

Lecture Transcript

Module Name	Mental Health in the Community
Week 5	Implementation in Health Care
Topic	Introduction to Implementation Science (Part 1 of 3)

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Hello, Welcome to this introductory lecture on implementation science, which will be your opening lecture of this e-learning module on implementation science.

I am Nick Sevdalis, I'm a psychologist by training and I am a Professor of Implementation Science and Patient Safety at King's College. I hope that by the end of the lecture, you will have a good understanding of the need for a science of implementation phenomena, you will be able to define what the science is, and you will be able to articulate the main differences between clinical studies and implementation studies. I would also hope that you have an overview of the scope and the growth of the field of implementation science and you will start to become familiar with some of the key concepts that you will study in more depth and detail in subsequent lectures of the module.

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Please do note that this lecture contains a reflective question. The question will appear as an automatic pop-up on Slide 11.

This question is not marked and it does not count towards your overall grade for the module. It is simply intended as a point of reflection for you on the topics that we are discussing as part of this lecture.

Once you've written your short reflective question, press "Save", and at this point the lecture video will automatically resume.

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The example that we will use to make the case for the need for a science of implementation comes from the world of surgery. Here is a picture on this slide of an operating theatre in the United Kingdom, which I would say to you is representative of operating theatres in western healthcare systems. Sometimes these are called operating rooms, but essentially this is the same thing.

Indeed, this picture represents what tends to happen in surgical operations worldwide delivered by experienced teams of clinicians.

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The reason we're using a surgical example to introduce the science of implementation and the need for such a science is that surgery has rapidly become a public health issue in the recent past.

We're offering a very large number of surgical operations to an ever-expansive group of patients, and this group includes patients who are more elderly compared to those who were offered surgery in the past. This means that more people come into surgery with several co-morbidities, which are essentially conditions that patients have which may impact on their surgical outcomes.

These conditions include things like diabetes or high blood pressure. The more of these conditions one has, the higher the risk of their surgical outcome not being ideal or being worse than it could otherwise be. At the same time, we're aiming to offer the highest quality surgery that we can, which includes of course, offering surgery that's at the highest level of safety for the patients who undergo surgery.

Technology and high-quality training allow us to do that. However, we're very conscious that there is scope to improve both the safety and the quality of the surgical care that we currently offer.

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As part of the process and the impetus globally to achieve improvements in safety and quality of the surgical care that we offer, the World Health Organisation over 10 years ago now undertook an initiative to develop a checklist. This is the checklist that you have on the slide. This is called the WHO surgical safety checklist, and it was inspired by similar checklist used outside health care in other industries, for example, commercial aviation.

This is a simple intervention, which is the second main reason we're using it as an example to introduce the science of implementation. What you see on the slide is the entire intervention. It is not something complex, it is not something that needs to be delivered at different time points of care.

This checklist is to be delivered within an operating theatre or between the anaesthesia room and the operating theatre, for places that have such rooms like in the UK, at the time of a surgical operation.

It is split into three parts as you can see on the slide. On the left-hand side, you have the part that needs to be done just before the patient is put to sleep, usually by an anaesthetist and their assistants.

In the middle part of the checklist, you see what needs to be done, what needs to be checked while the patient is asleep on the operating table and before the procedure actually starts.

Finally, on the right-hand side of the checklist, you see the last set of checks which are meant to happen as the operation is finalised, the anaesthesia is being reversed, so the patient is about to be woken up and taken outside the operating theatre into a recovery room or a hospital ward.

So again, it is important to realise how simple this intervention is. It is typically printed on a piece of paper or printed in a large format, laminated and put on a wall so that people can read it off there, but it's nothing more than what you see on this slide.

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The checklist was developed as an initiative, as we said, of the WorldHealth Organisation. On this slide, you can see the programme which resulted in the development of this checklist, which was called Safe Surgery Saves Lives. This checklist, once it was developed, was submitted to a relatively simple evaluation.

