

## Ethics—Programming in healthcare

There are many systems in healthcare industry that are used to treat and monitor patient's ailments. Systems like a glucose monitors and heart monitors are used to relay information to doctors so that the patient can be treated properly. And while some of these systems are not necessarily life critical, if they provide invalid information, it will be difficult to know how to treat the patient. However, other systems like a defibrillator and a pacemaker are more life critical. These systems must work properly when they are needed, or the patient will most likely die. Additionally, there are systems that administer treatments to patients. The THERAC-25 was one of these systems, but due to bugs in the programming THERAC-25 would provide lethal doses of radiation to patients. The bugs slipped by the programmer and the company that requested the development of the device due to a lack of testing (Levenson & Turner). So, how much testing should be done to ensure that a medical system operates properly?

Testing takes time and time is something that is very valuable in the medical field. So, rushing or skipping testing can get the system to patients and possibly help them sooner. The only problem is an untested product could harm a patient further and lead to a loss of life. Furthermore, Testing also requires money and the company that requested the development of the product might not want to spend much money on testing, which will help keep the product cost down. And the lower the product cost means that more people will be able to afford the product.

Nevertheless, even if a developer is not getting paid to test a system it is their responsibility as a programmer to provide a competent, well tested product to their client (IEEE).

Also, the Bible says to do everything to the best of our abilities because we are working for the Lord. In other words, programmers should always test their products and make sure that they work properly. Also, the company should be upfront with the amount of testing that went into their product so that the patients can decide if they want to use the more expensive option or go with a cheaper product that could be less reliable.

Secondly, many US states require engineers to have a certification in certain fields of work to ensure that they can expertly produce a dependable product. Software engineers are not required to have a certification. And while certification would be overkill for certain projects those that are wanting to develop life critical systems—like medical devices—should be required to have a certification.

In conclusion, all programmers should test their system no matter if they are being paid to do so. And if a company decides to keep down product cost by not testing then they should be upfront so that the patients can decide on whether they want to risk trying out the product or not. Finally, programmers should be required to have a certification so that they can work on life critical systems.

### Works Cited

“Bible Gateway Passage: Colossians 3:23-24 - New International Version.” Bible Gateway, <https://www.biblegateway.com/passage/?search=Colossians+3%3A23-24&version=NIV>.

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