sustained by individual patients in medical settings.

Ionizing Radiation Exposure in the Medical Setting H-455.977
1. Our American Medical Association will support appropriate specialty medical societies and other interested stakeholders to collaborate:
    a. For feasibility of monitoring and quantifying the cumulative radiation exposure sustained by individual patients in medical settings.
    b. Continue to educate physicians and the public on the appropriate use and risks of low linear energy transfer radiation in order to reduce unnecessary patient exposure in the medical setting.
2. Our AMA will continue to monitor the National Academy of Sciences' ongoing efforts to study the impact of low levels of low linear energy transfer radiation on human health.
3. Our AMA will support education and standards for all providers and medical personnel using ionizing and non-ionizing radiation that includes awareness of, and methods to avoid, patient over-radiation.
4. Our AMA will support policies that promote the safe use of medical imaging devices, informed clinical decision-making regarding the use of procedures that use radiation, and patient awareness of medical radiation exposure.
5. Our AMA will encourage the continued development and use of standardized electronic medical record systems that will help physicians track the number of imaging procedures a patient is receiving, in both the in-patient and out-patient settings, which will help physicians discuss the potential dangers of high level of radiation exposure with patients.

Effects of Electric and Magnetic Fields H-460.938
- The AMA: (1) will continue to monitor developments and issues related to the effects of electric and magnetic fields, even though no scientifically documented health risk has been associated with the usually occurring levels of electromagnetic fields; (2) encourages research efforts sponsored by agencies such as the National Institutes of

Health, U.S. Department of Energy, and the National Science Foundation to continue on exposures to electromagnetic fields and their effects, average public exposures, occupational exposures, and the effects of field surges and harmonics; and (3) supports broad dissemination of findings and recommendations of authoritative, multidisciplinary committees, such as those convened under the auspices of the National Academy of Sciences, National Council on Radiation Protection, International Agency for Research on Cancer, and the National Institute for Environmental Health Sciences.

Advancing Gender Equity in Medicine D-65.989

1. Our American Medical Association will:
    a. advocate for institutional, departmental and practice policies that promote transparency in defining the criteria for initial and subsequent physician compensation.
    b. advocate for pay structures based on objective, gender-neutral criteria.
    c. encourage a specified approach, sufficient to identify gender disparity, to oversight of compensation models, metrics, and actual total compensation for all employed physicians.
    d. advocate for training to identify and mitigate implicit bias in compensation determination for those in positions to determine salary and bonuses, with a focus on how subtle differences in the further evaluation of physicians of different genders may impede compensation and career advancement.
2. Our AMA will recommend as immediate actions to reduce gender bias:
    a. Elimination of the question of prior salary information from job applications for physician recruitment in academic and private practice.
    b. Create an awareness campaign to inform physicians about their rights under the Lilly Ledbetter Fair Pay Act and Equal Pay Act.
    c. Establish educational programs to help empower all genders to negotiate equitable compensation.
    d. Work with relevant stakeholders to host a workshop on the role of medical societies in advancing women in medicine, with co-development and broad dissemination of a report based on workshop findings.
    e. Create guidance for medical schools and health care facilities for institutional transparency of compensation, and regular gender-based pay audits.
3. Our AMA will collect and analyze comprehensive demographic data and produce a study on the inclusion of women members including, but not limited to, membership, representation in the House of Delegates, reference committee makeup, and leadership positions within our AMA, including the Board of Trustees, Councils and Section governance, plenary speaker invitations, recognition awards, and grant funding, and disseminate such findings in regular reports to the House of Delegates and making recommendations to support gender equity.

4. Our AMA will commit to pay equity across the organization by asking our Board of Trustees to undertake routine assessments of salaries within and across the organization, while making the necessary adjustments to ensure equal pay for equal work.
5. Our AMA will:
    a. require all members elected and appointed to national and regional AMA leadership positions to complete AMA Code of Conduct and anti-harassment training, with continued evaluation of the training for effectiveness in reducing harassment within the AMA.
    b. work with the Women Physicians Section, American Medical Women's Association, GLMA: Health Professionals Advancing LGBTQ Equality, and other stakeholders to identify an appropriate, evidence-based anti-harassment and sexual harassment prevention training to administer to leadership.