RCPCH and Kizmed podcast | Pill swallowing in children

Episode 2: Quality improvement and the meaning of life, with Dr Yincent Tse

Full transcript of podcast 2022

RCPCH: This podcast is brought to you by KidzMed, a programme set up at the Great North Children's Hospital in Newcastle. And by the Royal College of Paediatrics and Child Health.

Emma Lim: So, let me introduce myself. My name is Emma Lim and I'm a general paediatrician working at the Great North Children's Hospital. And today in our Pill Swallowing podcast, we are going to get down to the nitty gritty and the meaning of life. And we are going to be talking to Dr. Yincent Tse, who is one of my colleagues. Hi Yincent.

Yincent Tse: Hi, Emma. Thank you for inviting me.

EL: So polite. This is not like real life Yincent. Do you want to tell me a bit about yourself?

YT: Hello. I'm a children's kidney doctor and my other interest is in quality improvement. Quality improvement sounds quite boring, but really what it is, is about implementing something, but also measuring it so that you can convince others and yourself that it has worked or doesn't work. And also learning as you go along.

EL: Quality improvement and kidney disease. That's the kind of niche interest.

YT: Well, quality improvement is a bit like how we deal kidney disease. So, you've got someone with high creatinine, you intervene, and you don't just walk away and say, 'ah I've given them some steroids', you would actually measure your creatinine again. That's exactly what quality improvements. So, I think that's point why lots of mythologist go into doing quality improvement.

EL: Great. So, the obsessive compulsors amongst us love quality improvements, and anybody else who wants to grind their teeth.

YT: Absolutely. And we like numbers.

EL: Yeah. And I think that's one of the really important things. I think people, and we've said Yincent that you're a big QI fanboy, and I think people kind of get put off. They think it's really difficult. But actually, one of the things you mentioned that is. Data. Data is king. Data is important. Why?

YT: Yeah. So, if we use KidzMed as an example of how we got here. So, we may remember I Emma in the corridor said why don't we try this. So, we tried in a small group off our kidney team and we had a really fun day. Emma and Ailsa came, and we had a great hour, two hours teaching about how to swallow pills. And then we went out and tried to implement it. But what we did was that we started with one clinic and we said, 'okay, let's try and see what the next

child that comes into the door, whose on liquid and you know over five years old, can we convince them to start to swallow tablets?' And in one case, I think the first time, we managed to do two children, and actually both of them did it.
At first, all we measured was 'could we do it?' And then as we went along, we thought, oh, actually, we could get more data. What about how many medicines that they were on? What about the price of medicine? Because suddenly our pharmacists got very excited and thought how much does this cost?

EL: And I think that's really interesting that you counted some really basic things. So how many medicines each of the children you saw were on? So how many medicines were average renal patients taking per day?

YT: Yes. So, it ranges quite a lot. You know, some children its 5, some its 10 and, you know, parents were just coming to a clinic with a big box of clunky bottles. So, that was how we started. Just small. You can actually just do it on a back of an envelope, but make sure you don't lose those envelopes.

EL: Yeah, that is really interesting, because, first of all, you just counted the number of children. Then you counted the number of children and the number of medicines. And then you counted the number of children, the number of medicines and the actual cost. And when it got to the cost, that was the bit where everybody, even me, got really excited. So, tell me a little bit about the costs involved.

YT: Yes. So liquid medicines is incredibly expensive. And actually, there is a lot of hidden costs as well. So, if you look at the BNFC, it tells you the cost of a liquid medicine. But that's only for licensed products. For unlicensed products, you need to ask your pharmacist. And it's incredibly expensive. So, Lisinopril is a very cheap blood pressure medication. In tablet form, it costs like 10p each and in liquid form it's £1 per ml. So, if you on 5ml that is £5 each day. So that all adds up. So, in a month £150. In the year, I don't know my math is not very good, about £1400.

EL: And I think that we targeted renal because of the cost of Tacrolimus liquid is compared to Tacrolimus tablets, hadn't we?

