



The Tayside AHSP. A Qualitative Evaluation and Report

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1. Executive Summary

The Academic Health Sciences Partnership in Tayside (Tayside AHSP) is a unique collaboration between NHS Tayside, University of Dundee and industry partners to drive and enable innovation uptake in health and social care.

Tayside AHSP is an example of an Academic Health Sciences Centre (AHSC). These centres promote a strong academic/healthcare provider/industry partnership that drives synergy and integration in research, innovation, service improvement and education and training of health professionals, to achieve better health outcomes and enhance job and wealth creation.

This independent, qualitative evaluation by academics from the School of Management at the University of St Andrews explores the perceived value, successes and challenges of setting up and

implementing the Tayside AHSP since its start in 2014.

The findings and recommendations laid out in the next two pages are based on the collection of a multi-faceted dataset including: documentary analysis of internal and publicly available documents; thirty-seven stakeholder interviews; and observation of meetings between stakeholders and healthcare innovation-related events.

The findings and recommendations from this evaluation will potentially influence the future direction of a Health Innovation Network in Scotland.

Key findings and recommendations



1. AHSP is wanted and timely.

There is consensus across stakeholder groups that Tayside AHSP is a good thing. Tayside AHSP is seen as a valuable local mechanism for NHS, academia and industry collaboration. Stakeholders see Tayside AHSP as timely, in the context of local and national attention to innovation.

Recommendation 1: A renewed plan for ongoing cross-institutional support for Tayside AHSP should be put in place.



2. An identity crisis should be averted.

Clarity is called for as to the purpose and positioning of Tayside AHSP moving forward. The key to harmonising stakeholders' understandings is to ensure that all parties can see how the AHSP can help them work towards their respective targets.

Recommendation 2: Develop full clarity around who and what the Tayside AHSP is, in relation to existing NHS and University structures. Ensure this clarity is interwoven within the communication plan (see Recommendation 4).



3. Capitalise on voices of success, to raise awareness.

The importance of publicity for Tayside AHSP is emphasised. Stakeholders urge capitalising on successes by developing the voice of 'champions' throughout partner organisations. This should be in conjunction with a well-structured communication plan to reach beyond current networks.

Recommendation 3: A formal system of 'innovation champions' should be put in place across core participating institutions.

Recommendation 4: A multi-modal communication plan should be developed and implemented promoting Tayside AHSP, and showcasing its successes.



4. Broaden focus to ensure inclusion.

Tayside AHSP is reliant on the knowledge and networks of a few individuals, putting its sustainability at risk. Attention should be paid to broadening networks beyond current core groups, for example across professions, and bringing in other organisations where there is a clear strategic fit.

Recommendation 5: A succession plan should be developed to ensure organisational knowledge is passed on, so maximise sustainability.

Recommendation 6: Tayside AHSP should formally review its current networks and consider expanding cross-organisational and cross-professional representation within their core groups, where resources allow.



5. It is time for more substantive outcomes.

Notwithstanding a consensus that Tayside AHSP is early in its evolution, stakeholders called for concrete and demonstrable outcomes moving forward. We give case-study examples of activities already undertaken. Economic and patient outcome impacts should be given priority in the coming years.

Recommendation 7: Future projects should have impact evaluation plans in-built (whether led by academic or NHS partners). Additionally, Tayside AHSP should review current projects and prospectively plan for appraising outcomes.



6. Local focus with national relevance.

The innovation space in Scotland is commonly seen as a 'cluttered landscape'. While primarily retaining a local-value focus, Tayside AHSP should confidently mobilise their experiences to contribute to national-level policy and planning.

Recommendation 8: Representatives of Tayside AHSP should be ready to share their experiences and contribute to national-level planning.

Recommendation 9: Tayside AHSP should support attendance and contribution at healthcare related innovation events, growing a culture of grass-roots innovation.

