HOUSE OF LORDS

Select Committee on Science and Technology

Corrected oral evidence: Ageing: science, technology and healthy living

Tuesday 11 February 2020

11.35 am

Watch the meeting

Members present: Lord Patel (The Chair); Lord Browne of Ladyton; Baroness Hilton of Eggardon; Lord Hollick; Lord Mair; Baroness Manningham-Buller; Baroness Penn; Viscount Ridley; Baroness Walmsley; Lord Winston; Baroness Young of Old Scone.

Evidence Session No. 14 Heard in Public Questions 124 - 130

Witnesses

Catherine McClen, Founder and CEO, BuddyHub; Sinead Mac Manus, Senior Programme Manager, Digital Health, Nesta; Simon Ommundsen, Head of User Experience, No Isolation; Dr Chris Blackmore, Lecturer in Mental Health, University of Sheffield.

USE OF THE TRANSCRIPT

Examination of witnesses

Catherine McClen, Sinead Mac Manus, Simon Ommundsen and Dr Chris Blackmore.

Q124 **The Chair:** Good morning, ladies and gentlemen. Thank you for coming to help us with this important session. We are live streaming on the internet. Before we start it would be helpful if you could introduce yourselves for the record. If you want to make any comments feel free to do so before we get to the questions.

Dr Chris Blackmore: I am from the Centre for Loneliness Studies at the University of Sheffield, with a special interest in mental health.

Simon Ommundsen: I am the head of user experience in a social entrepreneurship called No Isolation. We develop warm technology to reduce loneliness and social isolation. We have two products, AV1, a telepresence robot, and KOMP, which I will be talking about today.

Catherine McClen: I am the founder and CEO of BuddyHub. We are a technology-enabled connecting company that creates meaningful friendships for older people to empower them to age actively and well. We do that by matching them with three local volunteers in their community. We are creating new social circles that are intergenerational and mixed, reflecting our diverse community. We see loneliness and isolation in older people as a result of the loss of friends from their personal networks in later life. We offer a direct solution to this and we see technology as a great enabler to run the service. However, we combine it with a very human touch. We therefore see ourselves as a front-line organisation that supports the Government's aims in this area.

Sinead Mac Manus: I am one of the senior programme managers at Nesta. This is an innovation foundation and we have a financial endowment that we invest in social innovations. We find and support brave ideas that can help to change the world, and we have five strategic areas; health is one, and I lead on our digital health work.

Q125 **The Chair:** Thank you. May I start by asking you what do we know about the prevalence and patterns of mental health among ageing people? Does that vary in different populations and different ethnic or socioeconomic groups?

Dr Chris Blackmore: Probably the best data we have comes from the Adult Psychiatric Morbidity Survey, which takes place every seven years. This is a large dataset and the best in the world. It gives us a good cross-sectional view and we can pull some trends from that. The good news is that older people suffer much lower rates of mental disorder than their younger counterparts in their lifespan. You could say, therefore, that there is something protective about older adulthood, and we can perhaps go into the reasons for that.

There are some exceptions to this. For example, there is a spike around young adulthood for women when their mental health is significantly worse. For men, their mental health seems to be relatively the same until about

middle age and then it improves from that point. There are some gender differences.

On your point about ethnicity, there does not seem to be an effect for men across the population, but there does appear to be an effect for women. We know that common mental health problems are more common in black women. There are very strong links between mental illness and socioeconomic context, such as unemployment, low levels of income and finance. We may come on to this, but living alone is also a risk factor for mental health. That is clearly supported by the evidence.

Q126 **Baroness Walmsley:** What are the links between loneliness and social isolation and physical and mental health in older age, and is the health span affected by loneliness and social isolation over the lifespan? Also, are older people more or less likely to experience loneliness and social isolation than other age groups? Perhaps you could go into some of the reasons for that.

Catherine McClen: We are quite influenced by the work of cognitive scientists who tell us that friendship is the single most important factor influencing our health, well-being and happiness. In this country, over 1.6 million people, over 65, are chronically lonely. That means that they are suffering due to a lack of social contact, lack of support and lower resilience.

