

# Committee for Health, Social Services and Public Safety

# OFFICIAL REPORT (Hansard)

Review of Waiting Times: Professor Charles Normand, Trinity College Dublin

22 January 2014

## NORTHERN IRELAND ASSEMBLY

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### Members present for all or part of the proceedings:

Ms Maeve McLaughlin (Chairperson)
Mr Jim Wells (Deputy Chairperson)
Mr Mickey Brady
Mrs Pam Cameron
Mr Gordon Dunne
Mr Samuel Gardiner
Mr Kieran McCarthy
Mr David McIlveen
Mr Fearghal McKinney

#### Witnesses:

Professor Charles Normand Trinity College Dublin

**The Chairperson:** You are very welcome, Professor Normand. The procedure is that we ask you to make a 10-minute presentation and then invite questions from Committee members. Members, Professor Normand is a professor of health policy and management at Trinity College Dublin.

**Professor Charles Normand (Trinity College Dublin):** Thanks for inviting me. It is nice to be back and nice not to be talking about death and dying, which seems to be what I have spoken to you about on previous occasions.

I am sorry if I divert slightly into some general principles as well as the experience in the Republic, but it is useful to understand some of the underlying problems as well as to look at the specific experience. As people will be aware, in the South, as is the case in most jurisdictions, there have been significant concerns over a very long period about long waiting times and long waiting lists, particularly for elective procedures. Around 50% of the population has private insurance that allows them, to some extent, to jump the queue and get ahead, but the other 50% that do not have it are seen to be particularly disadvantaged. The other complication is that the same doctors may well be doing public and private work, and there are some interesting problems with those incentives. Indeed, people can be paid or not paid depending on the nature of the patient, not on what they are doing or where they are doing it. The hospitals are paid mainly on the basis of block grants. They are given money for a year in a budget to run the hospital, and the service agreements that go with that are quite vague at the moment. Essentially, hospitals are told to be a hospital, not told to do particular things. There is a mixture of public, private and voluntary organisations in the system.

I am sorry about the top of the second page of my slides, but every time that I thought about what message I wanted to leave with you, I decided that it was the same message, so I repeated "It's complicated" a lot of times. People are constantly looking for the simple answer, and my main

message, if I have one, is do not, because it is a complicated problem with lots of parts, and if you think that you will solve it by finding the right answer, you will be disappointed. You will have to find lots of right answers and do things carefully. I was not sure whether it was different to say "It's not simple" instead of "It's complicated", but it is both of those things.

It is worth giving a bit of thought to what waiting lists are, because getting on to a waiting list and getting off it are the two things that happen, and you are left with those who got on it but did not get off. It is important to understand that, because people very often look at getting people off a waiting list without looking at how they get on to it. Indeed, I was on a waiting list once at that excellent hospital in Dundonald, and by the time that I had got to the top of the list, I could not remember which knee gave the problem. It was only around 23 months between being referred and getting the appointment, and I had lost the place. That is an interesting example of how a waiting list may not really be a waiting list, and it has to be thought about and understood quite carefully.

It is also important to understand about waiting to wait, because a lot of the waiting times that you see are the times after you have waited to wait. You have to be very clear about where we start the clock and where we stop it. There is also a difference between being told that you are on a waiting list and being told that you have an appointment but that it will not be for another six months or another nine months. People are much more resistant to the uncertainty that goes with being on a list. Moreover, there is a question of who owns the waiting list. Is it the people who are commissioning and paying for care, or is the people who are providing it? If you are a hospital and are told to provide 4,000 procedures, and you produce 4,000 procedures, in some sense, it is not your fault that you did not produce 4,500. If there were 500 people waiting on the list, that will be the difference. We need to be quite clear about who owns the problem. People often think about the hospital owning the problem, but the problem very often is also around the resources and the way in which people are given expectations.

The other thing to understand is that some people like waiting lists. We tend to forget that, but, if you are provider of care, nothing gives you a boost quite like knowing the resilience of people waiting to see you. I understand that. I hate it when I have such an easy diary that people can see me tomorrow or the day after. I want them to have to wait three weeks for a 20-minute slot. We have to understand that it is not always against people's interests for a waiting list to be there. It can be good.