YT: Yes. So, we quickly found out that all our medicines were really expensive in liquid forms. And so, we first started with the cost, but there were other things that we can measure as well. First of all, you start with yourself, your own clinic, and then you move on and you say, actually, I've got five colleagues can I convince them to do it. So, the next thing we measured was, we obviously had a chat within our team, we convinced them with my own data and then we went, 'okay, why don't you try it?' And the important thing is actually to involve the team, because it's not only the doctors, it's the nurses, the centuries. And once you've started and convinced people to do it, they actually help your project get along. So, the doctor forgets, the nurse will go, please, could you think about switching them to tablets? So, everyone helps each other.

EL: And actually, you know, I think it was harder getting colleagues to switch than actually getting the patients to switch. Because, first of all, you said that renal physicians are typically really obsessive compulsive and they hated not being able to give .25 of a ml. So, they really struggled with this idea that you couldn't chop the pills into tiny weeny bits.

YT: Yeah. So, part of the thing about quality improvement is that there's one tool called the PDSA, that is plan, do, study and act. And there, you know it sounds very clunky, but essentially what you do, what it means is that at the end of every clinic, you just had a look back and see what happened. So, you are right that it is really hard to convince your colleagues and we encounter some situations where people wanted, you know, your drug level to be exactly that. So, we had to sit down and go, okay, what happens if half a milligram isn't enough? And one milligram is too much for someone? So, we actually had a drop protocols and say, well, half a ml in the morning, one ml in the afternoon.

EL: That is a real. I can't believe that you couldn't agree. You had to draw up a protocol. Okay. Well, I mean, in a way, I'm laughing. But in a way, in Renal, you've been better than everybody because you've found the problem. You've dealt with the problem. And you've come up with a solution that's not just for one person, but it is for everybody. Because when somebody else comes to that problem, what comes between half a milligram and one milligram, you've got a protocol to follow. But there were other funny things that people found really hard. Do you remember really early on, we had loads of people who said, I don't know why you're teaching children to swallow pills. They're much more likely to go and take worse overdoses and swallow pills when they shouldn't swallow pills and swallow illegal pills and things like that. Do you remember?

YT: Yeah. I mean, people came up with all sorts. But one of the things is that learning, I mean, we all have to learn how to swallow tablets at some point, it's a skill for life. And I think you mentioned that you wouldn't send someone with an inhaler without actually teaching them how to use it. So, we are actually sending children home with tablets, expecting them to take it without checking that they know how to do it.

EL: Absolutely. And, you know, riding a bike is a skill for life. But because you ride a bike doesn't mean you're automatically going to be run over. You give people a skill and they learn what to do with it. So, we talked a bit how we started to implement it. And it was quite a success in the renal department. And then everybody got excited because we'd saved a bit of money. How did you convince management, that this was a good idea? How did you move this from a project in one department to a project over our trust and over our region?

YT: The project actually sold itself because it's better actually coming from ground up than from top down. I mean, at some point you need to involve management. So we went to convince other teams where they had the same issues because once children are on tablets, then I mean, we all know that in tertiary primary care that, I mean, I've got patients who live two hours from Newcastle of which I work and their GPs would prescribe regular medication, quanti medication, if it's on tablets. We actually went to visit some GPs and they showed us on a computer system that they can't prescribe liquid. They can't actually find it on the computer. You know, it just says 5mg or 10mg tablets. It didn't say liquid. So many of these GP computer systems isn't designed for liquid for children.
What's helpful is making it easy for people. So, if you switch people to tablets, it's easy for a GP, it's easy for a nurse and as important is that it's really easy for the parents.
You know, parents used to take lots of bottles, when they go to on a holiday. And now, you know, they've just got box of medicine. That's really helpful.

EL: So, it was really funny, I mean, we started this project, like you say, on the back of an envelope with some packets of sweets and lots of enthusiasm. And it wasn't till we proved with your data that we could save money that actually management started to get interested. So, what is it? What do you think turned them?

YT: So, like many of our listeners, paediatrics is probably quite a small part of the whole trust. And one of the things that we started doing was to show how much money we were saving. And that really opened doors for us. So, we were invited to a talk at different departmental meetings. And once you convince someone that, yes, this is, this could be potentially cost savings. It suddenly opens lots of doors. We found that in our hospital we had a transformation team. They heard about it and they thought 'fantastic, this is a nice, easy package.' And the transformation team was really helpful because one of the things we struggle with is actually with the small costs. You know our nurses were using their own money to buy the sweets because procurement is really hard in the NHS. How do you pay someone five pounds? There's no petty cash. So, we had to say by convincing our transformation team, they actually oiled all that force and made it easy.