The research shows that being chronically lonely puts you at much greater risk of many physical and mental health conditions. For example, you are twice as likely to develop frailty or dementia. You are nearly three times as likely if you are chronically lonely to be physically inactive, which puts you at greater risk of developing other health conditions such as diabetes, heart disease and having a stroke, and you are more than three times more likely to suffer depression. Chris will have more detail on that.

Because of this, older people are much more likely to visit their GP and go to A&E, have emergency admissions into hospital and go into residential care. Prolonged loneliness causes stress in the body, which can cause inflammation, which is the pathway that can lead to many of the chronic conditions that I have listed.

On your next question about health span, because loneliness and isolation put you at greater risk of developing these various physical and mental health conditions, it is much more likely to affect your health span. As Chris was saying, if your mental health is affected you would expect that to have an effect on your health span earlier on.

Sinead Mac Manus: I completely echo what Catherine is saying. In our research at Nesta, we found that 9 million people in the UK were feeling lonely often or all the time. An interesting point in our research is that younger people are more likely to report high levels of loneliness. Older people would obviously be the second category after that.

One of the things we are interested in at Nesta is how we can have more intergenerational initiatives to bring these younger, lonely people together with older people. We have a number of programmes. One is called Accelerating Ideas, which is a £5 million fund over five years supported by the Big Lottery Fund that brings younger neighbours and older neighbours

together. The evidence is that this has been successful, with 76% of older neighbours feeling less isolated and 98% of young people feeling closer to their community. Initiatives like that really help.

The other thing to mention in relation to health span is that the social determinant of health is one of the biggest things that impacts your healthy life expectancy. Over the last 20 years, we have seen our life expectancy growing, but the gaps between healthy life expectancy among the most well-off and the less well-off has expanded in some areas to 19 years, which is quite shocking for a developed nation like the UK.

We have put a lot of research into a new initiative called the Nightingale, named after Florence Nightingale, whose anniversary is this May. We know a lot about what causes bad health, but we are not sure about the evidence base to make this better. I will be doing a lot of work on what to do about the social determinants of health, because that links to loneliness and isolation and is a compounding factor.

Baroness Walmsley: What matters more, the number of contacts or the depth of engagement? Some people can feel very lonely even though they have a lot of contacts on a superficial level. What do you think about the balance between those two? Which is more important?

Simon Ommundsen: It is important to stress the difference between social isolation and loneliness. While social isolation is often an objective term that considers the number of contacts, loneliness is something that you feel. You can have a lot of people around you but still feel lonely. We see that many in the user group in particular do not necessarily want a lot of new friends and to expand the circle of contacts, but do they want more quality contact with friends and family members, including the younger members of the family. Creating technologies that enable them to keep this contact going on a daily basis increases the quality of the contact. They have more to talk about, they feel more included, and it generally increases well-being quite drastically.

Catherine McClen: I agree that, ultimately, quality would be what we would prefer, but quantity is also important. As people get to later life, they face many transitions that tend to reduce the number of connections that they have. We all need a personal network of perhaps 10 to 15 people, and maybe within that your question speaks to the idea that we need an inner circle of people who are really there when life gets tough in order to support us. That is when the quality really counts, but having a broad bigger network can be important as well.

Baroness Penn: I have a question about the definition of younger people and older people when you are talking about who is most affected by loneliness. To understand what age cohort you are fitting people into would inform what we think about.

Sinead Mac Manus: From our perspective, we see young people as under 25. Technically, the definition of an older person is over 65, but a lot of the research we are seeing at Nesta shows that loneliness is starting to hit people from 50 upwards. We would not consider that to be the age of an older person, but loneliness can start to affect people a lot earlier in their lives as well. We have a fund called the Second Half Fund, which aims to help

to tackle loneliness and social isolation in people over 50 by tapping into their time, talents and purpose, giving them a purpose and connecting them with volunteering and things that are going on in their communities. We are seeing in our research that loneliness is starting a lot earlier than in people considered traditionally to be older.

Baroness Penn: Do you disaggregate the over-50s into different age groups at that point, or do you view it as something that starts potentially as early as that and then progresses?

Sinead Mac Manus: Yes, continuing on in different demographic groups, as Chris was saying.