That is a bit of background. We also have to understand with any of these initiatives that a lot of it is to do with the incentives and the consequences. Often we produce incentives that we never intend to, and the three initiatives that I will talk about are, in some ways, victims of the problem of people not understanding the incentives that they were creating. Waiting lists can also just be a way of rationing, as I described. In fact, my going to the Ulster Hospital when I did was a waste of time, because it was impossible for it to do anything useful. However, as I had waited for a year and a bit, I thought that I would find out what it was like, and sometimes a waiting list is used as a rationing device, albeit a bad rationing device, because it does not discriminate well. It is also a way of being dishonest, because you put someone on the waiting list knowing that there is no chance of the person getting to the top of it. It is just a way of getting rid of someone, like giving out a prescription. I am sure that you are all aware of that as a good way of finishing a consultation. A waiting list is a way of avoiding hard choices sometimes, because you can pass the problem on. As I said, it is a complex interaction between the referral process and the treatment process, and we tend to look only at the treatment end.

There were three initiatives in the Republic that were trying to do something about that: first, the waiting list initiative; secondly, the National Treatment Purchase Fund (NTPF); and, thirdly, the Special Delivery Unit (SDU). I will talk for a few minutes about each in turn. The waiting list initiative was a fund that was set up that paid hospitals that had long waiting times to allow them to do more treatment. It seemed, on the face of it, quite a logical thing to do. The monitoring, however, was relatively weak. It is hard to assess how much of an effect it had on reducing waiting times, but one of the things that was quite clear about it was that it produced very strong incentives to underperform, because, if you could make your waiting times longer, you got more money. One of the things that we have to recognise is that people who run healthcare organisations are not stupid. If you give them more money for doing something badly, some of them will do it badly. That is very much what we found in that case. Therefore, the waiting list initiative was later replaced — I will talk about that in a moment — because it was producing the wrong incentives. It rewarded those who underperformed and appeared to penalise those who did a good job. If you give extra money for the purpose of fixing a problem, you may well find that that is not in fact the way in which things work. Instead, you make the problem bigger in order that hospitals can fix it better.

The National Treatment Purchase Fund was a reaction to that. It was set up not to reward the bad performers but to give rights to patients. If patients had been waiting for more than nine months, or whatever the designated period was for some particular procedures, they were eligible to have almost immediate treatment under the NTPF. That would buy you a treatment, either initially in a public or private hospital or abroad. Latterly, it was made only in private hospitals or abroad, and that meant that, if you were a long waiter, you got immediate access to care.

The initial results were very similar to those of the waiting list initiative, but, once access to public hospitals on an accelerated basis was abolished, that problem seemed to go away. The real question that came out was about whether it was good value for money. It was effective at reducing waiting times, but at what cost? You can see in the report some estimates that came out of the Public Accounts Committee. I tried to find out what the spending was, but, of course, it was described as commercially confidential, and therefore I was not allowed to know. I reverse-engineered from the information that we had what the likely costs were. They varied from between being 20% to 30% higher than the cost of doing the treatment in the public system to being about double, so there was a big range. The thing that was quite clear was that it was much more expensive than the treatment would have been had it been done under the original normal public system.

The other criticism of the National Treatment Purchase Fund was that it made it permanently OK for the system to underperform, because, when it underperformed, you had a solution. Therefore, people did not complain, and there was no pressure on the public hospitals to do anything much about it, because a solution was offered that did not involve them any pain or discomfort.

The Special Delivery Unit was an idea that was to combine the NTPF with a fairly macho, aggressive approach to trying to improve the performance of the public hospitals at the same time. I am sure that you have heard people advocating traffic-light systems. When I see a traffic-light system, my heart sinks, because I know that it will be simple-minded monitoring that will tell you that you are green, but you can be green and not very good or green and very good. You can be amber and fairly good or amber and terrible. I have always thought that those things are kind of crude, but it brought in that kind of measurement to assess whether you were a good performer. At the other end, if there were people who waiting too long, they got swept into what was effectively the National Treatment Purchase Fund continued.

Furthermore, new rules were introduced so that the longest waiters were the people who got the first priority. If you were a short waiter, you would be kept waiting, however important your treatment was. If you were a long waiter, you got the treatment, however unimportant it was. The idea was that we would get rid of the very long waiters, but we managed to find that, at the end of that, the average waiting time went up, the maximum waiting time went down and the minimum waiting time went up. People turned out to be treated on the basis of when they joined the waiting list rather than on any basis of need. Although it solved the problem of the very long waiters, it created another problem of unreasonably long waits for people with very important needs that were not being met quickly. It was working on getting people off the waiting list, but it did nothing to stop people getting on the waiting list, and that was another problem.

