BLOCK 3 OF INSTRUCTION: The Bench-to-Bedside-to-Community Continuum

OVERVIEW: Medical schools and students, as well as teaching hospitals, residents, and patients, all play a role in medical research at different points along the research timeline. This block discusses the bench-to-bedside-to-community continuum and the roles of nonresearchers in medical research.

OBJECTIVES:

- Explain the bench-to-bedside-to-community continuum.
- Discuss the role of patients in medical research.
- Discuss the role of medical students, graduate students, and residents in medical research.
- Discuss how medical schools and teaching hospitals work with research institutions.
- Set up the role of government in the bench-to-bedside-to-community continuum for further discussion in later blocks.

SUGGESTED PRESENTERS:

- Medical researchers
- Hospital CEO or director of research
- Medical school dean
- Dean of research
- Medical students
- Residents
- Patients

SUGGESTED TIME: 2 hours

KEY TOPICS:

- Provide an overview of the bench-to-bedside-to-community continuum.
    - How does medical research start? How is patient care or population or community health involved in the creation of research projects?
    - What are the key steps in the research timeline?
    - Who is involved in the bench-to-bedside-to-community continuum?
        - How do various institutions play a role in this timeline? For example: How does your institution interact with medical schools? How does your institution interact with teaching hospitals?
        - What people play a role in this timeline? For example: How does your institution interact with medical students and residents? How does your institution interact with patients?

  - How does the government play a role?
  - Do these interactions ever contradict each other or are they intertwined?

- Describe how medical research leads to more effective patient care or population health.

- Describe how your institution works with potential beneficiaries of medical research to understand what outcomes matter to them.
  - Discuss how patient engagement is crucial to understand the outcomes that matter most to individuals and their families who are affected directly by new drugs and devices.
  - Explain how community engagement can identify research questions that matter to area residents, how health and health care needs can be addressed through science, and how community assets can assist with the development, implementation, and evaluation of clinical and community-based interventions.
  - Explain how all research—from basic to clinical to population—can be conducted through a lens of health equity in order to describe avoidable and systematic group differences in health, understand why such gaps exists, and develop interventions that ensure that all Americans have the opportunity to attain their best possible health.

ACTIVITIES:

- Have medical researchers discuss projects in a laboratory setting. Encourage hands-on participation. For example, have participants look through microscopes, examine results, and conduct tests. Present the projects in a timeline from early on to close to completion.

- Host a roundtable discussion with patients who have benefited from medical research conducted at your institution. Consider including patients from surrounding communities who have participated in, and have benefited from, clinical trials.

RECCOMENDATIONS:

- Encourage presenters to interact with participants. Make this a dynamic discussion, rather than a one-way flow of communication. Set this tone for the day early in the program by telling participants that you want the day to be a dialogue and inviting them to interrupt presenters to ask questions. Always attempt to make presentations more hands-on.

- If possible, avoid conducting labs or experiments involving animals. Medical schools and teaching hospitals closely adhere to high ethical standards when using animals in medical research; however, this is a controversial issue. If the program does expose participants to animal research, be sure to follow your institution's guidelines and to prepare for questions.

- If possible, avoid conducting labs or experiments involving fetal tissue or human embryonic stem cells (as opposed to adult stem cells or induced pluripotent stem cells). Although these types of research are important to human medicine and are strictly controlled for ethical standards, they nevertheless remain controversial with some sectors of the public. The importance of such research can be demonstrated in other, topical forums.

- When recruiting presenters, select those who have a history of effective communication with lay audiences. Most PME participants come from a background with little knowledge of medical science. Presenters should not assume that the audience has knowledge of basic medical concepts. Stay away from medical jargon. Coach presenters prior to the event and encourage them to be mindful of their audience when presenting.

- Prepare and distribute a list of significant medical discoveries or innovations in patient care from your institution. Focus on discoveries that directly affect patients or are easily understandable.

RESOURCES:

Medical Research (webpage)

Medical Research Funding and Regulation (webpage)

The Economic Impact of AAMC Medical Schools and Teaching Hospitals (2018) - Research (website)

Academic Medicine Investment in Medical Research (PDF)

Research Means Hope (website)

Foundation for Biomedical Research (website)