Catherine McClen: The data a few years ago may have pointed towards older people suffering more. Interestingly, recent trends and surveys are showing a different picture, and this is something we need to think about. I have seen surveys that show that Millennials—roughly 24 to 39 today—have the highest rate of loneliness. We have to think about the internet generation, who have grown up with the internet, and what impact that may have had on social skills and how people interact. The future of loneliness may be quite different because of that.

Baroness Penn: Forgive me. We are now hearing that the under-24s, the 24s to 39s and the over-50s are most at risk. Are you therefore only not at risk if you are 40 to 50?

Catherine McClen: We are all at risk. It is the way we live now. Different surveys may highlight different groups. That may be one of the challenges with the data, that it may be hard to measure, although we are probably getting better at it, but surveys will differ quite a bit. We're seeing higher levels of Millennial loneliness coming up lately, but the next survey may show something different. In later life, because of the many transitions, you are at higher risk.

Chris mentioned living alone, and we have a lot of people living alone. That single-person-household factor is key in this. In the last 20 years, we have had a rise of roughly 20% in the number of single-person households, and among people over 65 there are 4 million. It is a big number, and it is very much a risk.

We are seeing the rise of single-person households mainly being driven by men between 45 to 64 years old. People not getting married or increased divorce rates are big trends in our society, and all these trends are playing in. I understand why you are confused, because there is a lot feeding into this, and the data gives different messages depending on the survey.

Dr Chris Blackmore: It is often described as a shallow U-curve. As has been stated, young adulthood, and towards the end of the lifespan, is a time when people are particularly prone to loneliness. Living alone seems to double your chance of experiencing a common mental health issue, and that is true for both genders. We do know quite a bit about this.

Q127 **Viscount Ridley:** I want to ask you about technologies and how they can be used to reduce loneliness and social isolation. On the one hand I am sure we will hear some good examples of how this can help, but surely there is also a

concern that if we rely on technology too much we might increase social isolation and loneliness. Some of the things we have heard, such as how you can check on somebody without having to go and visit them, might mean that they are seeing people less. If you look back to 20 years ago and what people were saying about the impact of the internet, you can see that they did not see social media coming. We do not often know how these technologies are going to affect people. First, how will they affect people and, secondly, how can they be used to help people? I am probably looking at Mr Ommundsen first.

Simon Ommundsen: That is definitely a concern. We have not seen that currently from our users and the research that has been done. On the contrary, we have seen contact increase drastically and given more meaning, because previously a lot of these seniors were not able to use what we call generic technologies. These are what you all have in front of you—tablets, smartphones, and those kinds of products. They are not specifically designed for that age group due to limiting conditions, which could be anything from vision to difficulties with touch screens, and the mental models are challenging.

We have seen that when we get this technology to work, people are able to receive content, messages and video calls, which have been a huge change and revelation for a lot of our user groups. More than 70% of seniors aged 80 plus have never used video calls, so they have never been able to talk to grandchildren who may be studying abroad, they have not seen the new office or the new cabin redecorations. It gives a lot more meaning, bridges the gap and makes it easier particularly for the younger generation to get in touch, because they have more to talk about. We have not seen a decline in visits, but it is a concern and it would be interesting to follow that up.

Viscount Ridley: Are you saying that you can use video calls to substitute for personal contact and in many cases improve on it? Is your technology designed specifically to be easier to use for older people?

Simon Ommundsen: Yes. That was one of the first things that we noticed. There are so many technical barriers, everything from passwords to PIN codes and software updates that change everything. We have removed all that so that it is just on and off and then everything goes automatically from there from the family's side. We see this as filling in between visits. If you live in a different city you will probably not fail to go because you have had a video call; you will probably still go for the same visit, but you will be able to check in maybe weekly because you are able to connect to your grandmother or grandfather much more often than you would before.

Viscount Ridley: Are you specifically saying that video is the big thing that has made the difference compared with, say, messaging?

Simon Ommundsen: Not necessarily. A lot of the users report that when they have received a photo of their grandchildren, they can follow the progression if someone has had a baby, or they can see when it starts to play, they feel included in the family. We get a lot of positive feedback on that, too. It is obviously a lot easier for the family in hectic everyday life to send a picture as you would to your other friends, and it can be as meaningful.