I will try to get some overall learning from those experiences. First, in each case, the providers and the users of the service responded to the incentives that were there, both the intended and the unintended ones. The other thing that became clear was that there was a lot of gaming of the system. If you know that waiting lists are very long, people will be put on the list early so that, by the time that they really need the treatment, they will be ready for it. For example, if you have a cataract, and it is not yet ready for surgery but will be perhaps in two years' time, and the waiting list is two and a half years, the logical thing is to be referred on to the waiting list early. There is a lot of evidence that that was happening. People knew that there was a long wait, so they were anticipating that and working ahead.

Another problem is rather similar to one that I dealt with about 25 or 30 years ago, before some of you were born probably. I was working on a project at the Royal Victoria here in Belfast on trying to reduce the waiting time for knee surgery. We brought in people on Saturdays, and lots of extra work was done. It was a great scheme, but, after three months, the waiting list was longer. The explanation was very simple. Word got around GPs in Belfast that waiting times for knee surgery were going down, so there was a flood of new referrals. We looked at it, and there was a huge increase in the number of referrals. People had thought that it was not worth waiting two and a half years, but, if they had to wait only three months, that was good value. Therefore, you have to be very careful and look at what the effect of success is on the behaviour of people doing the referral, and we saw some evidence of that.

We have waiting lists for a number of reasons: the package is too big — that is to say that too many things are promised relative to the resources available; there is too little funding to cover what we are promising; the provision is inefficient; or the priorities for who gets the treatment are wrong. We have to understand that all those things are interacting in causing the problem.

What can we learn from the Irish experience? First, the initiatives were brought in without adequate understanding of what incentives they were going to produce, and they ended up producing some intended and some unintended incentives. It was not really understood why the waiting lists had got longer, and it was therefore not surprising that the effects were not always what had been hoped for.

The refusal to determine what the entitlements are, and the refusal to do explicit rationing, which is always an alternative to implicit rationing, meant that we had implicit rationing through the misuse of the waiting list system. The problems were both funding and provision, because, when there was inadequate funding to commission the amount of work that was needed, one of the effects was that the waiting lists got longer. However, the initiatives also failed to recognise that some people benefit from longer waiting lists. Indeed, if you are helped when you have a problem, you are encouraged to have a problem in order to be able to get the help.

Another thing that we learned, which may be a good lesson, given that the health system in Northern Ireland is relatively simple compared with that in the South, is that the more complicated the system, the more difficult it is to introduce incentives and initiatives that are likely to work. The reason for that is that they will have curious feedback loops that lead to the wrong thing happening. Where you have a large private system interacting with a large public system, you tend to get difficulties of the kind of the wrong incentives being generated. We learned very clearly that people respond to incentives. Never think that people are going to be sentimental just because they work in the health system. If you produce strong incentives, they will, to an extent, follow those incentives, and we saw clear evidence of that.

If I have a message, it is that this is very complicated. You will not solve the problems instantly. You have to look at how you get on the waiting list as well as how you get off it. You have to look at the efficiency and inefficiency, and you also have to look at the adequacy of the resources relative to what you are asking people to achieve. You have to be very clear that, if you generate incentives, people will follow them, even if, in principle, they are good people and are trying to do a good job. Nevertheless, if you reward inefficiency, you will get inefficiency, and if you reward perverse behaviour, you will get some perverse behaviour.

Thank you for your attention.

**The Chairperson:** Thank you, Professor. The Committee is taking a keen interest in the review of waiting times. It is interesting that your analysis tells us that there was no understanding of why lists were long in the first place. We are only in the middle of this process, but a message that we are getting concerns how the information is collated. There was a suggestion that we need to look at the total patient journey time. I do not know whether that has been a similar experience for you. Using the Assembly research structures, we have looked at what happens in other European countries. We have looked at Portugal, at different voucher systems and at patient and incentive systems, and we will take evidence on Scotland's experience. However, it also seems that enforcement is the key.

