

NHS Greenspace in Scotland

Report to the Green Exercise Partnership on
University Hospital Ayr and Ailsa Hospital
greenspace demonstration project

Liz O'Brien 2018



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1. Introduction

The Green Exercise Partnership (GEP) is a joint venture between Forestry Commission Scotland, NHS Health Scotland and Scottish Natural Heritage and was established in 2007 to improve links between the environment and health sectors in Scotland in response to increasing evidence that public health can be improved through the use of the outdoors for physical activity and contact with nature.

The GEP's objectives are:

- To promote awareness, engagement and ownership of the benefits of health-promoting environments such as greenspace amongst NHS Scotland Health Boards;
- To facilitate the delivery of practical enhancements and better use of greenspace within NHS ownership;
- To mainstream use of the NHS estate as a health-promoting asset.

As the Greening of the NHS Estate project is being rolled out to strategic hospital sites in the Ayrshire and Arran Health Board area, it was considered useful by the Partnership to establish current views (qualitatively) of both corporate decision makers and clinicians at the University Hospital Ayr and the Ailsa Hospital, which share a site on the outskirts of Ayr, on the impacts and the opportunities, for delivery of priorities and outcomes, of the greening of the hospital setting. The research also sought to explore the barriers that exist to mainstreaming this approach.

There is increasing evidence internationally that engagement with nature can have an impact on health – physical, mental and social. In the last half dozen years there have been eleven or more systematic reviews exploring different aspects of the health benefits of nature for different populations groups (Annerstedt and Währborg 2011, Fraser and Lock 2011, Van Cauwenberg, De Bourdeaudhuij et al. 2011, Moran, Van Cauwenberg et al. 2014, Gascon, Mas et al. 2015, Gray, Gibbons et al. 2015, Hunter, Christian et al. 2015, Lovell, Husk et al. 2015, Gascon, Triguero-Mas et al. 2016). The evidence is not entirely consistent due to the range of different studies and types of methods used and environments explored. However there is reasonable and increasing evidence of effects in terms of broad health and wellbeing for many groups of people.

1.1. Previous similar qualitative research for the Green Exercise Partnership

In 2013 qualitative telephone interviews were undertaken by Forest Research with a range of health and estates professionals in different parts of Scotland (Table 1).

Table 1 Interviews with health and estate professionals within NHS Scotland in 2013

28 th June	Sustainable Development Manager, NHS Scotland
3 rd July	Director of Corporate Planning and Policy, NHS Greater Glasgow and Clyde
10 th July	Director of Public Health, Gartnavel Royal Hospital, NHS Greater Glasgow and Clyde
10 th July	Consultant in Public Health Medicine, NHS Greater Glasgow and Clyde
12 th July	Director of Strategic Projects and Property, NHS Forth Valley
17 th July	Director of Public Health, NHS Tayside
21 st August	Head of Asset Management in Health Finance

The key points and issues raised from these interviews in 2013 included:

- Very positive views of NHS greenspace from all interviewees. This was perhaps unsurprising given that all have been involved in a greenspace demonstration project or were going to be involved.
- However, all of the interviewees felt that greenspace would not be seen as core business for the NHS, but some felt it was the 'right thing to do'.
- NHS greenspace was thought to contribute across a range of policies such as health, biodiversity, energy. Many felt the focus should be on health.
- The key priorities that NHS greenspace can contribute to were identified as physical activity, mental well-being, reduction in length of hospital stay, and contribution to creating less obesogenic environments.
- Beneficiaries of NHS greenspace were identified as patients, staff, visitors and local communities; however patients and staff were viewed as the priority.
- There was a strong realisation of the difficulties of monitoring and evaluating (M+E) these types of complex greenspace interventions, with a suggestion that a mixed methods approach might be most suitable as there would be difficulties quantifying and monetising many of the benefits.
- It was thought that there is potential to collect some M+E data through existing processes such as operation performance reviews or NHS information services. However, it was outlined that there is already extensive reporting in the NHS, so justification for further reporting might be needed.
- Interviewees suggested taking a pragmatic and practical approach i.e. demonstrate where NHS greenspace improvements have been carried out and how, provide details of the benefits, proactively advocate the approach, and provide guidance and support for sites who might want to take this up.