Sinead Mac Manus: May I make a few general comments? It is a really interesting question. At Nesta, we would never advocate tech replacing people and human contact. We see tech as an enabler in two ways. We can use technology to foster relationships and to keep connections going. That is very much what Simon is saying on KOMP, which was one of our Smart Ageing prize winners for one of our previous grant funds.

We also have a current challenge prize called Tech to Connect which is to see how tech can enable people to reduce isolation through fostering better connections. One of the prize winners is called Two Generations, which allows older people with spare rooms in their house to connect with younger people who may need somewhere to live, fostering that intergenerational connection.

The second thing that technology as an enabler can do is to encourage purpose and activity. This can help loneliness and social isolation. BuddyHub is part of our Second Half Fund, as I mentioned, and at the moment some of our Tech to Connect grantees are also using quite simple technology. One is called PlaceCal, which gives older people nudges about what is going on in their local area and may help them to get out of the house and get involved. In Scotland, we have a fund called the Healthy Lives Data Fund, and one of our grantees is called Cognicare. They are helping carers of people with dementia—this is usually quite a lonely and isolated group, because they are going through a lot of stuff at home—to connect to things that are going on in their local area.

The key thing for us is that tech is an enabler and can involve you in place-based and neighbourhood activities. There is also the idea that we can do an awful lot more with technology to provide intergenerational support and peer support. Catherine can probably come in here with regard to BuddyHub, because you guys are a great example of this.

Catherine McClen: There are a couple of things that I would add to that. The most meaningful connection will always be face to face in a room, as we are today. That is how humans interacted way before technology arrived, and it is the best thing. However, technology can support. With video calling, for example, you get a sense of co-presence. A lot of communication is very visual, picking up cues that can only be there visually. We lose a lot of communication when we do not see each other. That is very important, although that is not to say that other forms of communication cannot play a role.

In particular, coming back to the question about quality and quantity, and having friendships and relationships, we urbanised in this country a long time ago. Families and friends have separated, so technology has been a great answer. First, there was the telephone. We wrote letters and telephoned, and now we have a whole array of new tools to help us. Technology can help to nourish these friendships and relationships when we cannot practically be together.

We can probably all think of friends from earlier in our lives who we have lost contact with. If you do not nourish relationships and friendships, that is what happens; you go from an inner circle of close friends to them drifting away, and we all regret that we no longer see people. Let us all remember not to

overplay the hand of technology in this respect, but it can do some useful things. No Isolation, for example, is enabling children to feel that co-presence in the classroom if they cannot get to school. That is a wonderful thing; otherwise, that child would be much more isolated. Technology can play a great role.

Baroness Walmsley: I want to probe a little the attitude of different generations to this kind of technological connection. The older generation can see what is in it for them and, as long as they can manage it technologically they are keen to do it.

How keen are the younger generation to engage with making deeper relationships with older people, especially if they are not related to them in any way? I remember when I was at school having to visit an old lady. I was a little reluctant to do it, but I enjoyed it very much. My old lady lived near Aintree racecourse and wanted to give me tips on the horses. I got a lot out of it, but I wonder if the younger generation of today are quite as keen to make that engagement.

Sinead Mac Manus: That is a really great question. We have found that, especially through the Accelerating Ideas Fund, a fund to scale eight promising ageing innovations. Two particular examples spring to mind. One is called the Cares Family, which started in London as North London Cares and South London Cares but has expanded to across the UK. They connect younger neighbours to older neighbours. What they have found by working with young people is that a lot of young people are moving around the country or moving around different places in London away from their families and grandparents. They want to have a deep sense of connection to their local area, to find out more about the history of the area, and they adore hanging out with the older people because they have so much wisdom and know so much about the area, which they find fascinating. That is one motivation.

There is another motivation. We are also funding an organisation called the Good Gym, which you may have heard of, which is also scaling super-fast around the UK. This is tapping into the motivation of young people in a different way. It enables a younger person—they need to be young—to meet an older person in the home, maybe bringing some shopping or a newspaper, so they are getting fit as well as giving something back. It has tapped into something special, because both parties are getting something out of it, and it has been really successful.

Through our work we are finding young people are genuinely wanting to connect with the older generation. I remember it was one of the things that I wanted to do, because my grandparents are both dead, and getting that sense of the older generation is really beneficial to young people.