**Professor Normand:** I think that it is. Proper monitoring and proper evaluation of these things are important. Of course, one of the other lessons is that, to some extent, people did not want the initiatives to be evaluated too closely because that might show that they were not working as planned. Too much information can be difficult and embarrassing when you are trying to do this. The Special Delivery Unit was set up to be light on its feet, responsive and quick, but one of the things that went with that was the fact that there was no careful monitoring of what it did and what effect it had. That is a very important message. I think that people were hopeful that there was a quick and easy fix, as opposed to recognising that the fix involves probably seven or eight different things. A lot of it has to be bottom-up. There was a tendency to go in and say, "Here are some answers. Go and do it", rather than go in and say, "Here are some things that you have got to work on to improve".

The Chairperson: I am interested in one of your slides on the NTPF, which states:

"Initially treatment was in both public and private hospitals".

I suppose that that is one of the models that we are looking at, particularly among European models: incentives that are effectively private treatment. Your analysis is that, later, treatment mostly took place in private hospitals or abroad, which is more costly.

**Professor Normand:** It was definitely more costly. I never quite understood, because I did nine years of training as an economist and then found that the private system in the health system did not seem to work as it was meant to. It was out of line with me, rather than me being out of line with it. There are complicated reasons why private treatment tends to be more expensive. Some of it is simply down to the fact that the markets do not work very well in that area. Part of it, however, is because the scale tends to be quite small. For some of the treatments, a larger scale can be much more efficient.

Here, the National Treatment Purchase Fund people clearly did not drive hard bargains. They felt very weak in their negotiations with private providers, partly because they had announced the results before they had done the negotiation and, as such, ended up being weak negotiators. You should never underestimate the difficulty of public or quasi-public officials dealing with very well organised commercial organisations, because it is often an unfair contest. In this case, none of the private providers was shown to be cheaper. Overall, they were clearly significantly more expensive.

**Mr Dunne:** You are very welcome, Professor Normand. You have brought us an informative document that contains some very interesting facts.

Is there a tendency for health authorities to manage the waiting lists rather than manage the patients?

**Professor Normand:** I think that there can be. It goes back to what the Chair said about the importance of the whole journey. At the moment, the clock starts ticking only at certain points, and sometimes the journey can be very long before you get there. I have been doing a lot of work on epilepsy recently, and one of the things that we traced was the journey that got people to the specialist service in the first place. A lot of those people have intellectual disabilities, so navigating is difficult. If you are partially disabled, it is always going to more difficult. We found that the problems were three, four or five years earlier, before we even saw them, because they had missed the boat on so many occasions on the journey. Indeed, all the recording happened only after people had appeared in the system. What should have been looked at was where people had gone through the wrong referrals early on, then waited to get appropriate referrals and gone around the loop. It was almost a matter of luck if people ended up getting into the right place.

You are absolutely right: it is not easy to get at what the whole patient experience is, but that is ultimately what we are interested in, rather than the patient's experience from when the clock starts.

**Mr Dunne:** We know that there is a concentration on meeting targets, but how that is done is an issue of concern. Is the patient being put first, or does the patient come second in a lot of cases?

**Professor Normand:** For my sins, I was chairman of the Central Middlesex Hospital when I worked in London, and, every year, we had to hit our financial target exactly, which we did. Some years we had more money than we started with and others we had less money than we started with, but we always met our target, because we had a very good director of finance. If the targets are very explicit, people will find ways in which to meet them, whether or not they do the things that are desirable on the way to meeting them. Therefore, we have to be very careful, because, if you set the targets crudely, you will get crude behaviour to some extent, and you will not achieve what you are trying to achieve.

**Mr Dunne:** Let me turn to the issue of consultants and specialists working privately. Most of them are direct employees of the trusts. Is there a risk of a conflict of interest?

**Professor Normand:** Absolutely. I have worked in many countries. You see it grotesquely in places such as Bangladesh, but you see it just about as much in Birmingham because, essentially, people find themselves diverted into the private practice of the same individuals, where that is an incentive. There has been a lot of evidence of that. Not everyone does it, but some people will find a way that you reappear to their profit elsewhere if you have that conflict of interest potentially there. You have to be very careful. Public/private mix, through the same individuals or organisations, is typically associated with some people abusing the system to some extent.

Mr Dunne: So the risk is there.

Professor Normand: Yes.

Mr Dunne: Is there a possibility that those people will not work as efficiently?

**Professor Normand:** There is always that possibility, particularly if there is some reward for not doing

Mr Dunne: Have you seen evidence of it?