- It was thought that there are opportunities to publicise what has already been done through existing networks and meetings: i.e. asset managers, sustainability planning and implementation groups, corporate management teams, two monthly meetings of all directors of public health, annual NHS Scotland conference.
- Taking a strategic approach was felt to be important; there are clearly priority sites near large centres of population and a good resource to work with for the GEP to focus on.
- Partnership working is important: the GEP has been an important partner, for example at Ninewells Hospital, and there is potential to partner with local authorities and local voluntary sector organisations.
- There are opportunities to get NHS greenspace written into specifications for new capital build programmes in the future and this could have a big impact as £550 million is spent on this per year. Other funding opportunities are hospitals' own capital resource, endowments and the Woodlands In and Around Town challenge fund.
- There was some interest in thinking beyond immediate sites to the wider green environment and what links could be made to this.
- Interviewees suggested targeting those Area Health Boards and sites where there are people with an affinity for greenspace.
- There was acknowledgement that the GEP has been effective so far in getting demonstration sites off the ground and securing funding for further projects. This would not have happened if there was no conviction of the importance of greenspace for health.
- Quick wins could include the opportunity to influence planting and mowing regimes in improving existing greenery and reducing grounds maintenance costs.

A briefing note on 'Innovative NHS Greenspace' was developed in 2014 drawing on the interview data as well as giving an update on the progress of NHS greenspace demonstration sites. In 2015 the Green Exercise Partnership gave a further update on its work and progress (Figure 1).



Figure 1 Publications from the Green Exercise Partnership

2. Research methods

For this current piece of research the Green Exercise Partnership was interested in a further round of interviews at a range of demonstration sites including:

- University Hospital Ayr and Ailsa Hospital (two hospitals on one site)
- New Craigs Hospital Inverness
- Gartnavel Hospital Glasgow
- Royal Edinburgh and Lothians Health Foundations
- Ninewells Hospital Dundee
- Forth Valley Hospital Larbert
- Possil Park Health and Care Centre

The idea was to undertake 4-5 interviews at each site starting with University Hospital Ayr and Ailsa Hospital to test the approach and initial results (Phase 1) before moving on

to the other sites (Phase 2). The Green Exercise Partnership outlined some of the key questions to be addressed in the interviews and an interview protocol was developed by Forest Research and agreed with the GEP (see Appendix 1).

Five interviews with health and estates professionals were undertaken at the Ayr and Ailsa Hospitals, along with discussions with The Conservation Volunteers (TCV) Greenspace for Health Senior Project Officer who liaises with patients, clinicians, staff and the wider community to support and enable green exercise, recovery programmes and outdoor learning on the site, and with the Public Health Programme Lead involved in the Greenspace demonstration project at Ayr and Ailsa.

The interviews were initially going to take place face to face with the researcher joining a meeting of estates managers. However, it was not possible to take this approach due to staff availability and in the end all of the interviews were conducted by telephone. It proved very difficult to reach busy NHS staff and the interviews were only able to take place due to support from the Public Health Programme Lead and another colleague. Due to the time pressures facing staff interviews lasted 30 minutes but usually no longer, therefore all the topics of interest outlined in the interview protocol (Appendix 1) could not be covered.

Interviews at further sites have not yet taken place due to the difficulties of setting them up in the time schedules of extremely busy staff.

Interviews were undertaken with respondents in the following roles within University Hospital Ayr and Ailsa Hospitals:

1. Clinical support services
2. Public Health
3. Estates and capital planning
4. Hotel (hospital) services
5. Property services and strategy and partnership.

The research questions for this piece of work are as follows:

1. What impacts has the Greening the NHS Estate project had so far from the perspectives of clinicians and corporate decision makers in Health Boards?
2. What has been the progress towards mainstreaming the concept of Greening the NHS Estate and what are the key factors that are enabling mainstreaming where it is occurring?
3. What opportunities has the Greening the NHS Estate project provided?
4. Have any barriers been encountered in the project and if so have they, or how could they, be overcome?

All of the interviews were recorded, transcribed and analysed using NVivo 8¹. Each transcript was coded into a series of themes and sub-themes that were grounded in the data rather than a *priori* list being developed beforehand.

