Radiology reporting Quality – how can we measure it? Transcript

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s.l. = sounds like

Well, good afternoon everybody, and I'm going to start today's webinar. My name is Stephen Davies, and I'm a Consultant Radiologist. I work in Cwm Taf Health Board as a Consultant Radiologist, and I'm also a Medical Director at Medical Reporting. And I wonder if I could have my first slide up, please - thank you. So I can see that we've got 58 people online, and I'd really like to encourage you to use the chat box and to raise questions, I'm quite happy to be interrupted. I may deal with questions as they arise, or I may wait until the end of the presentation. So I have a declaration to make to start off with, I am a Medical Director of Medica Reporting, and I'm just moving onto the next slide - here we are - for which I receive remuneration. So as a part-time NHS role, I'm part-time Medical Director at Medica.

So I'd like to raise some questions with the audience to start off with, and we're going to have the first poll today. So, I'd like to know a little bit about the audience, and I'm sure you would as well, so I would be grateful if you would...yes, everyone seems to have got the idea pretty quickly there. If you could click on the one of the buttons, and it will give you an idea of the...so we're up to 64 attendees now, and about half the people have voted. Alright then, so I think you can see the results as well - we have got a good representation from radiologists and reporting radiographers, and a significant number of non-reporting radiographers as well, and a couple of radiology service managers keeping an eye on us - right.

So, what are we going to talk about today? I'd like to move on to the next slide. So, the question was really: why should we measure reporting quality? What are we trying to achieve? Is this just another task? Or is there something positive that we can achieve with this? We need to consider what we would measure, but I think the most important thing is: what are we trying to achieve? And I hope that by the end of this webinar, I've been able to answer that question for you. Right, and I can see on the chat line that people are keen for me to emphasise that we have trainees, hopeful trainees, and physicists attending as well, so truly a multi-disciplinary audience - that's wonderful!

So, my view of this is that we have already made framework for assuring quality in the radiology reporting, and I'm going to talk of my experiences based upon out-sourcing reporting and reporting in the radiology department. Because until fairly recent times that was my major role. And I think that the framework that we have is the ISAS framework, and before I discuss that anymore, what I would like to do is to ask the audience some more questions to see what level of uptake of ISAS we have. So I'd like you to click on the box, on the left-hand side. Very good - so we have seven radiology services, eight with ISAS accreditation. We've got nine working towards it, and 20 with no
immediate plans. So that's a not insignificant experience of ISAS, or working towards ISAS, and I think that it is an extremely helpful process to engage in. I think that it's divided into four domains, but if we just think of the overriding principle of ISAS, that is - patients have the reassurance that the imaging services central to their core pathway, are operating to a high quality standard - that's the fundamental really. And it doesn't matter whether it's in-sourcing or out-sourcing, it's the patient that's paramount, that's what we're aiming at. And we're aiming to produce a high quality radiology report for the patient that informs clinical management.

So you'll notice that there are four domains here, and I'm going to focus on the chemical domain - and I want to move on to the next slide. And in that clinical domain I want to look at the radiology reporting area there. But I would say to you that image quality and assessment of image quality goes very, very closely with radiology reporting. And I also think that we can measure reporting in terms of the service delivery, because that's the turnaround time for reports, our ability to deliver urgent reports effectively - that's all part of the service. But for today I want to concentrate on radiology reporting, and I'm going to ask the audience another question. Okay, so that's quite a high percentage of departments that are using teleradiology, that's of the order of 30% of departments. So you'll have experience through that of the sorts of quality reporting systems that exist in the independent sector - and I think that's a helpful background for this presentation. Now let's just move on.