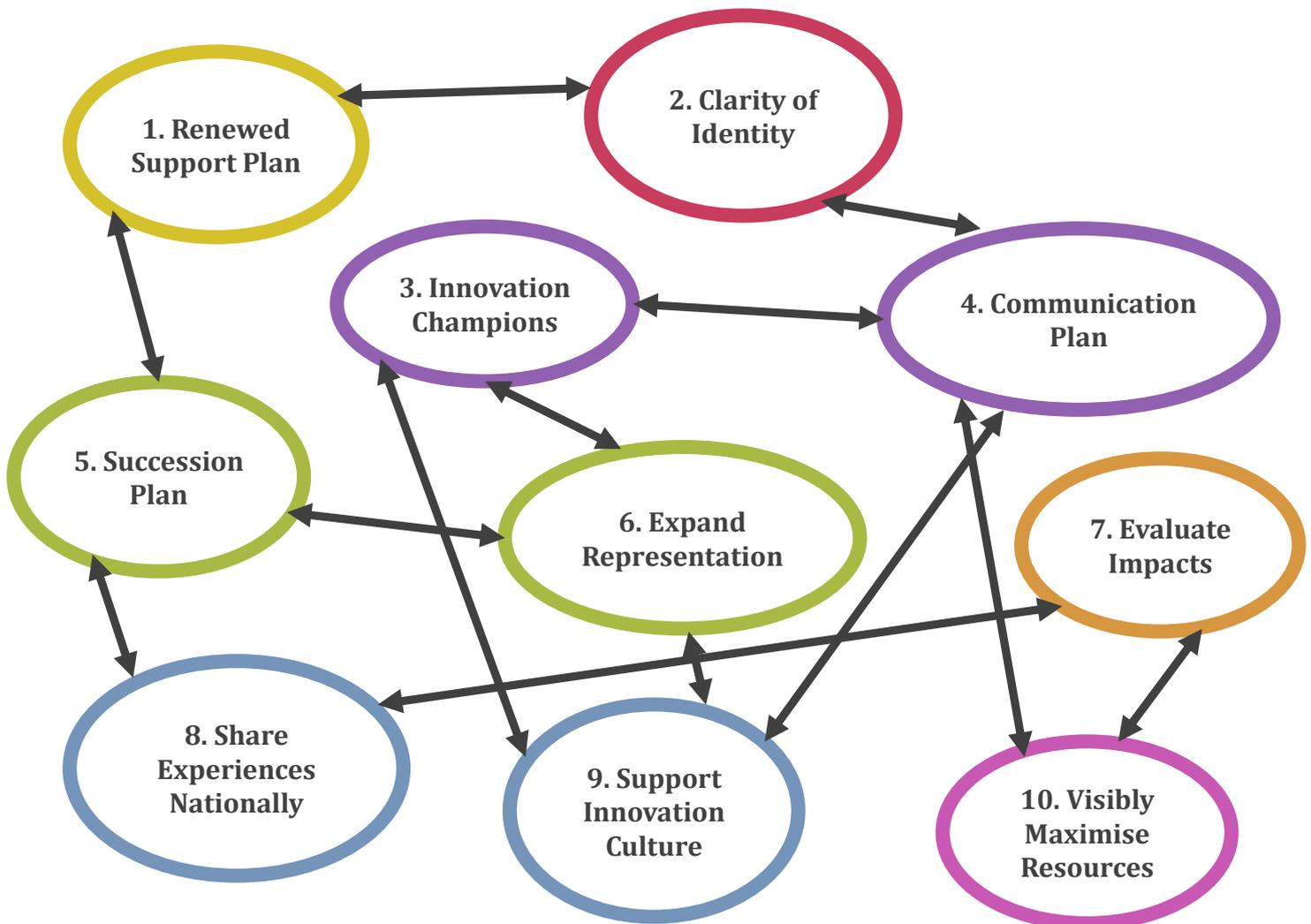


7. Attention to sustainability: resources required.

Whilst the running costs of Tayside AHSP have been low, some risk is perceived to the sustainability of this resource. A persuasive narrative around the AHSP is needed to demonstrate its value as a lever for external funding and optimal resource-use.

Recommendation 10: Tayside AHSP must work on delivery of the recommendations above in order to develop a narrative that visibly leverages funds and maximises resources.

The ten recommendations reflect best courses of action for the AHSP, acknowledging that limitations to funding and resource will persist. They are summarised in the diagram below, in which arrows are drawn to suggest close linkages:



2. Introduction

The Academic Health Sciences Partnership in Tayside (referred to in this report as Tayside AHSP or AHSP) is an example of an Academic Health Sciences Centre (AHSC). These centres promote a strong academic/healthcare provider/industry partnership that drives synergy and integration in research, innovation, service improvement and education and training of health professionals. Their aim is to achieve better health outcomes, and enhance job and wealth creation.