3. University Hospital Ayr and Ailsa Hospital Greenspace demonstration project

University Hospital Ayr and Ailsa Hospital are situated within the Ayrshire and Arran Area Health Board in a rural setting on the outskirts of Ayr. Ayr is an acute district general hospital and Ailsa is a rehabilitation type facility for older people and those with mental health problems. The site is in a state of change with some of the patients in Ailsa being transferred to other hospitals and office based staff moving into some of the vacant accommodation. NHS Ayrshire and Arran has worked with the Green Exercise Partnership (GEP) since 2011. A strategic review of the estate of the Health Board was carried out, resulting in 86 sites being assessed against a specific set of criteria and 7 being prioritised as offering the greatest potential for greenspace development and health gain (NHS Ayrshire and Arran, 2016).

A GEP national demonstration project was set up at University Hospital Ayr and Ailsa Hospital as it had approximately 28 hectares of neglected and overgrown woodland. The work was funded by the Scottish Government, the Green Exercise Partnership (comprising Forestry Commission Scotland, NHS Health Scotland and Scottish Natural Heritage), NHS Endowments and Sustrans Scotland. Many improvements have been made to the woodland and green space, bringing it into sustainable management and including: a new paths network, including a 1 kilometre new Sustrans cycle route, new tree planting, new signage and interpretation and new seats and perches as well as a teaching circle (Figure 2). For more information see Section 4 of 'The Director of public health annual report' (NHS Ayrshire and Arran, 2016). A key element of the demonstration project is the development of the post of Greenspace for Health Senior Project Officer. The post holder liaises with staff, patients and the wider community to support and enable green exercise, recovery programmes and outdoor learning on site. The Conservation Volunteers (TCV) was commissioned to deliver this.

¹ Qualitative software package

Figure 2 Woodland walks (NHS Ayrshire and Arran, 2016)

Woodland Walks and Greenspace Infrastructure University Hospital Ayr/ Ailsa



4. Results

4.1. Benefits, use and attitudes to NHS greenspace

4.1.1. Use of and attitude change to the greenspace

Interviewees outlined that the greenspace was being used by staff, some patients and some members of the wider community. Staff at the Hospitals had undertaken a step challenge using pedometers and this could become quite competitive. Different teams within the hospitals competed against each other for the challenge which took place over a one month period. The woodland and greenspace was seen as a great way to increase the number of steps staff did:

Essentially, a lot of the staff, at Ailsa and Ayr people are encouraged to go out and walk at lunchtime during the summer, the pedometer challenge, people were walking and encouraged to do various walks. They were given one of these pedometers to actually measure the number of paces and you could see the staff using the tracks, so people do use the tracks and the pathways more than they did before, that is a fact. (Interviewee 2)

It's a bit of a culture change in many respects. We within Property are sufficiently isolated and removed from the day-to-day patient care so we don't necessarily see the impact of that. However, we are all staff here and the number of people that are actually going out and using these pathways and walkways now, the outdoor space, that simply didn't use it before because access to it was compromised is really quite surprising for me, quite an eye-opener and, therefore, I can really see the benefit of that. (Interviewee 3)

Another interviewee saw patients from Ailsa Hospital using the walkways as well as others, with the improvements made making it more pleasant and safer to get around the hospital site and between the two hospitals:

Yes, I do see the psychiatric patients using the site, using the walkways and there are short cuts so it's quite a big site, so one of the paths in particular you can meander through the wooded area but it's effectively a short cut across the site. So you can go from the top of the site to the bottom through the pathway instead of having to walk in between the buildings through car parks etc. (Interviewee 4)

Others noted that local dog walkers also used the site and sometimes visitors coming to see patients might walk before or after their visit. One interviewee was aware of someone who came up with her children to walk in the woods and suggested that it was a great space for the nursery on site to make use of in terms of getting the children outdoors:

We've also got a nursery on site and they have been making use of some of the spaces that have been created, the paths so that's the Busy Bee Nursery up at the hospital so it is a private nursery facility but the kids need to be outside so having that has a slightly wider community benefit. (Interviewee 5)

There was general agreement amongst interviewees that there was attitude change towards the presence and benefits of hospital greenspace. For another interviewee this was a change in attitude leading to action with staff, and again the usefulness of the on-site nursery using the site as the following quote highlights:

I think very much so from within the staff perspective and having responsibility for the grounds I'm out and about in the hospital site a lot, I see a lot of staff using the paths, we see groups of nurses and groups of admin staff doing the walking challenges and I think it's certainly benefited the staff, you wouldn't ever have seen these staff before out and about on the site. We also have a child's crèche on site and there are maybe up to 40 children and they are using the site a lot more since the paths were developed, I see them out on the paths with their

teachers and I think it's good for them from a learning point of view, wildlife etc and we do have quite a bit of wildlife on the site like deer and hare and rabbits and squirrels, so they do get to see a bit of wildlife when they're out there (Interviewee 4)

When considering the attitudes of staff and or decision makers, one interviewee felt that change was cyclical and that it might be sometimes thought that the battle to win hearts and minds was won, but then something else would come along to potentially change that or dilute the effect.