Catherine McClen: Fourty per cent of our Buddy volunteers at BuddyHub are under 30. Careful matching is important to bring people together around interests. Then, the generational difference does not matter and people love the friendships. Intergenerational mixing was what happened in the village, and I think there is a sense of something missing when grandparents are not present or are no longer alive. There is a craving for reaching out across the generations. People find the most amazing connections. The example you

gave resonates with me. People are having a lovely time and there is something very natural about different generations mingling. Particularly with urban living, we tend to hang out with our generational peers now, which was not what we used to do.

Lord Hollick: Mr Ommundsen, you have a proprietary box, as far as I can see. Does that sit in front of a computer or a tablet?

Simon Ommundsen: No, it is a computer in itself.

Lord Hollick: Tablets and smartphones are now ubiquitous. Are you planning to develop an app which gives the same functionality to what is a ubiquitous tool as you get through KOMP? I am thinking particularly of how fingerprint recognition, facial recognition and voice addressability are making the use of smartphones and tablets far easier for people who might struggle a little with remembering passwords. I am one of them. Is your business going to migrate into a rich app that can sit on all these platforms?

Simon Ommundsen: It could be. There are no specific plans to do that at the moment, but we definitely see that. We have targeted 80-plus, who in five years or 20 years are not going to be what they are now, so we will have to adapt the product accordingly. There are a lot of physical issues—for instance, you may have issues with your hand or visual impairments.

There are other issues related to using iPads and tablets that go beyond just age or motivation. We think there will be a need for some sort of box, as the KOMP is right now, but we also want to include other services with the product. We have been in discussion with the Red Cross, which provides visitor services that could be very useful in remote areas. There are many exciting things to do when you have a computer that it is possible to use.

Sinead Mac Manus: To build on what Simon says, there is definitely a place for a technology like KOMP, which is for a certain market and is extremely easy to use. I met a group of prostate cancer patients yesterday, all older men, and they all had a smartphone. They did not have a lot on the smartphone but they could still use the technology, which is becoming easier and easier.

The more we try to encourage companies to codesign their user experience with older people, the easier these technologies will be to use. As you say, things like facial recognition are becoming easier to use on smartphones and so on. Voice technology such as Alexa also has huge potential for older people's use. There will always be a market for a certain kind of more assisted technology.

Q128 **Lord Mair:** Following on that point, what do you think will be the big game changer in the next five or 10 years? Is it more about getting the technologies that you have been describing adopted at scale, or will there be other new things that are being thought about that are not yet available?

Sinead Mac Manus: That is a very interesting question. Two areas where technology will help older people—not necessarily with social isolation, which I will come back to in a minute—are the medical space and the care space. We are seeing a lot of interventions in the home using things like sensors, and the internet of things, smartphone technology and wearables are only

starting to have a benefit in the medical space. How do you prevent someone having a fall or a UTI and going into hospital, which are all very common things? The technologies I mentioned are becoming more common, and over the next 10 years we will see them becoming more ubiquitous in the home.

Also, in the care space, we are seeing a huge number of companies using apps to find the right carer for the person or to send the carer at the right time, and using things like sensors to look after people better. Although all these things are very good, and better health and better independent living should mean less isolation, I do not think that these technologies will reduce social isolation. They have huge potential in the medical space and the care space, but not with regard to social isolation. Social isolation is such a systemic problem that we need to look at it much more widely and think about how we are going to address some of the socioeconomic factors of older people, who are in isolation for many reasons and not just because of their age.

Dr Chris Blackmore: From our perspective, it seems that a lot of technology allows for reduced human contact, and arguably reduced quality of human contact. From the telephone onwards, lots of things have allowed us to live further apart and have less contact with each other. If there was a game changer, therefore, it would be something that could magically reverse that trend and bring us closer together in an authentic way. That really would change things, but I do not know what that would look like.

Lord Mair: What should the Government do to improve this situation? Should they be supporting more of this sort of thinking and these sorts of technologies? What is your view?