In our domain, in our company we undertake routine audit, 10% of cross-sectional imaging, and 2% of plain film. So that means, as a radiologist, one in ten CT reports, or MRI reports would be audited, and 2% plain film. The question is: how might we actually measure this? What do we do when we audit a study? Is it a binary system? Is it 'that's right' or 'that's wrong'? Or is it a more complex issue? Sorry, just before I go ahead, I'd just like to ask the audience another question, if we could just pop up the next question, please. Does your department undertake regular reporting audit? So that's quite interesting, isn't it? Because we have quite a high percentage of departments undertaking regular reporting audit. And it would be quite helpful in the chat column if people could perhaps give a little flavour of the sort of audit that is being undertaken. So I've got one answer up already that says the radiographer reporting team regularly undertake audit, but the radiologists less routinely. Could we have a radiologist perhaps coming in and talking about what they do? Here we are: 10% audit of MRI - that's Adrian Thomas, so that's somewhere in south London I expect. Another 1% of all plain film images. 5% of plain film skeletal. Another reporting radiographer talking about the audit that they undertake. So there's quite a bit of variation, isn't there? And that feedback is helpful.

So when I came to Medica two and a half years ago, the system that we had was the so called GMC or independent sector scoring, grading. And I want you to just spend a moment looking at this. For the older members of the audience, this came out of Fast Track MRI 2004/2005 when an audit was set up to look at report quality, and this is derived from that initial study. It's got rather stuck in the independent sector, but let's just spend a few moments having a look at it. Grade one: discrepancy
unequivocal potential for serious morbidity or threat to life. That, I suppose, could be [unclear 10:25] haemorrhage or something like that. Grade two: moderate morbidity, but not treat to life - so quite a significant outcome error for the patient. Grade three: clinical significance of disagreement is debateable or likelihood of harm is low. And then disagreement over style and/or presentation and, finally, no disagreement. Now if you look at that list critically, I think the first thing that a radiologist would say is that that, to a large extent, doesn't actually reflect the radiological competencies of observation. First you have to see the abnormality - and that's a perceptual skill. Then you have to be able to interpret it, so you have to use your knowledge and experience to decide what you're looking at. And then having achieved all of that, you have to be able to communicate it effectively.

Now if we look at this gradient system, it doesn't really reflect that at all. So possibly grade four talks a little bit about style and presentation. But grades one, two and three are all about patient outcome. And I would argue that that's terribly important, but it isn't necessarily a measure of radiological competence. One thing that occurred to me when I was preparing this talk, and it's a thought I've had before, and that is this whole question of duty of candour. And before I enter into this discussion, because it is relevant to this grading system, I'm going to ask the audience another question. So: does your department have a policy or system for duty of candour? Well that's interesting isn't it? Because some departments, it's roughly a third have a system, a third don't, and another third haven't decided how to approach the situation. I think there's some difficulty with clinical radiology, because if you say every discrepancy merits a duty of candour of conversation, then there are going to be many, many conversations. And if you say that there are 45 million studies in England, and the discrepancy rate is 3%, [unclear 13:10] number of conversations that need to take place.

So, somewhere along the line we have to consider risk assessing this, and identify those reporting errors that merit that discussion. This is very much up for debate, and maybe somebody will put some comments on the chat line running parallel with this lecture. It could be argued that grade one and grade two outcome, could be a way of risk assessing the cases that require a duty of candour conversation. Because they are the cases with the serious outcome, the unequivocal potential for serious morbidity or threat to life, or those with moderate morbidity or threat to life, but not threat to life. And in that conversation the radiologist, or the reporting radiographer can explain to the family that, yes, there is an error, but they can explain the context of radiology practice. So, for example, a subtle fracture, or a subtle [unclear 14:22], I think it's important to make people aware that radiology, (a) isn't easy and, (b) isn't black and white. And in that controlled conversation it is possible to explain why the error was made. And I would suggest that, in the eyes of the patient, it is the outcome that is the most important thing. So I will leave that thought with you, and I suspect that that's very much open for discussion and debate, and perhaps move on. Because really what I've said with this is that, from the point of view of measuring reporting quality, these grades don't really address the issue of radiological competence, but there may be a side benefit of this in risk assessing duty of candour.
So let’s move on to the next slide, and I’m sorry it isn’t very informative but, what we have now is to enhance our audit system within Medica, and we score three further categories. We look in terms of the observation, and quite simplistically: is it a straightforward observation? Is it moderately difficult? Or is extremely difficult? Now those aren’t quite the words that we used, but the concept is there. In terms of the interpretation, again, a similar three level grading system: is it pretty easy? Is it something that you’d expect most radiologists to make? Or is it rather difficult? And again those aren’t the precise words that we would use, but the concept is there. And then finally we need to look at communication. And communication’s quite a difficult thing, because there are many facets. For example, we really need to look at the report itself, in terms of its structure, its grammatical construction. And when we’re talking structure, the RCR have quite clearly laid out some guidance, in terms of a useful format for report. And the most recent development for us is actually undertaking an in-house quality audit, simply looking at construction, grammatical construction, correctness, use of English, and scoring reports in that way, and developing quite interesting information from that.