Key to the success of an AHSC is the cultivation of innovation and its adoption into healthcare practice that would not otherwise be achieved – the core added value of an AHSC. It should provide a “test-bed”, outside the primary clinical and academic functions of its partners, where all kinds of innovation opportunities can be explored, developed, tested and evaluated. Importantly an AHSC must be positioned such that it does not become an

unnecessary third party or additional bureaucracy that encroaches on the responsibilities and ambitions of existing structures within partner institutions, or stifle other possibilities for change.

Instead AHSCs should remain part of the fabric of existing collaborating institutions, operating in pursuit of their visions and add value by driving change from within. An AHSC should not therefore be associated with substantial additional direct cost, but realignment of existing resource so as to nurture innovation and continual renewal within the health and social care sectors.

There is evidence from England⁽¹⁾ and elsewhere of the effectiveness of AHSCs and broader networks. For example, the recent NHS Innovation Accelerator Programme (NIA) in England is designed to facilitate faster and greater adoption of innovation by the NHS. A recent

impact evaluation⁽²⁾ of the NIA programme found success factors that influence current; and future innovation uptake included: providing access to real world insights and skilled support; training; peer support building networks and partnerships; and creating and using connections with key influencers among clinicians, academics, patients and purchasers. The clinical and economic benefits, across a range of outcomes, were substantial.

Unique to Scotland, the Tayside AHSP was first set up as a pilot by modest one-off funding from the Scottish Government Health Department in 2014. It is a core collaboration between NHS Tayside and the University of Dundee that seeks to work together with other academic institutions, health and social care, commercial and other external partners to enable innovation and its uptake into the health and social care system.

Tayside AHSP: Timeline to end of 2018.

2014

- AHSP founded May 2014 with MoU between NHST and Dundee University.
- Pump-priming fund from Scottish Government (£200k).

2015

- Three workstreams: Education & Lifelong Learning, Quality Improvement & Safety, and Research.
- 5-year Strategic Plan, featuring mission, identifying opportunities, strengths and challenges.
- Initial plan to secure AHSP within Tayside, other partnerships in due course.

2016

- AHSP helped to win research funding of £600k in first two years, driven by focus on surgical training.
- Workstream-groups model replaced by 'executive lead' model, with clusters and project-led focus.
- Paper on achievements and developments of AHSP submitted to CSO and CMO.
- Pump-priming fund spent.

2017

- Project-driven structure judged successful.
- Concerns about high-level representation and embeddedness of AHSP within NHST and University governance structures.
- 8 areas prioritised : AHSP concept/brand, research, education, quality improvement, informatics, industry partnerships, design and innovation, internationalisation.

2018

- Strategy revised to prioritise biomedical cluster, re-emphasise innovation agenda.
- New 4-cluster strategy - biomedical, design & innovation, quality improvement, informatics.
- University of Dundee and NHST continue support for AHSP (£20k each p/a).
- AHSP structure altered to remove executive leads.
- MoU replaced with Strategic Partnership Agreement (SPA).
- Commercial Director role considered, rejected.
- Tay Cities Deal announced.
- AHSP remains key to collaborative vision for NHST and University of Dundee.
- Qualitative evaluation report commissioned.

3: Purpose and Approach

The aim of this evaluation is to qualitatively explore the perceived value, successes and challenges of setting up and implementing the Tayside AHSP. This evaluation will potentially influence the future direction of the Health Innovation Network in Scotland.

The research has sought to:

- Explore how the Tayside AHSP has worked to enable and facilitate innovation within the Scottish Health and Social Care environment;
- Identify the perceived outcomes of the Tayside AHSP;
- Explore the perceived successes and challenges of the Tayside AHSP to date.

The approach taken.

A qualitative approach enabled in-depth scrutiny of the experiences of stakeholders who have been involved in setting up and implementing the Tayside AHSP. A multi-faceted approach was undertaken (see Appendix for more detail) which included:

- Documentary analysis of publicly available and internal documents relevant to the AHSP since inception;
- Thirty-seven semi-structured interviews with stakeholders including internal partners (e.g. University of Dundee and NHS Tayside) and external partners (e.g. industry representatives, Public Body representatives).
- Observation of meetings between AHSP stakeholders and of healthcare innovation-related corporate events.

