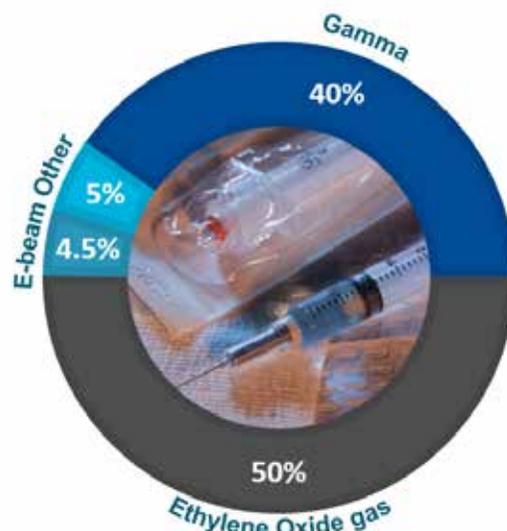


Electron Beams for Medical Device Sterilization

Cutting-Edge Technology for the Medical Industry

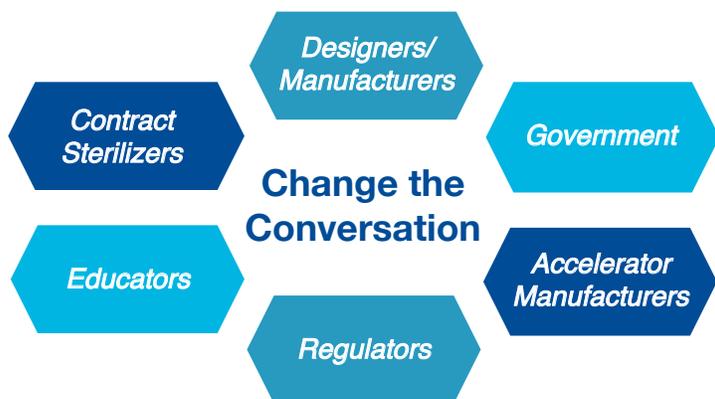
Electron beams from accelerators have long been used to sterilize medical devices, though historically, the market share of this method has been small. However, the continued development of accelerators at the national labs for scientific research has resulted in accelerator designs that are more accessible to industry.

The resulting powerful electron beams can be used to produce X-rays, which are directly comparable to gamma rays, the predominant form of radiation sterilization. The stage is now set for electron beams and X-rays to be used for a much larger fraction of radiation sterilization and even some sterilization that presently uses toxic gasses.



Current Challenges

- Public concern about the dominant use of cobalt radiation and toxic gases in the sterilization process
- Cost of changing modalities
- Lack of knowledge when developing new products and a reluctance to explore new technology



Read our publication on Medical Device Sterilization:



Accelerator-driven Medical Sterilization to Replace Co-60 Sources



2019 Midwest Medical Device Sterilization Workshop: Summary Report

Current opportunity: Fermilab is partnering with industry to gather sterilization stakeholders to determine the next steps in changing modalities. We will offer a workshop in September.

Contact us to join the proceedings.

The business case for accelerators

\$140B
Value of US medical device market in 2015

45%
US market share of global medical device market in 2015

\$45B
Value of US exports of medical device in 2015

Cutting-edge technologies from the national labs are being used in new accelerator designs that promise to reduce the cost of accelerator-based radiation sources. This could provide financial incentive for companies to consider e-beam or x-ray sterilization.

For more information contact

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