Catherine McClen: Technology as a rule is not the answer. It has been stressed here that it has an enabling role rather than being an answer in itself. We already have the technologies for video; we have talked about the importance of video, and it is already here. If video is on a smartphone or a computer and certain older people are not digitally literate or cannot use that, there are adaptations such as video conversation through a TV—a familiar piece of technology that is in almost every home—or a box sitting on top of a TV. There are moves to improve technology to allow more access to video, and usually they come down in price so they may be more available.

Voice assistance, which is the newer technology, is exciting, and as Sinead mentioned there are Alexa adaptations for older people. I do not know how well they can replace human contact, but I calculated how many waking hours there are in a week. There are 112 if you have eight hours' sleep, so there is a lot of time. You are not going to have human interaction all that time, so being connected to voice assistance and being included in the digital world can be important.

I would encourage the Government to support technology development. Let us work out how fewer of us can live alone and how we can live together communally. Chris said that you are twice as likely to be lonely if you are living alone. More and more of us are living alone, and we need to think about that.

Q129 **Lord Hollick:** Among the different kinds of technological interventions, is

there any robust independent data which shows their impact and effect?

Dr Chris Blackmore: The academic response to that is that there is a lack of robust evidence, notwithstanding excellent projects that we can talk about and discuss at length. It is an area where we need to know more about what works and what does not work and what some of the consequences are for the quality of contact.

Lord Hollick: In terms of developing social care policy, particularly to address the question of people living by themselves, that kind of evidence may be necessary to persuade the Government, local authorities and the NHS to consider interventions, or possibly funding such interventions. not to displace personal contact but to enhance it. Are there any moves afoot to measure the impact of what are very often commercially driven applications?

Dr Chris Blackmore: I do not want to speak for Nesta, but I know that increasingly they are keen to ensure that things are rigorously evaluated, because, as you say, when they are implemented we need to understand what is happening and what the economic impact is.

Lord Hollick: Does Nesta use part of its endowment to measure the impact of the interventions that it has made in this field?

Sinead Mac Manus: Yes. Evidence-based is one of our tenets at Nesta. For all our programmes we ensure that our grantees create evidence in relation to what they are doing. I agree with Chris that there is a lack of evidence in this space that technology can reduce social isolation, and I am not convinced that it can. As we mentioned, tech is an enabler. It is such a complex area that a technological solution will not be that simple in this space.

Lord Hollick: In a sense, therefore, it is anecdotal and a hunch that it is working or not. There is obviously some evidence, but no robust evidence is available. You cannot point us in the direction of a university or a group of people who are doing work in this field.

Sinead Mac Manus: No. Because it is complex, most of the interventions that we would have funded, for example BuddyHub or KOMP, are enabling something else to happen, whether it is a connection, a purpose or an activity. How do you separate the tech that created the good outcome for that older person? It is a complex area that we need to look at a lot more.

Simon Ommundsen: We are working continuously on that. In Norway, we are piloting KOMP in 30 local authorities. You mentioned one of the many issues, which they have, too, which is that there are no standardised ways of testing whether this really works and what the impact or financial gain is from this. We are trying to work alongside a university. We have a huge project with a research group at Oslo Metropolitan University which is trying to do some of this work and is also helping local authorities to develop their instruments for measuring it. We have also applied to the University of Oxford for grants to try to do some of these things. We think there is a lack of robust evidence that we can build on, so we try to make it as we go.

Catherine McClen: We collect our own quantitative and qualitative evidence. In the well-being space generally, we are not launching drugs, so

the broader question of what counts as evidence in the well-being space and what NICE might view as evidence is an open question. There is a risk of not having the evidence that something works and then ending up with a chicken-and-egg situation. There is a lot of work on impact evidence going on.

There is no one Holy Grail of a standard. We have to be a little careful that we do not block great ideas that work and that have their own evidence and prevent them from developing. More money would be welcome to help organisations like us to present evidence that is acceptable so that we might be adopted into the NHS, for example. That would be welcome.

Baroness Young of Old Scone: One technology I saw was a pattable furry animal to reduce loneliness. We have a plentiful supply out there of furry animals that are sentient and can talk to you. If I was given the choice between a dog and Alexa, the choice would not be Alexa. Is there any evidence of older people having pets to reduce their loneliness?