The analysis we present in this report is derived from these three datasets. The interviews proved to be a very rich source of information as participants were generous with their time and thoughts, therefore our findings are principally drawn from the interview data. We have made liberal use of interview excerpts to ensure that stakeholder voices are heard. From our data we developed three case studies that showcase the work of the Tayside AHSP in its first four years. These are presented intermittently throughout the analysis section and include data from all three sets.

The 7 'key findings' are colour coded (see p4-5). We have used these colour codes to highlight correspondence between key findings and quotes used in the text. Quotations that illustrate findings especially well are emphasised in boxes that also follow the colour code.

4. What Stakeholders Say.

What is the Tayside AHSP?

Stakeholders all held a common understanding of Tayside AHSP as a body that connects the three large institutions of healthcare, academia and industry in order to drive innovation. Concerning the existence of AHSP as an 'entity', there were subtle variations of understanding of what AHSP is and could be. All of these were reflected upon in a spirit of underlying support for the AHSP principle – that is, even those who raised problems with AHSP in its current form, agreed upon the basic rationale for having a Tayside AHSP.

“a brilliant idea of getting university and NHS together, creating an office, creating a place where you could genuinely bring those two big organisations together” (NHS, 20)

“the university and the NHS already work together. In fact, I was previously [involved with the] research and innovation services office and worked closely with the NHS, so a kind of early question was, we work together anyway. It's how can you just do more of it?” (University, 3)

Stakeholders used metaphors to explain aspects of what they saw the AHSP as offering. As well as being an 'engine' (University, 17), the AHSP was seen as a 'conduit' (Industry, 9, 37) for productive interactions, a 'forum' for 'conversations and opportunities for discussion' (NHS, 35), a 'dating agency between the NHS and the university' and depository for funding sources (NHS, 34), an 'enabling and facilitating entity' (University, 25), a 'broker' for relationships and contacts (Industry 5, 9, University, 23), and the 'glue or the connector' to make collaboration possible that would otherwise not be (Public body, 12). Spatial metaphors were common, to define the AHSP as a space for connecting, an in-between space, and a space to think differently.

The role of the AHSP in providing space for collaborative working is not simple or straightforward, but difficult in ways acknowledged by stakeholders.

The idea of 'translation' gestures to the skilled nature of the AHSP's work:

“in a sense, translating between the two differences about research and healthcare provision and bringing that together in one place.” (NHS, 35)

“they're a translator ... to reinterpret what some of the partners were meaning into something that was more cohesive” (Public Body, 12)

Stakeholders were aware that the Tayside AHSP is modelled after the Academic Health Science Networks (AHSNs) in England, which were generally held in high regard.

“there are quite a few things that are being done down south, so some of the electronic pharmacy prescribing, we're trying to emulate something very similar here. We should be picking those [innovations] up and doing them.” (NHS 10)

“I'm aware of those [AHSNs], I think they are successful in places but I don't think we necessarily understand the success.” (Public body, 19)

Among academic and health respondents, the AHSNs were seen as a success story, and a good model for Tayside AHSP to follow. It was also often noted that in comparison with the well-funded AHSNs, AHSP had to date been running on restricted resources.

“of course [AHSNs are] fantastic, they’ve had 20 times the level of investment, and six/seven years to show impact...whilst there was verbal buy-in from many of the leaders and a lot of energetic buy-in, the fiscal buy-in in terms of supporting was very low...[AHSP has] primarily relied on in-kind contributions” (NHS, 2).

“partnerships down south... they’re awash with cash and they’re appointing half a million to go and look at this. And I’m sitting thinking, oh, my God. In the north...the difference we’d make if we could, would be phenomenal.”
(NHS, 10)

Tayside AHSP in the local context

The two main organisations involved locally (NHS Tayside and University of Dundee) were said to have a worldwide reputation for excellence in addressing challenging health problems:

“NHS Tayside and the University of Dundee have a tremendous history of linking up and doing healthcare-related (work ...) with all of these data sources that we work with a lot. So there has always been this tremendous kind of relationship, and the AHSP seems to sort of rebadge that”.
(University, 13)

Thus, the AHSP was seen as an ideal conduit for collaboration and bringing in industry partners, providing added value.

“...would we have those relationships with the university, do you need that middle function of AHSP to support that? ...

“they [AHSP] bring that, the external influence and the ability to find these other opportunities and other ways of doing things, and potential collaborations with companies that I’m not sure we would have found in our individual institutes...”