EL: Yeah, that was actually really classic. So, because we have saved money, we were asked to do a big lecture to all the senior doctors and senior management. It was me and Elsa and we talked all about it. And then one of the CEO, the chief executives of our trust, came up, clapped Elsa on the back and said, 'That's a fantastic project. Where did you get all the sweets and all

the training things?' and she said, 'I bought them.' And he said, 'Did anybody pay you back?' She said 'no, because there's no procurement code for sweets.' And he said, 'over my dead body, you will be paid back'. But it took somebody really high up, for Elsa to get her 50 pounds back. And it was 50 pounds, every single time we ran something. So, these amounts of money added up. Apart from saving money, I think the other thing that happened is somebody put us in for an award and the trust always likes to look good. So, once we won an award, people were more interested.

YT: Yes. And actually, the award I was most proud of, was the eco award. So we won the NHS Sustainability Award because we worked out that not only were we saving costs, we were saving petrol money because a liquid, you know, the costs of transporting liquid all over the county was actually pretty high. We saved a lot of carbon.

EL: Yeah. We saved plastic. We save volume. Liquids are really bad because, you know what people do, people tip them down the sink, and they pollute all sort of other things. We are totally ecofriendly.

YT: One of the most, highest impact, ecological impact in health care is actually making medicine. So, making a tablet or something already costs and uses a lot of water, uses a lot of carbon, etc. just to get your drug intake to capsule. And then if you make that into a liquid, you're actually adding extra, you know, crushing up, etc. Yeah, that all adds to the ecological impact.

EL: So, I think one of the reasons that this project work was it was a great idea. It was simple. It involves sweets. Lots of people could do it. It's saved money and saved time. The patients liked it. There were even more sweets. And it was ecofriendly. So, once we'd roped in management, then they were prepared to back it and give us a little bit more money, but only a little bit more money. So, one of the next things we did was to sort out how everybody could have a kit and who would use the kits.

YT: Yes. So quality improvement is actually about making things easy for people. And this is one of the classic examples. So, it's very easy to not teach someone to swallow tablets because, you know, you have to find your capsules, get the kit out etc. But early on, one of our big wins was actually thought about making a kit that's available in all our wards and the transformation team actually helped us. So, there was one day where in the room you had three or four of our staff who went and actually just filled up these kits. And now in the hospital, there's a kit in every ward and every clinic.

EL: We had bottles with our logos on, plastic bottles and we had sweets; so you could just pick up one box with the sweets , a pop top bottle, with a sticker, with instructions about how to use it. So, it was all in one place. I still find that people don't know where they are though.

YT: No. So, this project doesn't stop here. You know, we have to keep going, keep breaking the barriers down.

EL: Tiring, constantly pushing. So, I think that's a really important point. Things never stop. They always continue. Dissemination is such an important part of this. Nobody ever would have known about Edison, if he'd invented the light bulb and kept it to himself. It was all about how you grow your good idea and spread your good idea.

YT: Yeah. So early on, it's really important to involve more and more people and actually to get them to own the, to be part of the team, and actually have a flat hierarchy. Touch your own the project. So, it wasn't just me who would say, okay, let's have a box. It could be anyone in a team who said, let's do this and to be empowered to do X or to do Y. So not having, you know, having lose control was really important.

EL: Yeah, that's funny you should say that because I think you and I are both a bit loose. I think it was really flat hierarchy in our team that anybody could say anything, and anybody's idea

would take off. So, it was really important having pharmacists, nurses and not that it came from consultants.

YT: Yeah. And I think it's very important that we shared any positive kudos that comes from it and actually for each of us to use our own strengths. So, for example, Nicola went to the national pharmacy conference and presented it. I went to medical conferences, Ailsa mentioned nursing commonsense and say, and as you own the project, we did it in our own way.

EL: Yeah, I think it is so true what you say about kudos. It was a great project. We all knew it was a great project. And once we told people about it, they did as well. And there were lots of funny things. You had one of your first most important publications in the, which journal was it?

