Initial Post

by Sahr Solar Sumana - Monday, 6 May 2024, 11:20 PM

This focal point of this post is on the case of Medical Implant Risk Analysis and Corazón's implantable heart monitoring device (ACM, 2021). Corazón's ethics based around their heart monitoring device aligned with the British Computer Society's (BCS), (2022) principle of public interest where Corazón have practiced this by gaining approval from medical device regulation agencies and worked with charities to provide access to patients below the poverty line (ACM, 2021). Seeking approval from regulators enforced the idea that Corazón are accountable and compliant with regulatory bodies, as well as transparent with all interested stakeholders (Corrêa et al., 2023).

Corazón also aligned with the third and fourth rules of the BCS code of conduct; duty to relevant authority and duty to the profession (BCS, 2022). Although an independent researcher discovered a vulnerability in the wireless connectivity of the medical implant, Corazón consulted with the researcher to conclude that the risk of harm was negligible (ACM, 2021). This presented a duty to the profession by having professional standards upheld and maintained by the company without engaging in any controversial practices, and instead co-operating with stakeholders that have made claims about the medical implant, this also relates to the duty to relevant authority as responsibilities were carried out with due diligence and care.

Reference List:

ACM (2021) *Case: Medical implant risk analysis - ACM ethics*, *ACM Ethics - The Official Site of the Association for Computing Machinery's Committee on Professional Ethics*. Available at: https://ethics.acm.org/code-of-ethics/using-the-code/case-medical-implant-risk-analysis/ (Accessed: 06 May 2024).

BCS (2022) *BCS-code-of-conduct.pdf*, *CODE OF CONDUCT FOR BCS MEMBERS*. Available at: https://www.bcs.org/media/2211/bcs-code-of-conduct.pdf (Accessed: 06 May 2024).

Corrêa, N.K. *et al.* (2023) 'Worldwide AI ethics: A review of 200 guidelines and recommendations for AI Governance', *Patterns*, 4(10). doi:10.1016/j.patter.2023.100857.

Peer Responses

Peer Response

by Sahr Solar Sumana - Tuesday, 7 May 2024, 6:10 PM

Hi Alex

Your post clearly states that the medical technology implemented by Corazón does have the overall benefit of being 'useful and therapeutic' to patients. Where you then go on to state how Corazón have broken the guidelines and regulations that have been implemented by the ACM and BCS. The specific rules that have been broken have also been outlined with points being supported with external sources, along with the repercussions that the company could face.

It would be good to explore the guidelines that Corazón have followed in order to not breach any regulatory standards. Some of the steps taken include being approved by multiple countries' medical device regulation agencies and making vocal commitments to secure patient's information (ACM, 2021). The question may need to be asked if corporate social responsibility from Corazón is enough to compensate for the shortcomings of the company? It would be interesting to explore this area of ethics as this was somewhat covered in the reference provided in your initial post where Dobrzański et al (2021) stated that patients could lose trust within the company due to security concerns, where they may be discouraged from using potentially life-saving implantable devices.

Reference List:

ACM (2021) *Case: Medical implant risk analysis - ACM ethics*, *ACM Ethics - The Official Site of the Association for Computing Machinery's Committee on Professional Ethics*. Available at: https://ethics.acm.org/code-of-ethics/using-the-code/case-medical-implant-risk-analysis/ (Accessed: 06 May 2024).

Dobrzański, L.A., Dobrzańska-Danikiewicz, A.D. and Dobrzański, L.B., 2021. Effect of biomedical materials in the implementation of a long and healthy life policy. *Processes*, *9*(5), p.865.

Peer Response

by Sahr Solar Sumana - Tuesday, 7 May 2024, 7:59 PM

Hi Joy

Your initial post has clearly listed the principles sourced from the ACM code of ethics (2018) alongside extracts from the ACM case named 'Abusive Workplace Behaviour'. Where it was outlined, that Max broke many principles by making the work environment hostile through verbal abuse, discrimination and denial of credit (Ngugi, 2024). As well as this, the code of conduct from the BCS is also systematically outlined alongside extracts from the case study, making the points made very easy to decipher by the reader.

There is also a brief analysis of how the actions of Max coupled with the lack of action from Jean fall short to the standards put in place by the aforementioned regulatory bodies. Although the initial post is limited to 200 words it would be beneficial to delved deeper into which additional stakeholders would be affected and how they would be affected too. Your reference from UKEssays (2018), briefly touches on the profession's reputation with society, but it would be interesting to see which societal figures would be affected.

