Edward Phillips

THERAC-25 Ethical Dilemma

Software is a tricky thing to come up with a blanket set of rules for regulation. Software is used in every aspect of people's lives and can come with different levels of consequences. When it comes to a person's health, the consequences can be dire. With a person's wellbeing being on the line, health care providers and manufacturers of medical software can charge very high prices for their products and services. Without health insurance, affording care can destroy someone's financial wellbeing and that was the case for over 27 million Americans in 2018 (census.gov). In the case of THERAC-25, this would have increased the price of the machine, making it less available to the people that could not afford the procedure.

When it comes to someone's life, of course they would want the product to be one hundred percent tested and proven safe, but that is not always affordable to do. It is shown that "at some point the investment to uncover that last 1% of issues is outweighed by the high cost of finding them" (Jenkins, 2018). That increased cost could greatly reduce the amount of people that could be potentially saved. A device that is available and saves a million people but hurts a few in the process is still saving more people than a device that is only available to a few that does not hurt anyone. Where the line needs to be drawn is honestly from the developers and manufactures about what they know and have tested of the product.

While the amount of testing when it comes to medical software should be weighed against the cost, the amount of information shared to the users should not be weighed against anything. Psalms 25:21 reads, "Let integrity and uprightness preserve me; for I wait on thee." The consumer has the right to know what the potential risks and benefits are to using a certain

device. Absolutely nothing should be left out, even if that includes stating that the software is not fully tested in all aspects and some risks may be unknown. The ACM Code of Ethics states, "A computing professional should be transparent and provide full disclosure of all pertinent system capabilities, limitations, and potential problems to the appropriate parties" (acm.org). This allows the user to make a fully informed choice about their own life, instead of being in the dark about potential risks. It could even help to reduce the liability from the developers if something were to go wrong, benefitting both parties in the process.

One way that this could be enforced is by states requiring software engineers to have certain certifications to work like they do with other types of engineers. South Carolina alone has many different certifications that engineers are required to have to work. This helps standardize the required knowledge of engineers who come from different upbringings and educational backgrounds. Software engineers go through the same thing, so they too should be required to upkeep certifications that prove they are informed of the correct and ethical practices of their profession. Not only will it help to standardize the practices of software engineers but maintaining active certifications would help upkeep their information about the correct practices and procedures. Technology is an ever-evolving beast and new things are discovered and upgraded every day. It is easy to fall behind on what the latest and greatest methods of the industry. Requiring certifications would help with this.

Software engineers have a big responsibility with their jobs. Software is used in every aspect of a person's life, including their health. It is important that these professionals maintain a code of ethics and strive to always better society. Even as the industry evolves and changes at the rapid pace it does, their responsibility to serve the community will always stay the same.

Bibliography

"ACM Code of Ethics and Professional Conduct." *Code of Ethics*, 2018, https://www.acm.org/code-of-ethics.

Bureau, US Census. "Health Insurance Coverage in the United States: 2018." *Census.gov*, 8 Oct. 2021, https://www.census.gov/library/publications/2019/demo/p60-267.html.

Jenkins, Nick. "A Software Testing Primer." *Campnavigator*, 2008, https://www.campnavigator.com/ListingImages/camp-gan-texas-fhfv.pdf.

Online, King James Bible. "King James Bible Online." *PSALMS CHAPTER 25 KJV*, Nov. 2007, https://www.kingjamesbibleonline.org/Psalms-Chapter-25/.