So there is a variety of parameters that we use, but what are we going to use all this information for? Well, before I come on to that, I just want to talk about how in a large organisation we manage this data. So, in terms of audit, we have an internal audit process where radiologists will review cases, and then on a portal, a secure portal which is web based, they will record the findings, and if there’s a discrepancy record the details of that. And that comes into our clinical governance team, who will review it and then send it on to the radiologist, who is given a chance to review the case and pass comment. And a discrepancy is a difference in judgement, and that difference in judgement may be correct or it may be incorrect. And so there can be dialogue over whether or not there is a discrepancy, and that takes place on this electronic portal. And if there is disagreement, then an independent radiologist will look at it, an arbitrator, and they will form a view. And that view will generally be the final view, but not always, there can be further dialogue if necessary. But that is then on an open portal, well open from the point of view of information is shared with individuals on the Trust site, they’re named individuals who have secure login. And so there’s transparency in the sense that that dialogue is visible.

The sorts of responses we’re looking for from radiologists are reflective responses. And I’m beginning to move now into the benefit zone, if you like, with this whole report quality issue. Because the introduction and use of reflective practice is seen as a very important aspect of this, and concurs very much with the Royal College learning from discrepancies document. But let’s just continue a little bit longer in the teleradiology context. Once a discrepancy or an audit, either discrepancy from a Trust or an audit, internal audit discrepancy is identified, then that is posted through Insight, it’s available, there’s very rapid feedback. You know about your discrepancies as soon as they’re notified. But behind that then we keep a database and so we can monitor the discrepancy rate for individual organisations, we can monitor the discrepancy rate for individual radiologists, and we can look at the types of discrepancies and the gradings. And that provides us with a lot of information.
I'm just going to interrupt myself here, because an interesting question has come up from Elizabeth Jefferson. And the question is: does the quality audit or reports, i.e., of the grammar and use of English have any concerns about additional unnecessary text in a report? Such as excessive detail about exactly what images were looked at, or estimations of the dose to the patient from the investigation? Well, that's a pretty interesting point, and in a real lecture it would be quite interesting to have that discussion, and to see what the views of the audience are. So, to start off with I'll give a personal view, and maybe one or two of you'll come online and put through some comments. We want our reports to be an effective means of communication of clinical information, and it should be tailored really to the audience who are to receive it. So an orthopaedic surgeon, a general practitioner, and different sorts of clinicians. We are giving an opinion, a radiological opinion, and part of that opinion is to give advice, where it's appropriate, on the next steps. And it is just that, it is an opinion and we are giving advice - so the report really should be tailored. And I have to say that I'm not too sure that an orthopaedic surgeon is interested in whether it's a proton density of or a stir sequence, whether it was a prolonged TE, that sort of thing - I'm not sure they're interested in that. And people manage that in different way, sometimes people put that at the top end of a report, and so the clinician who's reading it can effectively just skip over that. And so it's there so that if another radiographer colleague looks at it and they want to know what sort of protocol was used in that study, I suppose the information is there for them.

Adrian Thomas has just made an important point here that, in nuclear medicine reporting, it's common to record the injected activity, and in other areas there are some statutory requirements, we do need to have that as part of the record. In some departments it's in the report, in other areas it's recorded separately. But if, for example, I'm injecting the shoulder, I'll record a dose of steroid that I've put in, I'll record the volume of local anaesthetic and the type, and I think that's very much there. Do we always record the volume of contrast administered? Where it gets recorded on the radiological request form in our department, in my NHS department, and that's scanned into the radiology information system, and it's part of the achieve - so somewhere it's being recorded. So that's quite a long way of dealing with Elizabeth's question by saying that - I think we will see variation, there is a need for some of this information to be recorded. But if we can record it in a way that the clinician can perhaps skip over it, and get to the meat of the report, then maybe that's a way of dealing with this issue. Davies Thomas, Thomas Davies has just made a comment: I record doses for cardiac CT, as often in young patients, we need to show referrers that it's low dose, etc. And so these are valid points, and part of the debate and discussion.