That's hard. I think it's cyclical as well, you think you've won one battle but I think due to the fact that we have got the paths and due to the fact that the staff have seen the paths and are getting out at lunch time and using them, that they are seeing them as something that should be provided. So the fact that we have got them there has helped people think, oh yes, of course we should be doing that. So we've kind of got to that stage and some of them, the early adopters I guess you'd call them, are using the paths but we haven't yet got people to move to the next stage I suppose of actively setting up their own groups. (Interviewee 5)

This interviewee also felt that with the pressure on clinical staff at present, there was still work to be done to build their confidence in development of a referral pathway for patients, for example, for patients with cardiovascular problems to be referred to a greenspace intervention. Another idea, still in its early stages, is to enhance the prevention of diabetes work by building in green gym² type activity. The TCV health project officer was keen to set up these types of interventions and currently runs two green gym sessions per week which include physical activity, food growing and habitat management and creation. These are aimed at staff, patients and the local community. The sessions are publicised through local community groups, mental health groups, in GP surgeries and in the hospital departments. An aim is also to develop a cardiac rehabilitation programme which would be a 6 week programme for patients.

The majority of interviewees also thought that the idea and concept of NHS greenspace was now part of the general conversation and was not seen as unusual as the following quotes outlines:

But I think the key thing is that it's now part of the natural conversation rather than an exception. This isn't something new anymore and it's not something that is alien to a lot of people. So it's something that we are quite open about having that frank discussions with, rather than trying to avoid it as something that is maybe seen as being a bit of an inconvenience. (Interviewee 3)

² The green gym aims to provide people with opportunities to enhance their fitness and health while taking action to improve the outdoor environment.

4.1.2. Recognition of the benefits

The majority of interviewees were very positive about the benefits of the greenspace demonstration project at the Hospitals. For one interviewee this was focused on the benefits to staff and the values of the NHS:

It is part of our whole staff health and wellbeing agenda that we're promoting. So there is a whole range of other things that go with that. It builds on the values of the organisation, which is caring, safe and respectful for staff, patients and the public. So I see it positively. (Interviewee 1)

The funding and support to develop the demonstration project was also thought critical, and there were also a couple of comments made about the potential liability of the management (see section 4.2) of the site in the long term as well as the benefits:

To be blunt, probably the woodland management aspects of it have been of benefit to us. So there has been third party input and funding in terms of just that. You know what woodland management is about so if you're looking after your woodland as it should be, it is safe, especially for putting pathways through it. There is a liability on us in terms of making sure that people are safe and not getting hit by trees that are rotten and falling down, the hazards in terms of pathways, etc. are addressed, so yes there is a definite benefit there. (Interviewee 1)

Another interviewee outlined the benefits to patients particularly in terms of mental health patients at Ailsa Hospital:

I could see the benefits from my perspective having dealt with the mental health side for so long, and I could envisage the benefits for the mental health patients. It's just getting them out and about and not contained or restricted to ward areas, getting them out in the wider hospital, because all our wards are self-contained buildings and over the years we've created ward gardens for them which first were fenced in to make it secure for them, but it did mean that they didn't get out and about a lot and we just felt that opening the site wider would be of benefit to them. (Interviewee 4)

4.1.2.1 Skills and learning

One benefit was learning and skills development. This was not something everyone mentioned as one interviewee suggested ground staff were not necessarily learning new skills as a lot of the path and tree work was contracted out to other organisations. However, for another interviewee there was learning taking place and an expansion of knowledge within this person's team about looking after the greenspace and considering aspects of management such as grass cutting, and instead of having a manicured lawn creating and seeding a meadow space.