**Professor Normand:** There is some evidence. We saw it at an organisational level. Organisations that were rewarded under the waiting list initiative, for example, were found to perform worse in order to keep the waiting list money coming. There was clear evidence that they did not try so hard because there was an advantage in not being successful.

Mr Dunne: Was that during their direct employment?

**Professor Normand:** No, this was the organisation. We could not observe individual clinicians, but they are a part of that organisation. There was evidence that organisations that were rewarded for failing failed more. I do not think that we should be surprised. It was not that they were grotesquely worse, but they were a little bit worse when they were paid more for having failed in the last year, so they got more waiting list money in the next year.

**Mr Wells:** The lessons in the Irish Republic are very useful. I remember when you were here three years ago, giving us a fascinating insight into budgets. That was very welcome. The situation in the Republic is very different, in that you have a dual model. Everybody in Northern Ireland gets healthcare at the point of demand; there is no issue. If you want to have private treatment — which is a tiny proportion of the service here — you can join BUPA and go to the Ulster Independent Clinic. However, the vast majority of people do not.

Can you replicate the lessons learnt in the Republic, given the fact that, for half of those people, it is the private sector that is effectively paying for a reduction in waiting lists?

**Professor Normand:** I think that you can, to some extent. I agree entirely. What the Republic offers is some serious warnings about how not to do things with respect to organisation, because it produces so many perverse incentives. I would be the first to say that it is not a useful model to replicate but that it may be a useful model to learn from, because there are constant suggestions of moving towards more mixed public and private systems. The Republic is a good example of where that is shown not to be a very good idea.

The figure of 50% of the Republic's population not covered by private insurance has now risen to about 55%. They are very much equivalent to the population in Northern Ireland in that they get the public system or nothing. Some of the lessons are that introducing a private system will cause distortion. However, those initiatives were aimed at the experience of those who were in the public system all along, and the problems that arose were problems that, I think, will be generic.

**Mr Wells:** That is useful. As you know, the situation in the Republic, until 2008, was that the economy was booming, money was being thrown that their health service and everyone was enjoying a boom. Were your examples taken from the period before 2008, or during the recession, when there was a lot less money. A billion euro have been taken out of the health service in the Republic since the recession. Was it possible to continue the initiatives during that period?

Professor Normand: The initiatives continued; however, like everything else, the amounts of money involved got smaller. Indeed, some of the costs got smaller as well. For example, there were pay cuts and other things that made delivery cheaper. The treatment purchase fund was started during the boom years and ended four or five years into the recession. It covered that area. The special delivery unit came in as the new model pretty much in the middle of the recession. In the boom times, many of us felt that a huge opportunity was being wasted because, during that period, it would have been possible to increase the volume of care had they not simply thrown money at it but had gone for more money being associated with a requirement for clear improvement in performance. That was very weak. It comes back partly to the fact that monitoring and information systems have been very crude, and it has been difficult to enforce any improvement of that kind.

**Mr Wells:** Another thing that you said, which I found intriguing, was that it is a bit like motorway construction: if you build motorways, cars seem suddenly to appear from nowhere to fill the lanes. Equally, I have noticed with new schools in south Down that, if you build a brand new school, children just appear out of the bushes. It is extraordinary. You do a projection of the number of children who are available to go to a school and suddenly an extra 50 have appeared from somewhere because they are attracted by the wonderful new facility. Are you saying that there are GPs in the Republic who have patients who would benefit from those surgeries, but they are not actually being put on the list because the doctor does not perceive that there is any likelihood of the operation's taking place? Surely, to do that is almost negligent?

**Professor Normand:** Of course, these things are always fine distinctions in that one person's "not appropriate" is another's "should be done urgently". Realistically, people have often made the assessment that there is no likelihood that the person will be treated during the period in which they are likely to benefit. After all, in many cases, those treatments are for chronic conditions, typically in older people. The judgement would be made that, by the time the person gets the treatment, it will not be worth their while to have it.

Take the example of knee surgery in Belfast: because it was widely available, there was a sensitivity to its being something worth trying to treat rather than accepting that it is a chronic problem that people live with reasonably well and that we will not really bother with referral.

**Mr Wells:** The logic of what you are saying is that, no matter how well we manage waiting lists, all that we will do is prompt people to join those lists because there is an opportunity.