Dr Sukamar has made a really important point at the bottom here: I'm not sure if grammatical errors are important, but language is important, because it should convey the message without ambiguity. Well, I absolutely agree that lack of ambiguity is really, really important, and in a medical legal context, ambiguity can lead clinicians to the wrong conclusions, conclusions that the radiologist hasn't anticipated, and so removal of ambiguity and clarity is essential. I'm afraid I would take slight issue with the grammatical errors not being important, from my point of view, I'm sorry, but grammatical errors are really important, and I like to see excellent use of English - so I'm going to
disagree with you there - but thank you very much for your comment.

So, let’s go back to the presentation now, and I’m going to go back to the slide. In our organisation we generate a very large database of information, and I’ve suggested to you that we can use this information in a number of ways. And from my perspective, it’s all about assuring guiding learning - this is an extremely important concept for me. Before we discuss this slide, I’d like to ask the audience another question, and I’d like to ask for that to be put up on the screen now, please. Okay, so I think there’s pretty much consensus that there should be national standards for image quality. One of the really interesting things about this role with Medica, given that we’re connecting to more than 100 different sites, is the variation of image quality across the UK. And most of it reaches acceptable standards, but just occasionally we do see studies, examination types from sites that do fall below the current accepted standard of practice, and we see discrepancies flowing from that. And it works a little bit like this - a radiologist works in the NHS on a site, let’s think about CT head scanning, produces very high quality data sets that can be MPR’d, windowing very high resolution. 

The ability to determine acute stroke or similar diagnosis is very much easier than a data set, where you simply receive 23 soft [unclear 27:26]. And part of the responsibility I think we’ve got here in the teleradiology domain is to talk to sites, and we do talk to sites about this sort of situation, and we’ve seen terrific improvement across our referral base. But it has occurred to me that really we probably ought to have some national standards in the background, that say that actually the current accepted standard for the CT head, when looking for acute stroke, is...and set the standard. But bear in mind that we have got a terrific range of equipment and capability, and some of it’s getting a little bit long in the tooth. And Adrian Thomas has come in again to say that: one of the major emphasis of Kitty Clark, was in the standardisation of radiographic quality. I couldn’t agree more with that - first of all the accuracy of that, but also the importance of that. And I think we've all got a responsibility if we see radiographic quality that we need to include that, I think, in this whole issue of when we are auditing and auditing radiology reports, and auditing a radiology service, auditing radiographic quality is really important.

So let’s just think now about what we’re going to use this data for. Well, the first thing I think that we use this data for is not at an individual radiologist level. So we’ve got a pattern of discrepancies and let’s say that, for the sake of argument, we noticed that there was an increase in discrepancies in our [unclear 29:19] service. Well, that was true about 18 months ago, we noticed that there was a rising frequency, and radiologists who had had previously very, very low discrepancy rates were beginning to get discrepancies. And so we really had to consider whether there was a systemic issue here. Now, unless we’ve been able to aggregate the overall discrepancy rate, and have this data engine, we would probably have been a bit slower on the uptake to this. So we weren’t, and we conducted an investigation. Basically the result will come as no surprise to radiologists and radiographers - it was related to the interruption rate, it was related to broken concentration and,
therefore, failure to follow a normal search pattern and analysis of images during the normal reporting. And that’s almost every day in conventional radiology departments as well.

