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**Innovators in Healthcare  
Presentation**

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**Transcript**

## **Introduction**

**Kim Crowe:**

I'd like to share our experience of introducing circadian lighting. There are a lot of pictures on our website (<https://www.parkhaven.org.uk/>)

Hopefully what I can share with you is our experience of taking some of that scientific research and trying to make a difference for people.

So I'm the Chief Exec of Parkhaven Trust. We were established a long time ago in 1888 as the first residential service for people with epilepsy. Largely because one of the founders had a child who had epilepsy, and they wanted a safe place and a good life for them.

So from that original beginning, we have moved on quite a lot. We're based in Maghull, which is north of Liverpool. We are a dementia specialist, and we also have some services for general nursing and learning disabilities, all for the older age group. We have some early onset dementia service users and we have some older services as well. We have about 200 staff and we work with five different services in the local town.

I'd like to talk about one specific service called The Beeches. This was built in 2019, so relatively new. We were very lucky that we had a capital development, so we could work on what we wanted that to look at from the very beginning. We didn't have to adapt something that we already had.

We wanted to provide the best experience for service users and our staff. You will know if you've seen any of the press in the UK about the care crisis, as it's being called, how difficult it is to get good staff to work in our industry. So we wanted to make sure that we were attractive and to make the best use of our capital investments, which was just over five million pounds.

We have created a 45-bed unit. 30 of those beds are for people with lower levels of dementia needs. In our service, we call that residential. We have a more acute unit of 15, where we talk about end-of-life care and quite challenging behaviour, and we call that our nursing unit. So that gives us three households of 15 people, which is an important feature of The Beeches, in that we haven't got what you may think of as a traditional nursing care home where everybody's all in the same space. We deliberately chose to keep and care for people in smaller groups. We use the Stirling University Dementia Design Centre as a guide. And certainly, the architects we worked with had been trained by Stirling and understood some of the challenges living with dementia can bring.

We've also asked them to assess. And they gave us some really good feedback on how we could increase lighting, how we could do things differently, the use of outside space, etc. And as a result of that, we put quite a bit of kit into the building. So we've introduced circadian lighting. We've also introduced acoustic monitoring and digital care planning.

So, the role of staff and the effect of how they did their job on service users have significantly changed compared to the way that they worked beforehand.

So, just looking at circadian lighting, we introduced it in all of the bedrooms and the communal areas. So for us the communal areas are lounges, dining areas, and corridors, but not the back of house. So we haven't got it in the laundry, we haven't got it in the kitchen storerooms.

The colour and spectrum adjust throughout the 24 hours. For us, it mimics natural light during the day and biological darkness at night. I haven't got any specific figures to give you on the cycle itself, but we can adjust it throughout the year as well. So in the wintertime that's a different system and time frame than in spring and summer. We can adjust that in the system we've got.

We wanted bespoke light fittings because we didn't want it to look like a hospital. This is somebody's home. So we spent quite a bit of time working with a local Northwest of England lighting provider to develop a light fitting that looked domestic in appearance but had the same features that you would get in a hospital. There's a manual override as well. So, in an emergency, staff can just touch a switch, and the light will come on.

It cost us 50% more than the traditional lighting, but we thought it was worth it. Particularly as we were able to secure some funding from a grant funder who was interested in the type of things that we were doing, particularly for older people. So we were lucky in that sense, but it is more expensive than traditional lighting.

So, the benefits from our perspective are primarily related to sleep patterns. As you will know, as people get older, particularly people with dementia, their sleep pattern is often disturbed. And we have seen massive reductions in the number of people who are awake at night.

The building's been open for five years and we've only got a handful of people that started with us five years ago. Sadly some people have died since then. But one of the things we found is that when somebody new comes into the service we need to adjust them to the lighting and the whole way that we care for them, depending on their sleep pattern. And that improves gradually once they get used to the circadian lighting.

We've also seen fewer falls as a result of that because people are sleeping throughout the night and therefore they're awake during the day. So we've seen more activity and engagement from individuals wanting to participate, wanting to sit together and have meals wanting to chat to people.

It's quite remarkable when you see somebody who was at home six months ago, who wandered throughout the night, and within six months, they've turned things around. And these are people that are quite poorly. We've been really impressed with what we've done on that. And the other thing is that it gives more staff time for those who actually need it.

There will always be people who won't sleep, and they need attention. Staff resource is precious, and you don't want to run a unit where 45 people are awake at night because we haven't got the staff to look after 45 people who are awake at night.

During the day, that's a different matter. But it's helped us to spend time with those people who need it. So we have something at night where you may have two or three people who cannot sleep. And the staff will spend time with them. They may cook some tea and toast with them, they may read with them, they may play some board games with them. But they've actually got time to do that now because the majority of residents are sleeping throughout the night.

One of the lessons from our experience is that you need to be really clear about what you want to achieve. Our estates manager and I went on some programs at Stirling University about dementia design. They talked about lighting, and it absolutely made sense that everybody needs a good night's sleep.