**Professor Normand:** The logic of what I am saying is that unless you are clear about what is covered and what is not covered in the health system's priorities, the margin will always be interpreted as GPs observe whether it is possible to get treatment or not. We have always been reluctant to be explicit about what is and is not included. There has been a general statement that anything that is useful or important, you should get. Countries that have universal insurance systems tend to have more explicit listings of what is and is not included. Although it is never a perfect system, it attempts to say that those whose treatments are less important are less likely to get them unless resources increase. Therefore, you can include more things in it.

If you look at protocols for when people get tests or not, you see that they can often reduce significantly the numbers of tests that people have, because as long as a test is free and freely available, people will be referred for it, even if, when you stop to think about it, you see that a test may bring little value to the individual concerned. We should never think that there is a simple dividing line between useful and not useful. That will depend a little on how easy it is to get access. My warning is that if you increase the number of people who get the treatment by 1,000, you will not reduce your waiting list by 1,000. You may reduce it by quite a lot or by almost nothing. As I said, in the knee case we actually increased the waiting list in the short run because suddenly people thought that they could get something done about their knees when previously they thought that they could not.

**Mr Brady:** Thank you for your presentation. You have answered one of my questions about the private and public sectors having the same clinicians. However, some of those clinicians use health service facilities and tie them up when doing their private work. I have come across examples of that in my constituency where, for a day, they were doing private work and seeing huge numbers of people for relatively short times. It was not taking the waiting list down, but, from a financial point of view, it was enhancing their budget.

Nobody disagrees that it is a very complicated issue. As with anything complicated, there has to be a will there to do it. It takes leadership. There is the example in the South of a Health Minister who did a lot less with a bigger budget than had been done previously with a much smaller budget. The incentive has to be there. If huge waiting lists become the accepted norm, that will simply continue.

**Professor Normand:** That is right. Considerable leadership is required throughout the system. The evidence suggests that, if you have someone running round with a big stick beating anyone who fails, you will be successful so long as that person runs around but unsuccessful as soon as they stop. We have to be wary of people who know that they can borrow your watch and then sell you the time. It is the management consultant problem generally. It all looks very good for a time and then it stops.

You have to be clear that you need to have monitoring and high-visibility management of the process. However, you also have to be supportive of the clinicians and managers at the individual facilities; you

have to work with GPs on what is referred and how it is referred; and you must have protocols for what referrals you accept. It is about going through the process bit by bit and understanding, at each stage, that you have to be supportive of the provision of sensible practice and appropriate pathways.

You have to play a long game. You must recognise that it will take two, three, four or five years to get significant progress. You have to accept that, sometimes, you will be working with people who are perhaps not the best people in that position but that throwing them out and bringing someone else in would push the whole thing back by two years because they will have to learn their way up and so on.

Many complicated judgements have to be made to make it work. The critical thing is accepting that you are managing a complex problem and trying to manage it as a complex problem rather than trying to eliminate the complexity and then finding that your simple solutions only produce more problems that are similar to the ones that you are trying to get rid of.

**Mr Brady:** You made the point about waiting 23 months for a procedure. By the time you arrived, it was almost too late. People may see a consultant who tells them that they need elective surgery, but, by the time they are put on a waiting list and wait, it is too late. There does not seem to be a prioritisation of particular problems. People can be seen and told that they need something done, but it is not done when it should be done.

**Professor Normand:** The big problem with prioritising is that you have to say no to some people, and you know how popular that is. We have to get a bit more grown-up. I am 62 — I know that I do not look it — and I have four or five things that could be treated. I choose not to have them treated, partly because I am scared and partly because it is just not worth it. One of my knees really gives me quite serious problems about one day a year. We have to get a little bit more grown-up about it.

It would be nice if we had unlimited resources, but we do not, so we have to start saying no sometimes. I do not mean by that that you refuse to treat important problems, but we need to be more sensitive to where some of the margins could lie, particularly around investigations. I am vice-chairman of St James's Hospital in Dublin, and we have the biggest laboratory service in the country. We do a huge number of pointless tests. We know that they are largely pointless, but we cannot stop them coming. We need people to be a bit more sensible.

**The Chairperson:** OK, thank you very much. That was very informative. You have left us with a number of messages about the process being complicated and the fact that you cannot simply throw resources or funding at one aspect of it. Thank you for your time today. We will certainly reflect on what you said.

Professor Normand: All I can say is "Good luck".

The Chairperson: We are good at the long game.

**Professor Normand:** It is the only one you can play.