So we looked very critical at all the times that radiologists were interrupted and we found that the telephone was pretty much a key culprit. And we looked at the number of times that we can convert a telephone call in to an online chat message, a bit like the system we’ve got here, and use a portal. Did we actually need that message to go to the radiologist? If we did, was it an appropriate message? And we altered the administrative pathway for the process, and there was a corresponding reduction in the discrepancy rate. So that was very pleasing, because there had been a learning, we had identified a discrepancy rate that was across a group of radiologists who had high levels of competency, who had very low discrepancy rates, and there was clearly a systemic issue - we dealt with it. And there are other examples of the same. We have found through the discrepancy process that we were getting discrepancies of CT head scans, and when we looked into it, we found that there was an excess of discrepancies on sites that were sending us poor quality image data sets. So, again, it wasn’t all about the radiologists and their error, it was about the sort of data that was being sent to the radiologists, and that sparked off this whole image quality programme that we put in place.

Then I think there’s the group learning that takes place. And in conventional radiology departments we have discrepancy meetings, and we discuss discrepancies, we come to a consensus. We don’t necessarily score them, we come to a consensus. But the real strength of these meetings is the learning, the learning for everybody. And so, again, what we do in my NHS department, and what we do in Medica is we publish a monthly discrepancy briefing, and that goes down extremely well. The only weakness of it, on both counts, was that we weren’t attaching images to it. Now in the NHS that’s a bit tricky, because if you attach images, then people can track back and work out who the radiologist was, and the anonymity of the process begins to disappear, and that’s quite a difficult, sort of, discussion to have in a department. But in the independent sector, in our company, we can anonymise the images, and so we can share the images so they can’t be tracked back to the individual reporter, they can’t be tracked back to the hospital, and so we can share them.

Now there are lots of questions and answers, and I’m just going to scan down for a moment. Yes, so John Kitchen agreeing that it should be possible to develop universal and minimum standards for image quality. Richard Nunn coming up with what I think many of the radiologists will be keen to...’I get more interruptions from radiographers and sonographers’. Well is that a popularity rating? You must be the go to person - for 100 to 140 reports per working day. Nick [unclear 34:07] says having a conversation here, I think, online with Caroline Blair, and that’s quite interesting. So let’s just round off this point now with regard to QA data, assuring and guiding learning. I’ve talked about the organisation, I’ve talked about a group of radiologists, but there is the individual as well. And we’ve introduced reflective practice as part of the discrepancy process. So the first thing that we’d like to see when a radiologist responds to a discrepancy is a truly reflective answer.
I have to say, with fairness, reflection was a pretty new thing for the majority of radiologists in 2012 when revalidation started. You know, it takes a bit of time to get your head around it, get used to it, and so part of what we're doing is to help people to understand and develop reflective practice. Radiographers, I think, it's more embedded in their practice, and radiologists who have undertaken educational training, be that a certificate in education or trained the trainer, or taken part in foundation programme teaching, and radiology trainee teaching, will perhaps have a better idea of reflective practice. But I have to say that it's an enormously powerful method of learning, and we introduced it here in Medica and we had some great responses from radiologists. We had some very, very positive reflective responses, we could see an improvement in performance.

And I'm going to, on the next slide in a moment, share with you some of the comments that came back to us. But one thing I will point out to you is that there is a natural variation in individual human performance, and it's very easy when you see one or two discrepancies to start being a little bit critical, and that's absolutely what we must not be. We must take the discrepancies as learning points, but also take them in the context of that radiologists, their professional practice, and to just ask the question if there's a little run of discrepancies: is everything alright? Because there is absolutely no doubt from my experience of dealing with...well, we've got more than 180 radiologists in Medica, and I've been here now for two and half years. There is absolutely no doubt that we see variation in human performance, and external events, major life events do have an impact on performance - and so we have to understand that. And we have to be prepared to step in and support people and, in the real world, in a real department it's sometimes easier because you see people and you talk to them and you know them, but in a virtual world it's more difficult. So we're very sensitised to this and this, I think, is quite a positive benefit, if you like, of watching performance and discussing it. And certainly in our clinical governance committee we are very interested in the welfare and well-being, and we understand this issue of variation in human performance.

