Process Innovation in a Hospital Setting

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I: Well, we've got with us Sarah and here we are at Torbay Hospital and Sarah has been working alongside many colleagues, doing innovation projects. Sarah, thank you very much for sparing some time with us. Could you tell us a little bit about what you did and why you did it?

S: I'm a foundation year 2 doctor at the moment and I'm just in **[0:00:21.4]** and anaesthetics, so the last year I did a job in acute medicine on EAU and also a job in intensive care. Both of my projects were focused around those themes of acute care and intensive care medicine. My first project was a safety project into management of anaphylaxis. This one arose from personal experience, actually. It was just a normal weekday, I was doing some paperwork down in A&E and I overheard on the tannoy an emergency call for a doctor to go to one of the EAU wards, because there was a problem with a patient. They didn't say what it was. So I went quickly, because I was just doing paperwork so I was available. When I arrived, there was a patient in full blown anaphylaxis, which the staff present had recognised.

I: This is a shock you get.

S: Yes, this is a severe, life-threatening allergic reaction to a substance. In this case we then identified it was to an antibiotic the patient was receiving. The nurses had acted quickly, recognised it was anaphylaxis and correctly put out a call for a doctor to come. But, when I arrived, the problem I immediately noticed was the nurses, so a senior nurse, a sister and also a staff nurse had correctly identified that adrenalin was the medicine we needed to use, but they'd incorrectly attached it to an intravenous cannula in the patient's arm and it was the wrong dose and the wrong type of adrenalin. It was adrenalin that should be used in cardiac arrest. So they hadn't realised it was the wrong type and they were about to give the medicine, so it was a near miss.

First of all, we stopped that, but, when it came to finding one we should be using, nobody had any idea where it was. Myself and the other nurse were going through the crash trolley but couldn't find the adrenalin pack. This, obviously, delayed the patient's treatment. One of the nurses ended up having to run two floors downstairs to get some of the medicine, so it wasn't ideal. Fortunately, the patient was alright in the end; we found the medicine, but it identified there was a lack of knowledge among doctors and nurses about management and where things were kept.

So we decided we wanted to do a big look into this, not just in the ward itself, into the whole hospital to see if this was a trust-wide problem, really. We thought the easiest way of identifying

this was to do a brief knowledge-based questionnaire across all members of staff who were relevant. So we looked at some national guidelines, which said that anybody allowed to give antibiotics and prescribe them should know how to give treatment for anaphylaxis, allergic reaction. So we found those guidelines and then we went around the whole hospital asking all doctors and all qualified nurses for the administration of these medicines, the questions on our questionnaire, which were safety questions.

Then we managed, overall, to get about 120 answers back, so quite a significant number across the hospital. We were really pleased with that. Then we brought our data together, but, also, on top of that, we wanted to branch out a bit, so we did an audit of notes as well to see whether we were documenting correctly. Again, we used NICE guidelines to see what we should be documenting. Also, a bit of a follow up that we should have been doing as well. Then, finally, we went around all the crash trolleys in the hospital just checking the kits actually were where they were meant to be, which was one of the initial questions.

Our results we found quite alarming. I think we were expecting them, but it just confirmed our worst fears. There was a lot of uncertainty amongst all levels of staff, from senior doctors, consultants down to junior doctors and then all levels of nursing staff. Everybody was, not blaming, but were saying that they'd expect a different member of staff to know what to do. So that was quite interesting. Obviously, we wanted to try and make an improvement quite quickly, because we felt this was quite a big safety issue.

I: Just a matter of life and death, by the sound of it.

S: Yes.

I: It's a huge issue, yes.

S: It wasn't something we wanted The Daily Mail to be printing, what we'd found.

I: But it's a classic example of how so many of these issues arise not out of anybody's malevolence, it's simply in the system and, what you've done is take a system view of where the problem is and, presumably then, generate some potential solutions.

S: So, what we've done is introduce more training for staff across all levels, but we also wanted to make a lasting change, because we're aware that, in the NHS, staff are constantly turning over; it's very dynamic. As soon as you change somebody, they might move onto a new system and need training again. So, the change we identified was the anaphylaxis packs themselves. We felt they were very small, white cardboard boxes that didn't really look like an emergency; they weren't very eye-catching. So we've just recently introduced a new box, which is larger and has just got 'anaphylaxis' written across the top and it's very, very clear. We felt it was a great improvement from the previous one. That's going to be used in all crash trolleys in hospital, but, also, I think out in the community as well.

I: Excellent.

S: So we're pleased with that.

I: It sounds like a really exciting project and one you've clearly got some strong personal commitment to.

S: Yes, definitely.

I: Can I ask you, looking back, having been an innovator, been part of that, what was it like? What was the experience like? What lessons did you learn?

S: Overall, we really enjoyed it; we found it very interesting and we were very motivated, because we felt it was such an important core emergency problem that we should know. We were very passionate about finding out what the situation was and improving it. But the problems we did have, there was a main problem with both aspects of our audit. So, with the questionnaires, it was very time-consuming and, for us to leave our work, we were popping out in our lunch breaks. Then we found that, often the times we were going to the wards, nurses themselves were too busy to answer questions, so, when we turned up, it wasn't the right time for them. Not only were they very, very busy, but, not so much among the doctors, but lots of nursing staff, there was a big feeling of fear from them that they would get into trouble for not knowing the answers. We're still finding that during our re-audit, which we're doing at the moment. They're saying, 'Not me, I don't know,' and they seem very worried that we're going to break confidentiality and get them found out and they'll get in trouble for not knowing.

So that's been our biggest struggle, I think, reassuring that this is just about improving the quality of training and helping them and improving the system. Then, with the note audit, the hard aspect with that was identifying case notes, finding all the cases of anaphylaxis, because the way we used was with the **[0:06:37.5]** codes, so when the patients have left the hospital, they all get assigned a code as to what problems happened while they were in. But we didn't pick up everybody, we don't think and we still couldn't think of a way to make sure that every case of anaphylaxis was documented in the same place and we could easily pull up a list of those individuals. So we're not sure we got every single case for the last two years.

I: But it sounds like it's been an interesting process for you as a doctor in terms of thinking about innovation as part of your day-to-day work.

S: Yes, it has been a **[0:07:09.7]**, in day-to-day things, if something frustrates me I think, 'Is there a way I could show this is a problem, implement a change and then make things **[0:07:18.3]** difference?'

I: Perhaps one last question, then – imagine you're now in a medical school and you're teaching an upcoming generation of doctors, any advice you might give them about innovation in their practice?

S: I think definitely get involved and, exactly as I was saying, if there is anything that frustrates you or you think is wrong with the system, think about how you can help to change it and don't

feel alone. There are lots of resources and enthusiastic people in place to help you do that, just having the motivation and getting involved.

I: Lovely. Sarah, thank you very much indeed for your time.