Catherine McClen: Some of the data will say that there are about 4 million to 5 million older people in this country who have a TV or a pet as their main form of companion. Chris, I am sure you can speak to the benefits on well-being of having animals. One of the challenges is often that older people may go into sheltered accommodation or to care homes and they are not allowed to bring their beloved pets.

Baroness Young of Old Scone: Should we change that?

Catherine McClen: Absolutely. I would love there to be thinking about rehousing. I would like to see intergenerationally mixed housing anyway, but also thinking about people who have had pets. We know about the well-being that having a pet can bring, and we should not stop people having pets in later life, as we do at the moment.

Viscount Ridley: We heard in a previous session some push-back against the idea that wearables are necessarily helpful in some cases. Claims are being made for their ability to help you monitor your health that are not supported by the evidence. The companies making them are reluctant to enter into partnerships with the universities that allow this evidence to emerge.

Is there an incentive for you as technologists to exaggerate the impact of your technologies when the evidence is a little fuzzy, as you have admitted? I am being a little provocative here. I am not trying to be horrible to you, but how do you balance that incentive?

Catherine McClen: It is not the technology that is doing the magic for what we do. The technology enables, gives you scalability and makes you more productive. It is all the things behind the scenes. The people we are introducing do not care less that we are using technology. The evidence is about the friendships. I have a wearable, and anyone who uses them perhaps has their own anecdotal experience of how they improve your fitness and your well-being. If they are produced by a company with pure commercial gain objectives, you can argue that they may want to suppress evidence, but that does not help them to sell more. We are a community-interest company, so we are here to benefit the public. Maybe if more

developed in that type of legal structure we could feel more confident that it is not just a commercial gain at the heart of what they are doing.

Dr Chris Blackmore: From the university side, we are friendly. We move forward with these things by giving them a hard look and asking which bits are working and which are not. If that means that you need to pivot, then fine, but I would argue that all these interventions need a strong academic underpinning. We need to know what is happening and we can learn from that. Do not be a stranger.

Simon Ommundsen: We are very concerned with getting universities and independent researchers to provide this kind of evidence, because obviously it is not very reliable if we are the ones producing it. We do have these anecdotes that we are good at promoting. There has to be a balance.

Lord Mair: If you had unlimited budgets, what kind of research could universities best do to address the sorts of things that we have been talking about?

Dr Chris Blackmore: One of the gaps is older adult mental health. In the survey I mentioned at the start, the sample size is not huge for older adults, so I think there are gaps in lifespan research particularly in relation to mental health. That would be on my wish list.

At my university, we are becoming increasingly interested in realist evaluation, looking at complex systems and not just taking something and divorcing it from its context and studying it, but asking how things work, for example in the NHS and the social care system. That is the right direction of travel, because it gives a more genuine result at the end of the day. If we are looking at things as they are being used in situ, inevitably we will end up with a better sense of the merits or otherwise. Sometimes these things are almost under a microscope in a smaller system.

Lord Mair: By "these things", do you mean the sorts of devices that we have been discussing?

Dr Chris Blackmore: Absolutely, yes. We can talk about purely technological advances or more system-wide approaches.

Lord Mair: What is Nesta's view?

Sinead Mac Manus: The key thing for us, putting the technology to one side for the moment, is, as I said at the beginning, that we need to do more research on the impact of the social determinants of people's healthy lifespan and how that contributes to loneliness and social isolation. If we do not start to address these factors, a whizzy bit of wearable or internet-of-things tech is not going to help. This gap is getting wider between different people who live in different parts of the country and have different socioeconomic backgrounds.

A lot of the technology that we are seeing in this space is still very expensive. Wearable technology is not cheap. Sensor technology, if you are looking at buying a package from one of these companies, is probably about £300. We do not have the evidence that they are making a difference to people's lives. It is not something that either the NHS or the care system is going to invest

in. We need to look at whether these technologies are benefitting older people or their families who can pay for these technologies.

As Chris was saying, there is a bigger systemic problem that is extremely complex. We need to unpack this more and build the evidence for what makes somebody live healthily for longer. This is not just about their lifestyle but where they live, their purpose, activity levels and so on. To unpack that more and build that evidence base would set us up well for the next 20 years, and that is what we are calling for with the Nightingale project.