I'm going to move on. So, let's just think about the individual learning, and I'm going to ask for a question to be put up, please. So this is about reflective practice, and I'd like to ask you to indicate your experience of reflective practice. Now, we've currently got 75 people online, and we've got a third of the audience that's responded - so, votes are coming in. What's quite interesting is that the third option, I would say that if I'd asked that question three years ago, there would have been a fair number of people saying that it was a tick-box exercise to fulfil requirements for appraisal and revalidation. And I have noticed a very, very positive move towards the top box here, which is a positive view of reflective practice - it's helped me to learn and change my practice. And that's my experience of reflective practice. So in my NHS appraisal I collected all the discrepancies from the last year, reviewed them, wrote a reflective piece for each, and then wrote a summary reflective piece, and that was an extremely interesting process to go through. And I would suggest to you that, if you've never done it before, it's certainly well worth doing - so thank you for that poll.
So, from my point of view, radiology quality and looking at the report quality is about identification. There are a number of different discrepancies, but there are other facets to it which we've explored today. But on a single case basis, we should be undertaking reflective practice, and radiologists have done this, and these are some comments that have come back as part of the annual appraisal process we undertake. 'I realised that I have not looked at the bone windows in every case. I have learnt from these cases, and my search pattern for acute abdominal imaging will include...'. Probably include the adrenal glands, I should think. And looking at the omentum for omental deposits, you can probably each of you think of various things that you would be thinking of. 'I think I should take more time checking reports for typos'. Well, certainly voice recognition can be challenging and, you know, sometimes we see radiologists who may perhaps be working a little bit quickly, I don't know, or maybe not as skilled at proof reading as others, but typos do pop up in reports. 'This was a really useful exercise, and I will apply it to my NHS practice'. Great, fantastic!

So these are some of the comments that we received in the first six months of introduction of reflective practice as part of our independent sector annual appraisal. And we have have noticed certainly positive impact on discrepancy, or rather quality of reporting. And I noticed at the college meeting, for those of you who went to the Royal College meeting, there were a couple of sessions on errors, that one of the radiologists there was talking about CT, and I came away with two conclusions from that. Firstly we should be MPR'ing, and we should always look at each part of the body in three plains, and we should always press the bone window setting. We should always contemplate liver window setting and brain settings for pathology. And, you know, these are recurrent themes, and when you see those themes then coming out in the reflective comments, that's a very positive thing, and we can see that we've got positive learning, it's flowed from audit and discrepancy, audit of report quality.

Right, I'm just looking at some of the chat that's come up here. This is quite a lot about the duty radiologists and managing interruptions. It's very close to the heart of radiologists in their day to day practice. We all know that we've got incredibly complex work to interpret at times, but we want to be there to help clinicians, and it creates this dilemma really. And so certainly in my NHS practice, we've tried to protect the reporting radiologists by having what we call a duty radiologist, and someone else has called an advice radiologist, and we've recently reinforced this by having a second person as well. So that all the other radiologists can feel protected and concentrate on the work that they're doing. But every hospital will have slightly different circumstances and will find different solutions.

So just moving on now - I think we're coming pretty much towards the end of the formal part of the presentation - just trying to move the slide on. So, why should we measure reporting quality? Well, from my point of view, it's to identify learning opportunities - that would be my answer to the question - to identify learning opportunities. And those learning opportunities are for the individual, they're for the group of radiologists and they're for the organisation, or the department. And for me, that's what the report quality is about. The other issue is, if you work in the independent sector,
then we need to assure quality reporting, we need to assure ourselves those who are reporting for us meet the standard, and we know that the hospitals that take on our services will want assurance. And so we do have to have some sort of scoring system - when I say some sort of, you'll see that it's quite complex really, but we have a scoring system. But we must always be careful, always be careful to put those scoring systems into the context of radiological practice, and the skill mix for those radiologists.

So I think at that point I'm going to finish. I think we've had 45 minutes online. I'm just going to read the questions, and I think if there are any questions that people would like to raise, we could perhaps go into a short discussion section now. We've got 76 people online still, so that's an excellent number of people, and we've got a full screen. I wonder if we could go back to a part screen, because it's quite tricky to read on the full screen - it is actually easier strangely enough. So Andrew Hunt - here we are, 'the report is the end product. We should audit what influence it has on patient management'. Absolutely. I think that's a great audit, we want to be sure that our reports are influencing patient management in a positive direction. 'Should report auditing be a core standard for CQC'? Well certainly I think, again in the independent sector, we've had two unannounced CQC inspections, and that's quite an interesting process. They literally knock on the door, they arrive and they go through your whole service. The ability to demonstrate good quality clinical governance, and an audit process that has positive outcomes and encourages learning, goes down very well in the context of a CQC inspection. So, whether it should be a core standard, or whether it should be something that you develop, that you can have ready for discussion at a CQC visit, is perhaps a point of discussion.

