

### Unit 3 – Summary

In unit 1 students were discussing their thoughts on a research paper named [“Compromising a Medical Mannequin”](#).

The purpose of the paper was to test how secured medical mannequins (or other medical devices) network connections are using a team of inexperienced students and the BackTrack 5 r3 software.

The students had limited time to research and select their path of work and the way the software works.

Eventually, the students decided to perform a brute force attack against the mannequin’s WPS PINs and a Denial of Service (Dos) attack against the mannequin and Muse software (the software which the user uses to control the device).

In both tests, the students despite their inexperience with the BackTrack software managed to “crack” the WIFI password and disrupt the connection between the mannequin and Muse. This demonstrates how easy it is to hack into devices controlling human lives, and how important it is to prioritise the security and integrity of network-enabled devices.

My recommendations for improving the security of these devices were to install a firewall to block DoS attacks either within the device or by using an external “front-end” device to operate as a proxy. Cybersecurity awareness training should be provided to all personnel operating IT and network-connected IT devices as well.

Additionally, my fellow students recommended disabling WPS (Spyros and Anrich), to introduce a login system protected by maximum tries (Anum) and an introduction of a strong enterprise (WPA2) WIFI security protocol such as EAP-TLS (certificate-based authentication) (Umar).

### References:

Glisson, W.B., Andel, T., McDonald, T., Jacobs, M., Campbell, M. and Mayr, J., 2015. Compromising a medical mannequin. arXiv preprint arXiv:1509.00065.

### Tutor Feedback:

Hi Antonios and all,

Great post. I like the comment about mitigating DDoS attacks using a firewall. I think VPN and SSH can add a good protection to it. IPSec is a group of protocols that can allow an encrypted connection. What do you think?

Regards,

Nawaz