Catherine McClen: We do say with loneliness and isolation that, if your health fails, life can become much smaller and you are at much higher risk, so encouraging us all to be healthier at a younger age to protect ourselves is a good thing as it is preventive.

On Sinead's point about some of the technologies that are at a price point that is not affordable, I understand, and I read somewhere that the NHS is starting to prescribe or give out fitness trackers to certain people. If that is the case, there must be enough evidence that they are happy to be piloting that and seeing what is happening. If we can get enough evidence to say that we can help people's health span if we are using these devices, and the NHS has that evidence for more widespread adoption and the cost-effectiveness of it, I would like to see these technologies being made available to people for whom price is the barrier. Price tends to come down as technology is developed, but it would be great if the NHS could step in, because the evidence is there.

Q130 **Lord Browne of Ladyton:** We probably have several questions on the Government's industrial strategy Healthy Ageing Grand Challenge, but here is your starter for 10. To what extent in what you do are you aware of this grand challenge, to what extent are you engaged with it and, if the answer is that you are engaged with it, how are you engaged with it? What is the mechanism?

Catherine McClen: We are very aware of it. As the Founder of a small social enterprise in this space, you would be very aware of the potential financial and other support which the Government are offering. I went to the launch event for the industrial challenge on healthy ageing and it seemed to be quite a challenge. There were barriers for smaller innovative start-ups to get involved, because it looked like the focus was on consortiums of bigger organisations.

None the less, we are having early discussions in Manchester and in London, and if we can find out who gets to the first stage of the healthy trailblazers, where there is a focus on collaborative working with smaller organisations like ours, we would look to try and get involved. It is not easy. Finding out who these are feels as though it falls to us. If there were some convening by the Government, that might help.

Hopefully, there will be some more specific funds available down the line for SMEs to get involved. Innovation can come from the smaller companies or it can come from larger companies. Often some of the things we have mentioned started as one-person companies or with a small number of people, so we ought to be able to get access to this funding.

Sinead Mac Manus: Nesta had some early conversations with the team behind the grand challenge. Personally, I am not convinced that it will be a very positive thing. A huge amount of money is being invested. When we first read about it, we thought it was going to be great, but digging behind the thinking and the planning we found that it focuses on larger commercial organisations that can stimulate the market for the technologies that we have been talking about, such as the wearables and sensors.

We had a number of conversations with the team about involving more start-ups, SMEs and social enterprises that did not really stick that well, and I think we will miss a trick here in looking for innovation in places with small organisations that will not be able to get involved in the challenge. Some of the detail has still to come out, but I echo what Catherine is saying. It will be challenging for innovative small companies to get involved in it. That is a personal view, not Nesta's view.

Lord Browne of Ladyton: This challenge has a dual aim, which is to extend health span by five years—we have heard a lot of evidence about just how heroic that is—and at the same time to reduce inequalities in healthy ageing. Can the technologies and services that we have been talking about in this session make a contribution to either or both parts of this?

Sinead Mac Manus: I am very sceptical about reducing health inequalities. It is a very complicated area which technology is not going to contribute to.

Going back to our point about tech as an enabler, we have to see it like that. It fosters these connections, purpose and activity, but it is not the thing in itself. There is a huge challenge in these sorts of technologies exacerbating inequalities rather than reducing them. We need to be very careful.

Lord Browne of Ladyton: To be fair to the challenge, although it is described as an industrial strategy, it does hope to achieve this by technology and related services. Related services are quite broad, so I rephrase that question by reference to that.

Catherine McClen: If, in the second stage, there is real collaboration that brings in a lot more small companies, hopefully the right players can get involved. If you are going to look at health inequalities you need to look at people generally in the lower socioeconomic groups. I see solutions out there, and I think we always have to ask whether the things that are getting funded are sustainable and how technology can help to bring the price down, which is what we do. Are they aimed at the people who are suffering these health inequalities? Has there been enough thought? Are the intended customers or users aware of some of these developments? I often look at the price point. As long as they can be adopted and the public purse eventually pays to allow people on a lower income or who are suffering health inequalities to be able to access them, hopefully the challenge can meet its aims.

The Chair: Thank you all for coming today. It has been most helpful.