'Is the scenario between radiologists and the independent sector more culpable to reporting radiographers - quality needs to be assured'. Well I would argue that it should really be across the board. That's probably going to spark a furious debate on this line, because we struggle to meet all the reporting that comes our way in the NHS, and to think that you're going to take time to audit reports, you know, it's going to take you away from the main task. But I really do believe in - I think you should step back and either double report, or ask a colleague to review some of your work, or maybe have a more formal system. But it's very, very interesting when somebody does audit your work, and does provide you with feedback, it does identify learning opportunities. But even more importantly, it really helps you, it really gives you confidence, because actually for a lot of the time we don't really know what people think of our reporting. And, you know, in a sense you're reporting a little bit in the blind. Okay, so if you don't get many discrepancies, that's fantastic. But, what do people really think of your reporting? Do they like your reports? Do they read well? Are they helpful? Do they advise on patient management? We don't really know. And so unless we build in some sort of audit process, we don't get that feedback.

I'm just picking up on this feedback on style from clinicians. When I did my last 360 degree appraisal, you know, the surveys get sent out to the clinicians, and the surveys included questions on what clinicians thought about my reports. You may say well: okay, you've probably very carefully
selected orthopaedic surgeons who you normally report for and, yes and no. I mean, the surveys went out to quite a wide range of clinicians really, to provide feedback. It's always helpful having that feedback, I must say. And, yes, you will get some feedback that makes you feel a bit uncomfortable, but it's helpful, it helps you to develop in a professional context. Alright, so we just have a few minutes left now, a little bit of chat carrying on. Well I'm going to pick up Davies Thomas' point there, 'how do we decide on which reports to audit'? We've got bespoke IT infrastructure - there are two ways of doing this, one is the fax system that automatically identifies 10% in a random fashion, and we programme that - 10% cross section, 2% plain film. But there's another way, which is to build an advanced workflow tool, and put that in a different point of the system for us, where we can actually vary the audit. So if we wanted to do a targeted audit, for example we find a radiologist who has had an excess of discrepancies in a particular area, and we want to deep dive into that, then we could commission a 40 case audit. Now currently that's a manual process, but we're building the capability to be able to write the rules for a whole variety of different types of audit.

For example, if a radiologist comes to the company, applies to start working with us, we'll do what we call an entry audit. And they will have 20 MR, 20 CT, 40 plain film audited, and we'll have a look at that - but that's all set up as part of a manual process at the moment. But I think the college is also making the point that they want the vendors to start building in the capability to identify cases for audit, and also identify opportunities for radiologists to feed back as part of their normal reporting process. And I think that's what we've got to do, we've got to find a variety of ways of building the capability so that we can review and reflect on our practice. Ferdie Cyriacus - I can't really comment on that, because I think that's quite a difficult thing...number of reports, [unclear 52:02]. That's the canned report really, and different departments across the country will have different types of work they seek a canned report for. We have one in the NHS that says: seen and assessed by clinicians - and all fracture patients go into it. But there'll be terrific variation around the UK.

Right, I'm going to say: thank you very much to everybody for joining in. This was a new experience for me, doing a webinar. It's quite interesting lecturing when you can't see the response audience - so I've no idea how many people fell asleep for example! I'm pretty sure that a significant number of you were eating your lunch - which is fine. And how many of you decided it was so dull, you were going to start chatting to other people. But, nevertheless, it's been a pleasure to deliver this webinar. I hope that you have enjoyed it, and you've got something from it. The intention was really not necessarily to give answers to all the questions, but to stimulate some debate, and I suspect that that is what has happened. So, thanks very much, and I'm gonna say - goodbye!