So we were very clear from the beginning that was one of our objectives. We've also introduced some of the digital systems in the building, one of which is acoustic monitoring, which enables us to monitor individuals in their own rooms and look at whether their normal sleep pattern is actually in place or if there's something else going on.

And we can do that without opening the door, without going in and disturbing them, without flooding their bedroom with light. We can do that from a screen and very quickly react to that and make sure that they can quickly get back to sleep if that's what they want to do and get a good night's sleep.

We worked with lighting specialists and contractors. One of the lessons from that is they don't speak the same language. Absolutely not. Construction, contractors, or bricks and mortar - that's quite straightforward. But lighting specialists are special, and they're very technically orientated, which our contractor didn't understand.

So one of the lessons for us was to get them involved at the beginning to be very clear what it is we're looking for, rather than expect them to understand.

We've just secured some land and we're going to build another nursing home in the next year or so, and we've got the lighting specialist and the contractors coming together on Friday before we do anything else.

So it's a very important lesson to get them to speak about the same thing, to get to them to understand, particularly the amount of technology that you need and the amount of kit and where that's located and how you access it, etc.

In terms of ongoing developments, it is something that you need to factor into time and budget. Certainly for us, we thought, 'Oh, this is great. Everything's going to be fine!'

But it's not. You do need some kind of in house expertise that can talk to staff at a staff level. So we have champions in this particular unit, and they are the ones that carry out the staff induction, so they will explain to them about circadian rhythms without going into too much detail, without showing them massive amounts of research, but understanding what difference it makes to people if you get this right. And that's been very important to us, because if you start with something at the very beginning, while everybody's enthusiastic. It soon becomes hidden, and you don't really understand the benefits, particularly with the new staff. You've got to have that right at the beginning.

You need to build in the cost of upgrades too. So if some of our lights fail, they're much more expensive to replace than a traditional bulb. And in terms of the technology, again, there'll be a new version coming out. So you need to build that in your costings. Staff involvement in retraining is essential, essential right from the beginning.

One of the things we found was that we really needed to talk to staff about a change in their role. So traditionally, they had gone in to check on everybody on so many occasions during the night, whether they needed support or not. So flooding lights into the building, waking them up.

You're making sure everybody's okay, which is great, but it's actually disturbing people. So we spend quite a bit of time talking to staff about their roles at night and what they do and don't do. Traditionally they would have spent time cleaning equipment and making a terrible din. We've had to rethink that and rethink where that takes place in the building so it doesn't take place in the corridors outside somebody's room. It takes place away from that. And again, that's about reinforcing what this is about. It's about ensuring people have a good night's sleep and not disturbing them.

The other thing to say is that it is one aspect of care. Lighting itself doesn't replace good care. But it does help you to deliver that. That's certainly something that, staff do appreciate and talk about now as a very positive experience.

## **Shelley:**

Another fascinating and inspiring story of someone really sticking to their guns. I think the practicalities, as you mentioned, of getting a contractor, a lighting

manufacturer, and people who use the building into the same room and making sure they're all pointed in the same direction seem to me to be absolutely key.

Could you please share how much more it cost?

**Kim Crowe:**

£100,000 was the additional cost to put circadian lighting in on a five million capital budget. Tiny really.

**Shelley:**

But still, obviously, you had to justify that number.

**Kim Crowe:**

We were lucky that we could apply for a grant for £100,000, so it didn't cost us any more at the end. Now, for the new building that we're going to start on Friday we haven't applied for anything yet, so we've built in all the costs of circadian lighting in that new budget.

**Shelley:**

Are you able to calculate that return on investment at all?

**Kim Crowe:**

It's quite difficult because of the turnover of people. So if we'd had a study where it was the same people throughout, we could see their journey and the experience of it.

We haven't had that in the setting that we're in. But it's not assumed people will fall, and that's quite a cultural shift for our sector. There's always an assumption that if you have dementia at some point, you're going to fall; if you're older at some point, you're going to fall. and that's not the assumption that our staff have.

This is one contributor to making sure that's minimised. Another big contributor, as I briefly mentioned, is acoustic monitoring. So we can react very quickly to people who look disturbed in their room, and that's either volume - so if they snore and then they stop snoring, that raises a flag. Or if they're

talking in their sleep and they stop talking in their sleep, again, that raises a flag. If they get out of bed, we'll get somebody there straight away. That in itself helps. But getting a good night's sleep is a huge factor, and people not falling over.

**Shelley:**

Have you noticed any difference in the electricity bill?

**Kim Crowe:**

Again, difficult because of costs. We opened in November 2019, and we closed to new business in March 2020, and then energy costs went spiralling. So we are analysing that as proof of concept for the new building, but I haven't got those figures to hand.

**John Bullock:**

Again, real-life experience on the ground is absolutely invaluable for those of us who are actually doing the planning. And I think we, as a profession, we need to understand that this is a collegiate exercise.

This is about people's health, and it's about their well-being. It's not about stealing a commercial march by not sharing information about how you do stuff.

Thank you!