So I think it's been really beneficial to all concerned and I think it has also been quite a learning curve for people as well, people like myself. I've been aware of the work that has been done on other sites, but to actually see it put in place here it means that there is that demonstration site, so how can we take the learning

and apply that to other sites across Ayrshire as well, which I think is obviously hugely important. (Interviewee 3)

Learning from NHS greenspace demonstration projects in other Area Health Boards was thought to be important and there was awareness by some interviewees of the work done at Gartnavel Hospital in Glasgow and the Forth Valley Hospital in Larbert.

4.2. Management of NHS greenspace

For those involved in managing the hospital estate, consideration was needed of the costs of the greenspace in the long term after initial funding to support the development of the greenspace had come to an end as the following quote suggests:

But it also creates issues in terms of once the funding disappears after a four / five year period, we then have to take on that liability and ensure that we're maintaining and repairing and looking after the woodland as it should be. (Interviewee 1)

The above interviewee talked about the difficult financial circumstances that Ayr and Ailsa were operating in and while acknowledging that greenspace is very much an amenity there was potential for it to put extra stress on the system. There is now a management plan in place for the woodland and greenspace. At present the grounds maintenance staff do very little tree work and when that is needed specialist contractors are brought in. The greenspaces have increased work load for maintenance teams with checks for safety, on-going maintenance and organising and supervising contractors when needed. One incident with a contractor disturbing the ground surface water meant that water leaked onto a pathway which when leaves dropped from the trees became very slippery and this caused a hazard in wet weather. Another interviewee talked about the importance of design and local knowledge of the site, giving an example of some screen planting that was put in a very windy spot which then attracted a lot of rubbish:

So you end up with a lovely bit of screen planting that is absolutely festooned in plastic as a result. So there is a wee bit of local knowledge and that has been a bit of give and take and they have adjusted the designs accordingly to pick up some of these things. It's been good, it's worked I would say really quite well on both fronts. (Interviewee 3)

There was also some concern that there might be abuse of the site when more people are being encouraged to access it. However this has not turned out to be the case according to one interviewee:

Yes, and it's not been bad at all to be honest, we've sited litter bins at the beginning of the path but litter, we envisaged that being a bit of an issue and we'd have to spend time picking litter but to be honest it's not been a problem. We were also concerned because although we're not in town, we're only about a quarter of a mile away and we thought, are we going to encourage all these youngsters from town because we'd created the training circle and we thought, are we going to bring people in to be partying on the site.

Interviewer: So that hasn't happened then?

That certainly hasn't happened, but you have all these concerns to begin with but in fact nothing has materialised and it's been fine. (Interviewee 4)

However interviewee 2 raised concerns about the new Ayrshire Central site potentially suffering from more vandalism as it is next to a housing estate. This interviewee also highlighted that changes occurring at some of the sites also mean that development of greenspace is not always an option:

The difficulty with some of these sites is that we are in the process of change, and there is a fair bit of land at Ayrshire Central that's actually on the market for sale at the moment and, therefore, it wouldn't be appropriate to extend the outdoor space as much as you would naturally otherwise do at the Ayrshire Central site. Also we are looking at a programme of demolitions at the Crosshouse site, which again tends to limit what we can do around the perimeter of what is already quite a busy site there.

Interviewee 5 also stated that hospitals never stay the same; their function can change over time.

4.3. Inclusion of greenspace in decision making

Interviewees outlined that inclusion of NHS greenspace into new build or retrofitted into existing sites is now part of the decision making process but this needs to be looked at on a site by site basis:

Yes. I think it's something that we need to recognise and I guess it's difficult to say, here is the policy, this is what you'll do and you'll apply that to every single site. I think you need to take it probably very much on a site-by-site basis. In some areas, absolutely maximising the outdoor space is absolutely the thing to do without question. In other areas, you might want to say, okay, we will use an element of it but we won't go absolutely overboard because we think services may change and we may have an element of redundancy here and, therefore, as part of that redundancy, we may have to think about selling part of a site or buildings, etc. It's about taking a balanced view through all of that. (Interviewee 3)

As noted above NHS greenspace seems to have become an accepted part of the conversation in design and delivery and is considered important alongside the indoor spaces:

It's not as if we have a huge number of large hospital sites with the sprawling lands, but certainly for anything that is being designed new, it's quite surprising now the amount of thought that goes into the outdoor space. I don't think I've seen plans for any new proposed building works of any substantial nature in the NHS now for quite a few years that haven't had quite extensive outdoor areas that have been carefully thought out for the client group involved. So I think it is now pretty much a given as part of the design or alteration of existing facilities or

anything new that is being done. The outdoor space is now being viewed almost equally as important as the indoor space. (Interviewee 3)

An example of this was given for the new hospital at Ayrshire Central that is actually called 'Woodland View':

But yes, it was certainly planned in terms of landscaping and some of the aspects around the greening of the estate for the new Woodland View Hospital at Ayrshire Central that was put in place; it's a 240 bed hospital. So it's a big one and greening of the estate was certainly one of the issues that was considered as part of the design and build. (Interviewee 1)

The Estates, Environment and Sustainability group meet on a monthly basis; this is a group of senior people from Ayrshire and Arran Health Board and is not site specific. One interviewee outlined that greening is usually on the agenda because of the greater awareness of NHS greenspace across Ayrshire and Arran. The group sanctions any of the recommended schemes and discusses on going management issues and costs associated with the schemes.

4.4. Delivering against objectives

Interviewees were asked whether NHS greenspace helped them to meet any of their objectives and priorities. For one interviewee this was the case, while for another it was not:

To be blunt, probably the woodland management aspects of it have been of benefit to us. So there has been third party input and funding in terms of just that. (Interviewee 1)

No, not really, not necessarily. Greening of the estate was an area that tended to be ignored because we were working on other priorities, other areas as such. Basically the Health Boards in Scotland tended to not have an awful lot of money about the maintenance and management of the green areas or the greenspace. It was actually done basically as cheaply as possible, (Interviewee 2)

There is potential for the greenspace to meet estate management priorities but a concern that this only happened via external funding.

...certainly it's recorded as a success here in terms of we do actually have a management plan in place for our outdoor space and, therefore, we are, I guess, compliant with good estate practice in that regard. (Interviewee 3)

I think without that [external funding], it would be a real struggle and I think with the financial constraints that boards are generally under now being even greater than they were a few years ago, that would be even more of a challenge to start that afresh nowadays without some outside assistance. So I think without that external funding, it would probably be difficult to have achieved what has transpired so far. (Interviewee 3)

Meeting priorities and objectives for one interviewee was primarily focused on staff and the potential for the woodland and greenspace to have an impact on the mental wellbeing of staff. However, there was recognition that being able to evaluate these benefits might be difficult.

I think from the Trust³ point of view and even on a personal level I think that is probably the area, the mental wellbeing area is probably one of the biggest benefits, being able to ... we have all had conversations with colleagues about being stressed but at least I'm able to get outside and clear my head and go for a brief walk in the woods. That's quite difficult to measure, these small added benefits and that's what's going to make it challenging to evaluate the output from this, there are so many areas of complexity in this and we're in a time of great political change and tumult and pressures on finance and pressures on our services and so we might be mitigating by adding the green space against pressures. We may see a deterioration in staff wellbeing overall but it probably would have been worse if these things [woodland and greenspace] weren't here. (Interviewee 5)

There was also recognition that greenspace could meet objectives for getting staff to be more physically active as well and an opportunity at some point in the future to join the site up with a wider cycling and walking network in the local area:

Counting in terms of clinical outcomes and direct contributions to activity levels amongst staff is going to be difficult. It's an incremental change, it's a positive benefit and I think that's going to be hard to say more than that. I think you are going to have to shout loudly about the ... it's a moral good, it's an absolute good for the people who are using it and that in itself should be enough reason for us to continue in this direction. (Interviewee 5)

4.5. Barriers to NHS greenspace

Interviewees were broadly very positive in their comments about NHS greenspace, however there was awareness of some potential barriers and a sense that retro-fitting or creating these spaces could be difficult. Focusing on direct patient care given the huge demands on the health service was seen as a priority. While NHS Greenspace is adding value to the hospital it was suggested that it is not critical to its functioning. Concern was also expressed about opening up access and encouraging use that could lead to problems as outlined in this quote:

The problem is that at present, we're bringing cyclists and other people who would normally never come in here into a psychiatric hospital and there were a lot of complaints from the nursing staff of people coming on-site, leaving their cars, and the privacy and the dignity of patients was compromised because of people coming in and actually going into the woodland and into the areas surrounding the hospital. (Interviewee 2)

³ What were previously known as Trusts are now referred to as Regional NHS Boards.