YT: Archives.

EL: You want to quote these archives of childhood disease.

YT: Yes. 2020. Hopefully by now it'll be in print. Many people got their first from this project. So, Ailsa, Nicola, you know, they got their names in there in the paper. My medical student, who collected quite a lot of data, again got her first paper.

EL: There were loads of firsts for this project. You got first authorship of a paper. Nichola got a pharmacy prize, that was a first. I got a free bottle of fizz. That was the first. We got a first prize in the bright ideas for health awards and we got a sustainability award. So, there were quite a lot of firsts for all sorts of different people in different spheres.

YT: Yeah, we actually learnt a lot through this project. So, for example, you managed to get a guy to do the filming. To do the video, yeah, to teach people how to swallow tablets. Ah. Cartoon maker guy first. And that week I actually got the posters translated into 14 languages.

EL: One of the things that made this project so successful was that it drew in people from all sorts of diverse spheres. For example, Louis Francis was a student at the Newcastle University, Documentary Film School. And he made a film for us. It was brilliant. And you can find it on Yicent's website: Northern Paediatrics KidzMed. There was a great story we wanted to cartoon to show people how to swallow pills. And we went to South Tyneside University Graphic Arts. Yes, they have a degree in graphic and cartoon arts. One of their final year students, it was her first commission ever. And it was actually amazing. She was the first person in her entire family who'd ever been to university. And they were all a bit like, 'ooo, what are you going to do with that?' And she actually got a commission and got paid for her work. It was really big deal for her. She's brilliant. She's really talented.

YT: Yes. this idea wasn't new. Yes, it came from you came from someone else. But what I would like the audience to do is say, take it back to your unit, try it. You will learn a lot from the journey. Like we learnt a lot.

EL: Yeah, I think the things that you learn can be really unexpected. So, we'd started this project and we were actually approached by the research unit and they were running a new research study on Duchenne muscular dystrophy. And there aren't many treatments for this. There is one new treatment that's come out and to get onto the trial, you had to be able to swallow this in a tablet form. So, you weren't eligible for this new treatment, which was the only new treatment, unless you could swallow a pill. So, they came to us and asked for our help. And actually, we taught all the research nurses and they didn't have a single failure. There was no child who missed the opportunity to try and new treatment because they couldn't swallow pills. And for me, that was a really important kind of thing that I just wouldn't have thought about that.

YT: That's really amazing because for these children, this is their only hope to not end up in the wheelchair. You know if the medicine work. So, it is like five, six-year old. That's fantastic. And the other thing that the research department did for us is that they translated the posters into 14 different languages. And you would not imagine how quickly that people can do this. And that was very helpful because many of our patients, English isn't their first language.

EL: Yeah, that was great because it was an international trial. So, they actually paid for the translation costs of all of this. And that was incredible. And they went on and trained their research nurses across all the different sites. Yincent, when you started this project, I know that you wanted an award and you wanted to publish something. And after that, you were like, 'oh, Emma, I've had enough of this, you know, let me let me go now. Let's do something else.'

YT: Yeah. I think the problems sometimes with quality improvement, and we see it all the time, is that the early enthusiast's, early adopters, properly are the ones that get bored or something quite quickly. Having a team, having the, especially the nurses, pharmacists behind the project is very important. They keep the project going. They make it much more than your own little idea.

EL: Yeah, I think that's totally true. You are absolutely the example of incredibly enthusiastic, early adopter. And then you want to run off for another thing. But if you combine that with Elsa's persistence and Nicolas rigor, then that makes a really strong team that can help the project run for the full length. And we haven't finished yet have we?

YT: No. And it was you guys who started it many years ago. You know, teaching children with HIV how to swallow tablets, so, this is your project. Well, I always say it's standing on the shoulders of giants because I was trained in Saint Mary's Hospital in London by a fantastic children's HIV team who included people like Hermione Lyle, and nurses like Jamal Hamacchi, who actually trained me. So, you're right. It's about passing it forward.

YT: And it'll be fantastic if those who are listening to this podcast will just take this project forward. Try it. Convince your nurses, your pharmacist to do it. And hopefully you really have lots of fun along the journey.

EL: Yeah. Start small. Eat sweets. Give it a go.