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Real-life example:Blaming the nurse

See the attached presentation to find the complete example.

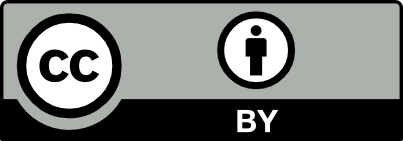
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## About this document

This document is a real-life example illustrating importance of the values of academic integrity in professional life. It was created as a part of *Toolkit for cross-sector cooperation in terms of academic integrity* within Erasmus+ project.

It is a ready-to-use case study accompanied with didactic notes and discussion questions and/or other tasks for the audience. Find more case studies in [ENAI database of educational materials](http://www.academicintegrity.eu/wp/all-materials/?key-words%5b%5d=real-life-example).

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# Real-life example: Blaming the nurse

# Basic information

* **Target audience**: Higher education students, any level, particularly useful for engineering and computing specialists, but also highly relevant to healthcare and medical students
* **Summary**: Based on a true story about medical professionals being blamed for deaths due to unresolved problems arising from faulty equipment
* **Objective**: To highlight how important it is to thoroughly test medical equipment and to keep an open mind when investigating life-threatening failures
* **Length**: allow 90-120 minutes

# Abstract

When things go wrong in a life-and-death situation it is natural to ask who is to blame. When technology is involved there can be a very complex web of responsibility that can be difficult to untangle. This case study is based on a true story about the death of a patient in hospital after the overdose of a drug administered using an infusion pump. Over ten times the intended dose of oxytocin was delivered to the patient: the infusion rate should have been set to 36 mL/hour but was set to 366 mL/hour. The nurse who set up the drip was suspended and then charged with manslaughter, but was dismissed after accepting the terms of a plea bargain. However, the story does not end there. Much later it was discovered that the equipment had a well-documented software / hardware key-bounce fault with the setting mechanism that had led to a Class 1 recall in the USA. Why was the equipment still in use when safer alternative pumps were available? Why was the fault in the pump not found during testing before manufacturing in the first place? How can we ensure this never happens again? These are questions for the workshop participants to investigate.

# Learning outcome/Message of the story

All professionals have responsibility and duty of care and are accountable for their mistakes

# Material

* PowerPoint presentation
* Instructor’s notes
* Briefing notes for each actor
* A copy of the full article from IT Now

# Teaching methods

* Workshop, role play, discussion

# Didactic/teachers notes

* This lesson could be conducted as a role-play, with different participants taking the part of different actors.
* The instructor should ask for volunteers before the session and brief the actors in advance about their roles
* Each actor would explain or defend their part in the situation (which led to the death of a patient and blame placed on the nurse)
* Roles could include hospital manager or procurement officer, chief nursing officer, the nurse administering the drug, technical support officer at the hospital, Health and safety officer, manufacturer / retailer of the equipment, designer of the equipment, computer programmer, software testing team, relative of the deceased patient
* The class members would be able to interrogate the actors before deciding on what course of action should have been followed and what should be done in future by all actors to avoid a repeat of this situation

# The story

There have been many occasions when nursing staff have been blamed and dismissed from their posts for making mistakes leading to death or serious injuries in their patients. Sometimes this is accidental, sometimes negligence, occasionally incompetence and very rarely it can be found to be deliberate.

This case study is based on a report written by Harold Thimbleby, published by BCS in their June 2018 edition of ITNow (Thimbleby 2018), describing several such incidents in hospitals that were later attributed to a well-documented fault in the equipment the nurses were using to administer drugs. The fault was eventually traced to fault with hardware and software causing uncontrolled key-bounces when setting the infusion rate of medication, which could result in an unnoticed extra digit being added to the dosage. However, before that point the lives and careers of several nursing staff had already been ruined by false accusations of incompetence or criminal negligence.

This is an entirely predictable and resolvable characteristic of equipment with mechanical or electronically controlled buttons. However in this case, although the fault was well-documented (through a Class 1 recall = recognised risk of death, and from the US medical equipment regulator to the manufacturer Cardinal Health), and alternative devices were available, similar faulty equipment continued to be used routinely in hospitals, with no warnings or training provided to ensure the staff were suitably warned.

In the case on which we are basing this workshop the pump infusing the drug oxytocin should have been set to 36 mL/hour but was set more than 10 times faster, at 366 mL/hour, due to a key bounce, and the patient died through an overdose. The nurse was charged with manslaughter, but settled through a plea bargain.

The questions to be raised by the case study are why did this situation arise and what should/could have been done to prevent it?