Another interviewee (Interviewee 2), while suggesting that there were no specific barriers to developing the greenspace at the hospitals or getting the funding, did suggest that due to the pressure and demands on land within hospitals, particularly for car parking spaces, that there might be pressure in the future on the greenspace for this reason. One interviewee viewed the main barrier not in terms of developing the greenspace but in changing people's patterns of behaviour so that they utilised the space for health benefit. The interviewee also suggested that a lack of awareness of the greenspace was also still an issue. Funding to get the demonstration project off the ground was seen as critical and a number of interviewees felt that progress would not have been made without this. Another interviewee initially thought that the woodland and greenspace improvements would mean more work for grounds staff with no extra resource available to support this. However, the grounds staff have incorporated maintenance into their existing work and this has not proved to be a particular problem so far.

5. Conclusion

This small piece of work illustrates how difficult it can be to reach and interview NHS Scotland staff. The majority of interviewees were involved in estates and management of the hospital facilities rather than being involved directly with patients. The majority feel that NHS greenspace has now become a natural part of the conversation which is an important step in the potential process of mainstreaming NHS greenspace; the next step is for it to be incorporated into referral pathways alongside other interventions and for more staff to use and enjoy the greenspace. However the improvements come at a time when the health sector is facing increasing pressures on budgets and staff time. The greenspace demonstration projects across Scotland provide excellent examples of what can be done in terms of developing and utilising existing woodlands and greenspaces and developing new greenspaces. Importantly the demonstration projects show what is possible and how woodlands and greenspaces can add value to existing and new sites.

There were mixed views about the capacity and skills available for grounds staff to be able undertake the woodland maintenance work, with contractors being brought in to deal with some of the management. Increased resources and developing staff skills would ensure that the maintenance work could be undertaken in house, reducing the time spent on developing and managing contracts.

It was felt by interviewees that decisions about greenspace needed to be made on a case by case basis as there are pressures on some sites as they change and develop, which could result in car park development, some land sales, or hospital changes. However, there were ideas of how greenspaces can link into local communities and be of benefit, and also be an important resource for staff and their individual wellbeing as they are under increasing pressure.

Interviewees primarily thought that lack of evidence of the benefits of NHS greenspace is not an issue and that some funding was critical to get work off the ground; some acknowledged that there were opportunities to be creative with only small amounts of funding. The theoretical and evidence based arguments of the benefits of greenspace were thought to be won - but not necessarily the financial argument.

The findings of this research were not dissimilar to those from the interviews undertaken in 2013. There seems to be strong evidence that NHS greenspace is being discussed in regular decision making meetings particularly concerning estates management and environmental sustainability. Two staff surveys carried out in 2014 and 2016 (Green Exercise Partnership (2016) also highlight increased awareness and familiarity with the woodlands and greenspace around Ayr and Ailsa hospitals. Importantly, learning is being taken from what has been developed on site and applied elsewhere in the Ayrshire and Arran Health Board.

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Appendix 1. Interview protocol

All respondents	
Introduction	<p>Just to give you a bit of background I work for FR which is the research agency of FC and I've been asked by the Green Exercise Partnership to interview a number clinicians and corporate decision makers in the Ayrshire and Arran Health Board about the Greening the NHS estate project.</p> <p>The Green Exercise Partnership (GEP) is focused on greening the NHS and includes Forestry Commission Scotland, NHS Health Scotland and Scottish Natural Heritage.</p> <p>The NHS greenspace activity to date in the Ayrshire and Arran Health board is as follows: University hospital Ayr and Ailsa GEP national demonstration established, neglected woodland brought back into management, new paths established, new Sustrans route (1Km), new signage and interpretation, tree planting(2,500 trees) and 26 new seats and perches. Officially opened by chairman of NHS board in 2015. Use of footfall counters. Engagement activity taking place via TCV employing greenspace for health senior project officer.</p> <p>In order to further promote and mainstream NHS Greenspace we want to get a better understanding of the impacts of the Greening the NHS Estate project so far.</p> <p>With your permission I would like to record the interview, no one's names will be used, you will remain anonymous and I would be happy to let you see the draft outline or report that I will be produced for the GEP.</p>
Q1	<p>The NHS greenspace demonstration projects have been undertaken to create health promoting environments that can be used and enjoyed by staff, patients and visitors. They can also be used by staff for therapeutic activity.</p> <p>Can you outline if you have been directly or indirectly involved in the greenspace project/s and if so in what way and when did that start? <i>(prompt: involvement in decision making, involved in getting the project/s up and running or in delivery, involved in promoting or encouraging staff to use and enjoy the greenspace (with patients, by themselves)</i></p> <p>If you have not been involved are you aware of what has taken place?</p>