Essentially, a large number of surgical patients across several countries in the world were compared before the use of the checklist and after the checklist had been introduced. So essentially, the study compared the surgical outcomes of these patients before the checklist was in use and after the checklist was introduced.

On this slide, you can see the paper in which the results of this study were published and that was back in 2009. You can read the paper for more details. And essentially what the slide is doing is to offer you a summary of the major findings that this really simple intervention achieved. In my opinion, these findings were truly spectacular.

The improvement that you saw in the clinical outcomes of these patients was pretty amazing, especially because it was driven by such a simple intervention. So the checklist managed to reduce major complication rates overall by approximately one-third, it reduced overall mortality, so deaths of these patients post-operatively by about half, and it also reduced the number of other clinical complications, like, for example, post-operative infection, which is infection observed after surgery is completed again by about a half.

So I would stress once again that these findings are truly spectacular and pretty amazing. No other intervention to my knowledge, pharmacological or any other type, has achieved such improvement in quality and safety of surgery over the last several decades. And remember, this was observed just due to the introduction of a simple piece of paper containing a small number of checks.

Slide 11

So here we have a reflective question, which I would like you to answer as I suggested in a previous slide. Why do you think this checklist was found to be so effective?

In trying to answer the question, you may want to go back and download the PDF document, either in the reference list that's on this slide or on KEATS, to take a closer look at the study and the actual checklist if the image on the slide is too small for you to read.

When the question appears, you type your answer and then you click "Save" to continue.

Slide 12

The simplicity of the WHO checklist and the effectiveness of it meant that several healthcare systems around the world were very keen to adopt it as soon as the data from the evaluation became available in 2009. So this meant making it part of the health care policy and developing guidelines or recommendations around the use of this checklist.

What you see on this slide is the example of the guideline that was produced as a result of that study in England. So a few weeks after the study was published, the WHO checklist that you saw on the previous slide was re-branded, as you can tell from this slide, to be used within the National Health Service in England. So you can see how it was redesigned, but essentially the content or the checks, in other words, were the same as in the original.

The idea was that this guideline will then be implemented across the country, so all the surgical centres would adopt the checklist. This would mean that every hospital in the country offering surgical services would use this checklist for these cases that they did and they would report within a year of introduction that they were doing so.

The risk managers of these services, of these organisations, would report to the National Patient Safety Agency, which was an NHS body at that time responsible for improving patient safety, that they're using the checklist and they're doing so consistently across all of their surgical operations. So essentially, what you have here is a very rapid, rather quick translation of research evidence into a national guideline and national policy.

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Following this initial evaluation, which was quite simple, better designed studies, which, of course, were more complex, followed to evaluate the impact of this checklist on patient outcomes. The only available randomised evaluation to date is the one that we summarise on this slide, which was published in 2015.

This study was done in Norway across a number of surgical specialities in a number of hospitals and essentially, it confirmed the overall positive effects of the checklist. The study did not replicate the effect on mortality reduction. In other words, the mortality was not impacted after the checklist was introduced. However, the study did show that there was a reduction in surgical complications overall after surgery and it also showed a reduction in the length of stay of the surgical patients after they have had surgery in the hospital which is quite important because it has health economic implications. It's much more expensive to stay in the hospital than to be discharged to go home.

This remains the largest randomised trial that we have to date on the surgical checklist, but of course, there's tonnes of other studies that have been published in the last decade or so that evaluate the use of this checklist and its outcomes, they're just not randomised evaluations. The data from all these studies seem to concur the original findings. In other words, the checklist is beneficial in all sorts of ways in improving patient outcomes and processes of care and also in improving team-working amongst surgical team members.

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So at this point, we have reached the end of the first part of this introductory lecture. There's two more parts to follow. In summary, we have looked at the use of surgical checklists as an example of how research evidence can be translated into clinical guidelines and national policies. And we have begun to think about implementation science as an approach that aims to take us from research findings into real-life settings and to try and accelerate research uptake into clinical services.

In the second part of the lecture, we will talk more about why such a science is necessary.

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