In addition to the issues identified above there are many ethical and practical dimensions to this case study, probably too many to be explored in a single session, for example:

* How to conduct an investigation when (medical) staff self-report an honest error – if the process is too draconian then people will be reluctant to self-report and problems will not get fixed or blame wrongly attributed
* Conflicts of interest in testing (medical) equipment if suspect equipment is sent back to the original manufacturer for testing – needs to be an independent testing process
* People in authority may trust quality marked tried and tested equipment more than they trust the word of professionally trained staff
* CE marking certifies equipment as conforming with health, safety and environmental protection standards of the European Economic Area, but it is the manufacturer’s responsibility to test and mark the equipment
* It is easy to blame the user when something goes wrong with any technologically advanced equipment

The article ends with the chilling statement: *“A clinician can only kill one person at a time, but a [computer] programmer can kill thousands”* (Thimbleby 2018: 53).

# References

FDA (N/D). Infusion Pumps: <https://www.fda.gov/medical-devices/general-hospital-devices-and-supplies/infusion-pumps> [accessed 23rd July 2019]

Thimbleby, H.W. (2018). *Inside medical software: When programming errors cost lives*, BCS ITNow June 2018 pp 50-53.

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Role play: Briefing notes for each of the actors, based on information in the ITNow article to be circulated in advance as well as a copy of the article, (permission has been granted to reproduce the full article by the BCS ITNow editor and the author). Up to 6 actors should be included, each allotted about 10 minutes for presenting and questions. The other participants should not be given a copy of the article in advance, but may take one with them to read after the session.

The instructor should give a brief overview of the situation and describe the process to be followed by the participants.

Each actor in turn should present an account of what happened from their own viewpoint.

The audience may ask each actor questions and then may ask further questions of anyone after all actors have spoken.

After each actor has presented their accounts and questions have been asked, the audience is asked to consider:

Did this person do anything wrong? If so what evidence do you have to confirm this? What could they have done differently to avoid risks to the health of patients? Did any other factors contribute to the situation.

The class members could be asked to make personal notes or to discuss in small groups.

After all actors have presented their accounts there should be a general discussion, in small groups then a plenary session, with each group presenting their point of view.

The culmination should be a “Lessons Learned” summary, either using the slide provided or based on the feedback from the participants.

**Briefing notes for each actor**

*Hospital manager / procurement officer / technical support*

The hospital management had no knowledge about knowledge of any fault in the equipment, but please be reassured that all such equipment is being taken out of service as soon as replacement equipment can be procured. Of course the hospital very much regrets this tragic incident and apologises to the family. We have done all we can to support the relatives of the deceased patient. The nurse responsible was suspended while the incident was being investigated before being charged with manslaughter. She accepted the terms of a plea-bargain and her dismissal, so the matter of her employment is now resolved.

*Hospital health and safety officer*

Patient safety is central to this hospital. We take very seriously any incidents of this type. Additional training has been given to all clinical staff to require then to take extra care when using these devices. They must double check that the dosage set is as intended and where possible get a colleague to check. In addition we asked the manufacturer of this equipment to check for any faults and this is when the documented fault was discovered. We are taking these pumps out of service as soon as we can provide replacements.

*The nurse who administered the drug*

My working life and my personal life have been ruined by this disaster. I put in the dosage of 36 ml/hour as required and did not notice an extra digit. I was the only nurse on duty that night and had 12 patients all needing urgent attention at the same time. I did not have time to do any extra checks; I trusted the kit we have been using for as long as I can remember. The information on the screen of the pump is not very clear, so even if I’d have checked it I might not have noticed the error. I was not told there was a possible fault in this equipment, but one of my colleagues said it happened to them. They did not report it because they thought they would be blamed. If I had known I would have taken extra care. I now know that am not directly responsible for the death of the patient, but I have been treated like a criminal throughout and have lost my job and my career. I very much sympathise with the family of the patient that died and hope that necessary steps are taken to prevent this from happening again.

*Manufacturer / retailer of the equipment*

This equipment had been in use at the hospital for the last 15 years, without incident as far as we are aware. We tested the pump used in this specific incident and did not find any problems with it. It was working as intended. The equipment was tested by us as required and was fully compliant with European Economic Area regulations (CE marking)

We are now aware that there have been incidents relating to similar pumps by reported and recalled by the FDA (U.S. Food & Drug Administration) since 2005.

<https://www.fda.gov/medical-devices/infusion-pumps/examples-reported-infusion-pump-problems>

As far as we are aware the design, implementation and testing of these pumps was rigorous and the pumps remain reliable most of the time. I believe it is the fault of the hospital for not providing adequate training for their staff on the use of the pumps.

*Designer, programmerand tester of the hardware and software*

As our job is to build safety-critical devices, the design, programming and testing of all the equipment is paramount to our work. The person who did the programming has now left the company. We have now enhanced our procedures for testing by adding more scenarios to the suite of tests we apply. We are including a specialist in user-interface design on our team. We plan to add warning alarms if the dosage appears to be high (but we need to understand what that means for different drugs).

*(optionally: relative of the deceased patient, for example)*

My husband was the patient who died as a result of this blunder by the hospital, nurse, manufacturer, computer programmer, etc, etc. I would like to get to the bottom of who was responsible to ensure that it never happens again to another family. This mistake has robbed us of a loving husband, brother, father and grandfather.