Q2	<p>What do you feel are the impacts of the NHS greening project so far?</p> <p>Has it provided any opportunities? (<i>prompt: for further greening of this site or others, for raising the profile of greenspace in health care settings, for working with patients /staff outdoors</i>)</p>
Questions for estate managers only	
Q3	Thinking about the sites which you are most familiar with what estate management priorities or outcomes (as set out in the Estate Asset Management Policy) have the project delivered or will deliver?
Q4	Have the estate changes that have been made created more work or reduced work?
Q5	Have you found that different skills and training are needed for staff in managing these greenspaces (e.g. woodland management skills, wildflower meadow management skills)?
Q6	Have any of the changes resulted in cost savings or incurred additional costs. Are these one off or on going? Will this have an impact on decisions for maintenance of the greenspace or the creation or improvement of any further greenspaces?
Q7	Do you think attitudes are changing towards the use of the greenspace in health care settings by estate managers?
Questions for clinicians	
Q8	<p>Thinking about the sites with which you are familiar what clinical priorities or outcomes has the project helped to delivery or will deliver in the future?</p> <p>(<i>e.g reducing overweight, reducing sedentary behaviour, increasing physical activity, improving mental health etc.</i>)</p> <p>How have / are those priorities or outcomes achieved?</p> <p>(<i>prompt: via use of space as part of therapeutic programme, by use of staff, patients, visitors in their own time, via hospital ranger encouraging and enabling accessing through organised activity etc</i>)</p>
Q9	Do you think attitudes are changing towards the use of the greenspace and green exercise for clinical care and recovery?
Q10	<p>Do you think the green outdoor estate is now more likely to be considered in clinical interventions? If this is the case what helped this to happen (<i>prompt: promotion of NHS greenspace, use, evidence gathered on use / benefits</i>)</p> <p>If no what support would help to make this happen in the future (<i>prompt: support in terms of risk management, training for clinicians, evidence of the benefits or opportunities</i>)</p>

All respondents	
Q11	<p>At a Health Board level how likely do you think it is that greenspace principles will be integrated into new build planning, procurement and development?</p> <p>Are you aware that this is already happening or what would be needed to enable it to happen? How might this take place?</p>
Q12	<p>Do you think there are any barriers to rolling out or mainstreaming NHS greenspace? <i>(prompt: lack of evidence of the benefits, organisational constraints, lack of understanding of the role greenspace could play, concerns about health and safety,</i></p>
Q13	<p>What indicators of success should be adopted to provide evidence of the role of NHS greenspace in this health board to ensure role and out mainstreaming of NHS greenspace <i>(prompt only after they have responded first:</i></p> <ul style="list-style-type: none"> • <i>Changes in how staff, patients, visitors, wider community perceive the hospital space</i> • <i>Active use by staff etc. of the estate – personally, for therapeutic recovery, patient activity programmes, social interaction</i> • <i>Improved staff satisfaction with the work environment</i> • <i>Better staff retention rates</i> • <i>Reduced staff sickness rates/faster return to work</i> • <i>Positive health impacts for patients including recovery rates for long term patients or post operative patients</i> • <i>Mental and physical health benefits for patients participating in green exercise programmes compared to more traditional indoor programmes</i> • <i>Changes in people’s perceptions of how well the estate is managed</i> • <i>Changes in perceptions on how greenspace contributes to hospital sustainability)</i>
Q14	<p>Who should be the audience for this evidence? <i>(prompt: staff, patients, visitors, wider community, wider Health Board, NHS Scotland, Scottish government)</i></p>
Q15	<p>Do you feel that if this evidence was made available it would assist with mainstreaming NHS greenspace?</p>
Q16	<p>Is there anything else you would like to say in regards to the NHS greening project?</p>
Thank you for your time and information and close	

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