“[Having] the structure [of AHSP] gives it a bit more formality and a bit more clarity of why we’re trying to do it.”
(NHS, 35)

“relationships that weren’t happening before, are happening now, that are pertinent to the longer term objectives of the major stakeholders involved...”

“that, sort of, ability to see partnerships in a positive light, and that the partnerships of value are ones in which actually, the participants bring different perspectives, different skills and different resources to the table, otherwise you’re just competitors.”
(University, 17)

The scale of the key partners within the AHSP (NHS Tayside and University of Dundee) was thought to be manageable in their ability to facilitate working relationships and bring together different groups. Additionally, having the medical school well embedded in the NHS context (i.e. Ninewells Hospital) was seen to facilitate collaboration in innovation. Stakeholders perceived cross-organisational senior involvement across projects as a particular facilitator of the work of AHSP.

“I think it’s been long overdue, otherwise we would have been just going on as the NHS and the university in the same building...this hospital was revolutionary in the 1970s, it was the first place that a medical school and the hospital all came together, but we haven’t really capitalised on that benefit enough...and I see the AHSP as the open door....” (NHS, 20)

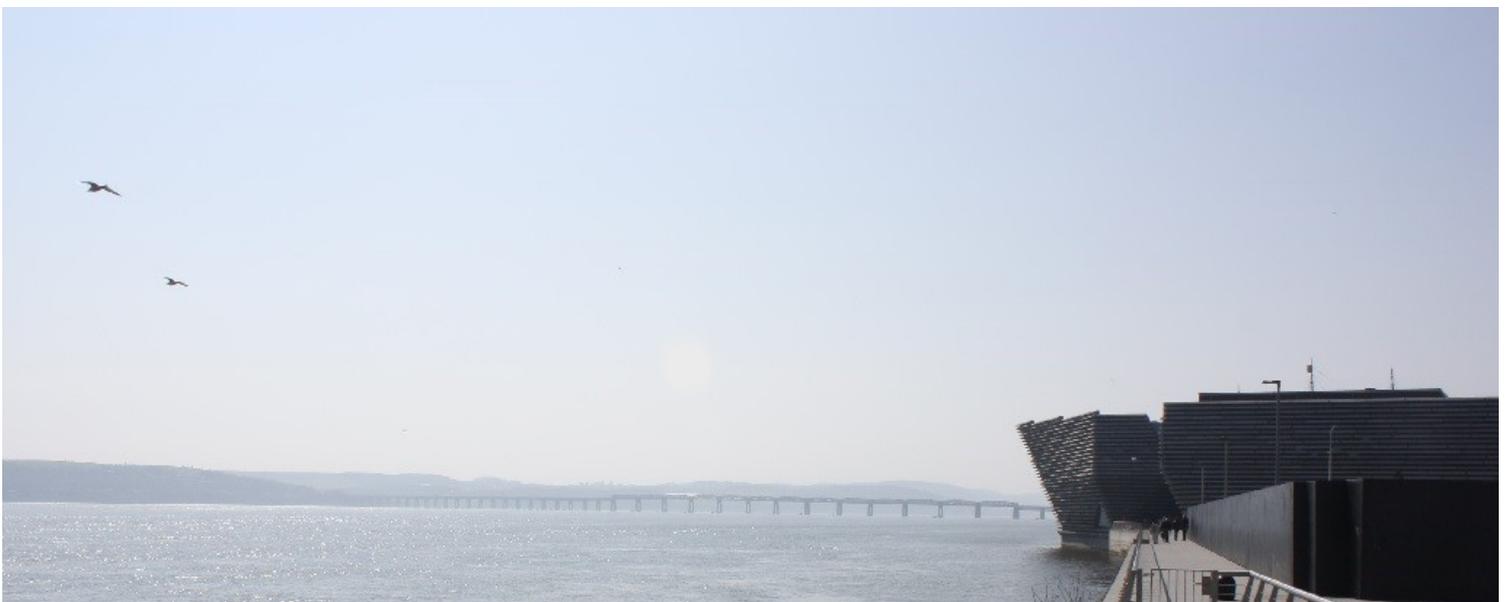
The diversity of expertise in Dundee (for example, medical technology, creative industries, art and design, gaming industry) was perceived as a facilitator for collaborative innovation. The AHSP was upheld also as a way to link more broadly with local employment and training institutions, for example, through vocational pathways, developing support infrastructures and highlighting the ‘behind the scenes work’ that non-frontline clinicians and support staff do:

“When I think about the work I do, in the last two or three days I’ve been able to, within five or ten minutes, be collaborating with designers, with engineers, with computer science and meeting with you today, and I can physically do that with ease in and around the place” (NHS, 20)

“it’s all about just having the right conversations, isn’t it, and making a compelling case for why other institutions would want to engage and see resulting benefits...how are we then building up the knowledge from our schools, our colleges and our universities about influencing our curriculum, you know; how are we then increasing the engagement between industry and our education system – I think [Tayside AHSP] could be one of the key connectors of all of that.” (University, 23)

Dundee, having benefited from significant recent investment, was seen as an attractive prospect for further development and growth. Some mentioned the V&A as symbolic of optimism and energy around Dundee, indicative of a significant upturn in the city’s profile and potential.

Additionally, grant bodies said to be looking for institutional clusters that work well together were seen as a facilitator for the AHSP model.



Case Study 1: Medtronic Strategic Partnership

Tayside AHSP has facilitated a strategic partnership with Medtronic, the world's largest medical technology company, with the aim 'to promote high-quality education, training, product development and transformative patient care through project collaboration and joint strategic planning.'⁽³⁾

An initial Strategic Partnership Agreement (2015) formalised previous connections between Medtronic and the medical school at Dundee, and identified objectives around themes of multi-professional training, simulation-based education, knowledge exchange, funding leverage, public engagement and collaboration with other Scottish stakeholders. This was updated in 2018 for three further years, adding objectives around international and cross-disciplinary collaborations for innovation.

While Medtronic's global reach to market was attractive for the Dundee institutions, stakeholders noted facilities in place at Dundee as having appeal to Medtronic: the Cuschieri surgical skills centre at Ninewells; and the possibilities afforded by working with soft-embalmed Thiel cadavers, which behave in a realistic manner beneficial for surgical training.

"(our) strategic partnership with Medtronic... So that's probably the biggest success, if you like, in terms of attracting people... And we've been working with Medtronic for four or five years and there have been lots offshoots from that"

(University stakeholder)

A stakeholder connected to Medtronic spoke of their determination to move from a transactional to partnership model of working, which found a successful channel in Dundee:

"within the UK there's plenty of places where you can find smart people and there's also plenty of places easy to do business with. There aren't very many places where you get the two of them together and this is one of them."

(Industry)

They explained the positive basis of partnership:

"it comes down to trust and the fact that we've built a culture where we work together and we are quite content to talk to each other as equals."

Encouraged by the recent acquisition of a medical robot, they foresaw the partnership continuing to flourish:

"we see ourselves as being highly invested and involved in growing the med-tech cluster, working with the incubators and also the expansion of the training facility that we already run, to make it bigger."

From an AHSP point of view, the relationship with Medtronic is a source of confidence and encouragement:

"the very positive aspects of it, are the external collaborators...we have Medtronic as a strategic partner saying that they see [in us] a truly single point of contact between the university and NHS Tayside and have remarked that they see it as one of the strongest in the UK and one of the most effective that they deal with."

(University)



The new surgical robot at Ninewells ⁽⁶⁾. It was in Dundee that Sir Albert Cuschieri's research team pioneered minimally-invasive 'keyhole' surgery techniques.

The Tayside AHSP in the Scottish context

The Scottish context is widely seen as significant for the AHSP, mostly for the positive. Many reported the potential for collaborative success in Scotland as a place where cross-organisational working was said to happen naturally. Scotland was characterised as a *'wonderful untapped resource'* (University, 2), a *'big village'* in which partnership working is the norm, and an *'ideal place'* to come up with innovative solutions (Public Body, 21). Some of this was due to Scotland's small size, with a collaborative culture already in place, but requiring entities like AHSP to capitalise on opportunity.

Others pointed to geographic variability within Scotland, that it has remote regions as well as urban centres, and consequently innovations shown to work here would work anywhere. Consensus emerged around the need for a national strategy – to which AHSP would be well-placed to contribute positively – and space for local strategy and flavour within it. Innovation should be driven *'to national priorities but with regional delivery model type approach'* (University, 23), or there should be a *'pan-Scotland approach, but with subsidiarity, to deliver innovation locally'* (NHS, 28).