Reference List:

ACM. (2018). *ACM Code of Ethics and Professional Conduct*. Available from: **https://www.my-course.co.uk/mod/forum/discuss.php?d=228397** [Accessed 7 May 2024].

Ngugi, J (2024). Initial Post. Available from: **https://www.my-course.co.uk/mod/forum/discuss.php?d=228501** [Accessed 7 May 2024]

UKEssays. (2018, November). *Comparison Between BCS And ACM.* Available from: **https://www.ukessays.com/essays/information-technology/comparison-between-bcs-and-acm-information-technology-essay.php#citethis** [Accessed 7 May 2024].

Peer Response

by Sahr Solar Sumana - Wednesday, 15 May 2024, 12:34 PM

Rory, thank you for your initial post, I chose to make my initial post on the same topic too. I found that you systematically listed the practices made by Corazón alongside the principles enforced by the British Computer Society (BCS) and the Association for Computing Machinery (ACM). It would be interesting to explore the shortfalls that Corazón have encountered with their medical implant and how some of the principles may have been breached, with one example being a vulnerability in the wireless connectivity (ACM, 2021).

With a deeper analysis of the implant produced by Corazón there are also some ethical implications on the long term effects of medical implants, Saha (2008) looked into the challenges that manufacturers face when producing medical implants and that trade-offs that have to be undertaken to create a product that is safe, affordable for the technology deployed and easy to use for operators. Maybe this is an avenue that could be explored when identifying any shortcomings that Corazón may have encountered in relation to the principles enforced by BCS and ACM.

Reference List:

ACM (2021) *Case: Medical implant risk analysis - ACM ethics*, *ACM Ethics - The Official Site of the Association for Computing Machinery's Committee on Professional Ethics*. Available at: https://ethics.acm.org/code-of-ethics/using-the-code/case-medical-implant-risk-analysis/ (Accessed: 15 May 2024).

Saha, S. (2008). Ethics of Medical Device Safety. *Journal of Long-Term Effects of Medical Implants*, 18(2), pp.167–174. doi:https://doi.org/10.1615/jlongtermeffmedimplants.v18.i2.50.

Summary post

Summary post

by Sahr Solar Sumana - Tuesday, 18 June 2024, 12:40 AM

My initial post focused on the ACM (2021) case study on Medical Implant Risk Analysis and Corazón's implantable heart monitoring device. Looking back on my initial post my perspective was relatively optimistic when comparing the processes that Corazón followed in order to adhere to the British Computer Society's (BCS) guidelines.

I received peer responses to my initial post that were very insightful Ngugi (2024) has noted my optimism for the approach taken Corazón and advised that it would be advantageous to also consider the psychological safety and trust of their users. As it is a good idea to reinforce confidence within users of the implant even if the potential risks are minimal. This is supported by Joung (2013) who outlined the fact that patients can feel discomfort owing to the foreign object and uncertainty around the device's functions. Which could in turn affect the psychological wellbeing of a patient if the implant is installed with negligence.

I also received an interesting peer response from Fisher (2024) who advised me to look into a Man in the Middle attack (MiTM), this was definitely insightful and gave me a perspective on how there can be an ongoing risk when you are the recipient of a medical implant. It was good to have this input from Steve Fisher as he studies cybersecurity whereas I study data science, so knowledge from a different pool was added to the discussion.

Reference List:

ACM (2021) *Case: Medical implant risk analysis - ACM ethics*, *ACM Ethics - The Official Site of the Association for Computing Machinery's Committee on Professional Ethics*. Available at: https://ethics.acm.org/code-of-ethics/using-the-code/case-medical-implant-risk-analysis/ (Accessed: 17 June 2024).

Fisher, S. (2024). *Codes of Ethics and Professional Conduct*. [online] Codes of Ethics and Professional Conduct - Peer Response. Available at: https://www.my-course.co.uk/mod/forum/discuss.php?d=229405 [Accessed 17 Jun. 2024].

Joung, Y.-H. (2013). Development of Implantable Medical Devices: From an Engineering Perspective. *International Neurourology Journal*, 17(3), p.98. doi:https://doi.org/10.5213/inj.2013.17.3.98.

Ngugi, J. (2024). *Codes of Ethics and Professional Conduct*. [online] Codes of Ethics and Professional Conduct - Peer Response. Available at: https://www.my-course.co.uk/mod/forum/discuss.php?d=229405 [Accessed 17 Jun. 2024].