Final Genetics Challenge

Recent advances in genetics have allowed neuroscientists to understand some fundamental operations of the brain during the process of learning. Moreover, this understanding has led to development of pharmacogenetic drugs which attempt to enhance the human brain’s ability to learn. An individual’s response to these learning-enhancement drugs is genetically predisposed, and therefore a variety of drugs targeting different neural operations are required to enhance learning in the entire population.

Currently, the efficacy of these drugs is minimal for about 60% of the US population, meaning that only 40% would stand to benefit from taking the drugs. The primary benefit is faster progression through elementary and secondary education, resulting in a competitive workforce advantage.

As a public health official with a background in biomedical engineering, you are responsible for insuring the general welfare of all US citizens. However, a wide range of principles contribute to the citizens’ welfare- everything from education and intelligence to equality and equity. The arrival of these pharmacogenetic drugs poses an interesting quandary for your office. A more globally competitive workforce is obviously beneficial to the country, but is it worth the cost of potential domestic inequities which will arise between those genetically susceptible to the drugs and those who are not? Additionally, manufacturers of these drugs and the genetic tests necessary to determine their effectiveness prior to prescription are American companies; however, other countries, predominantly in the 3rd World, have expressed interest in acquiring the drugs to further their own global competitiveness.

You have the opportunity to regulate or not regulate the usage and export of these pharmacogenetic drugs. Based on what you know about genetic information availability, discrimination, and ownership, brainstorm a list of specific ethical issues you face when deciding how to regulate these drugs. Consider a range of regulatory options and recommend one which you think is ethically suitable.

Cycle is complete