**Medical Student Attitudes toward Personalized Medicine**

This survey on medical students’ knowledge of and experience with genomic testing and personalized medicine is part of a research study that aims to understand how the introduction of personalized medicine at the Icahn School of Medicine at Mount Sinai impacts medical student education.

This survey asks about your current understanding of genomic testing, your attitudes about genomics in clinical practice, and how you expect to use genomics and personalized medicine in your career. The survey should take less than 10 minutes to complete.

Your participation in this study is entirely voluntary and you can withdraw from the study at any time. If you choose to complete the survey, your responses will not be directly linked to your name. All study results will be aggregated and will not be used to report on individual medical students. All of your answers will be confidential.

Thank you for your help.

**Introduction**

The Institute for Personalized Medicine (IPM) at Mount Sinai recently initiated a pilot pharmacogenomics (PGx) project. The purpose of the IPM PGx study is to develop the tools and best practices for genome-guided medicine. The following questions ask about your knowledge of and experience with genomic testing and personalized medicine.

**Definitions**

**Genomics** is the study of an organism’s entire genetic makeup, i.e. the complete set of DNA (both coding and non-coding) within an organism.

**Next Generation Sequencing (NGS)** is a high throughput approach to DNA sequencing that involves the parallel sequencing of millions of DNA strands at a time. This is also known as “second generation sequencing” or “massive parallel sequencing”.

**Pharmacogenomics** is the study of a patient’s genetic profile and its relationship to and influence on his/her response to medications. **Genome-guided prescribing** refers to the use of patient genotype data to make prescribing decisions.

**Direct-to-consumer (DTC) genetic testing** is a means for individuals to have genetic testing performed outside the healthcare setting, generally by ordering and receiving test results directly over the Internet.

**Personalized medicine** is an emerging practice of medicine that uses an individual's genetic profile to guide clinical decisions made in regard to the prevention, diagnosis, and treatment of disease.

**Please indicate the extent to which you agree with each item:**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | **not at all** | **to a slight extent** | **to a moderate extent** | **to a great extent** | **to a very great extent** |
| 1. I would be willing to use new types of therapy/interventions to help my patients **openess** |  |  |  |  |  |
| 1. Clinical experience is more important than using a patient’s genetic information to make decisions **divergence** |  |  |  |  |  |
| 1. My medical education has adequately prepared me to practice personalized medicine **education** |  |  |  |  |  |
| 1. I would not be willing to prescribe different medications or doses of medications based on a patient’s genetic information **divergence** |  |  |  |  |  |
| 1. Clinicians know better than academic researchers how to treat patients **divergence** |  |  |  |  |  |
| 1. I know whom to ask questions regarding genomic testing **education** |  |  |  |  |  |
| 1. I would be willing to use a patient’s genetic information to guide my decisions in clinical practice **openess** |  |  |  |  |  |
| 1. Research-based genome-guided prescribing tools are not clinically useful **divergence** |  |  |  |  |  |
| 1. I think that it is important to learn about personalized medicine   **education** |  |  |  |  |  |
| 1. I would be willing to try genome-guided prescribing tools that are developed by researchers **openess** |  |  |  |  |  |
| 1. My professors have encouraged the use of personalized medicine **education** |  |  |  |  |  |
| 1. I would be willing to use genome-guided prescribing in my career even if more senior physicians around me were not **openess** |  |  |  |  |  |

**Please answer the following questions about your attitudes toward direct to consumer (DTC) genetic testing:**

|  |  |  |  |
| --- | --- | --- | --- |
|  | ***yes*** | ***no*** |  |
| 1. Have you heard of DTC companies such as 23andMe? |  |  |  |

|  |  |  |  |
| --- | --- | --- | --- |
|  | ***would not use*** | ***would use*** | ***did use*** |
| 1. Have you used or would you consider using DTC services? |  |  |  |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | ***strongly disagree*** | ***disagree*** | ***uncertain*** | ***agree*** | ***strongly agree*** |
| 1. I know enough about genetics and genomics to understand DTC test results? |  |  |  |  |  |

**Please answer the following questions about your comfort using technology:**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | ***not at all comfortable*** | ***not very comfortable*** | ***neither comfortable nor uncomfortable*** | ***comfortable*** | ***very comfortable*** |
| 1. How comfortable are you with using computers? |  |  |  |  |  |
| 1. How comfortable are you with using EPIC (the local electronic health record system)? |  |  |  |  |  |

**Please answer the following questions about your familiarity with genomic testing concepts:**

**How comfortable are you in your knowledge about:**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | ***not at all comfortable*** | ***not very comfortable*** | ***neither comfortable nor uncomfortable*** | ***comfortable*** | ***very comfortable*** |
| 1. Basic genomic testing concepts and terminology? |  |  |  |  |  |
| 1. Pharmacogenomics? |  |  |  |  |  |
| 1. Genetic variation predisposing to common diseases (such as diabetes, kidney, and heart disease)? |  |  |  |  |  |
| 1. Next generation sequencing? |  |  |  |  |  |

**How comfortable are you in your ability to:**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | ***not at all comfortable*** | ***not very comfortable*** | ***neither comfortable nor uncomfortable*** | ***comfortable*** | ***very comfortable*** |
| 1. Recommend genomic testing options to patients? |  |  |  |  |  |
| 1. Understand genomic test results? |  |  |  |  |  |
| 1. Explain genomic test results to patients? |  |  |  |  |  |
| 1. Make treatment recommendations based on genomic test results? |  |  |  |  |  |

**Please answer the following questions about your background:**

1. What is your age range?  23 or younger  24 - 25  26 or older
2. What is your gender? (optional)  Male  Female
3. Are you a medical student?  Yes  No

If YES, what is your current medical school (MS) year?  MS1  MS2  MS3  MS4

1. Are you in a dual degree program?  Yes  No

If YES, which dual degree program are you in? (optional)  MD/PhD  MD/MPH  MD/MSCR

1. Are you interested in a career that involves research?  Yes  No  Don’t know

If YES, what type of research are you interested in?  Clinical  Translational  Basic Science  Don’t know