Stakeholders expressed a growing view of innovation as no longer confined to the academy or industry, and as something that can happen within the NHS context. However, it was perceived that NHS staff struggle to find somewhere to take their

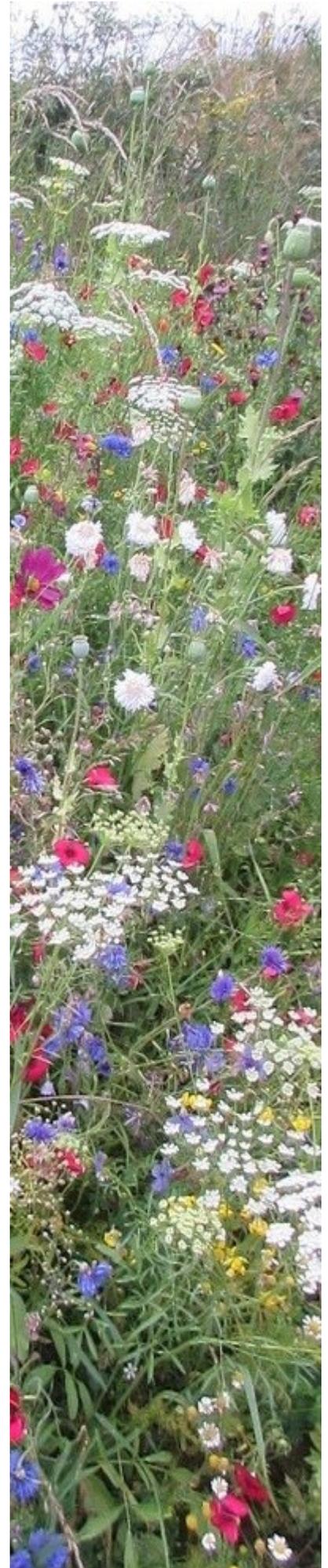
ideas, that there wasn't a system to support product and service development. AHSP was seen to potentially provide that experienced 'place' to go.

"If you look inside a hospital, doctors, nurses, cleaners, everyone has a new idea to bring forward, but they don't know who to talk to. And even if they can talk to somebody who is busy with his own business, so he says, oh, yeah, yeah, yeah, that's okay, to just move it. But if they know there is somebody who will at least listen to them and listen to their ideas, and actually document it and say, well, there is something we can do here, or I can guide you through other pathways." (NHS, 27)

Timing was seen to be right for investing in innovation. The innovation space was known to be high on the agenda for the involved organisations as well as being a government priority:

"in health and social care and wellbeing generally we face major challenges in this country and the idea of having an academic and health science partnership bringing together various disciplines to think about how we respond to the challenges to sponsor and encourage innovation and come up with solutions that, you know, are relevant – I thought that was very, very exciting...."

"I always talk about the golden thread – you take the golden thread from the Scottish Government's priorities, the national performance framework, the priorities for each part of the public sector individually and together – that all encourages collaboration." (Public Body, 21)



The necessity to work with industry to find innovative game-changing solutions was clear, but the role of University in channelling innovations into practice, perhaps less obviously important to some of our contributors:

“because research will happen in medical schools anyway, the question is when you see a very innovative healthcare system that is highly driven by good quality technology that is early and they are early adopters of technology, that the healthcare of the population has improved as a consequence of this industry [attraction], this becomes a good place to come and build your factories, develop these devices because you know you get into the healthcare system and then you’re accessed to market” (NHS, 31)

Praise for the individuals involved

Many respondents identified and attributed successes of the Tayside AHSP to individuals centrally involved in its work. The individuals concerned were seen to be drivers of innovation through a willingness to be welcoming and engage with new ideas, and to perturb the norm:

“I think it’s quite easy because [individual names] are quite energetic, quite focused, quite open, quite willing, always happy to engage, always happy to challenge, to test”

(Public Body, 8)

The core AHSP team were recognised as having local knowledge and cross-institutional credibility. This linked to a perception that they were well-networked and able to connect people from different organisations:

“the service director is well networked, he has been talking to lots of companies” (University, 7)

‘...what they were bringing to the table, it wasn’t hard cash. It was access to networks, opening doors to expertise ...’

(Public Body, 12).

These individual attributes contributed to the perception that the AHSP was able to open doors that would normally be difficult to access.

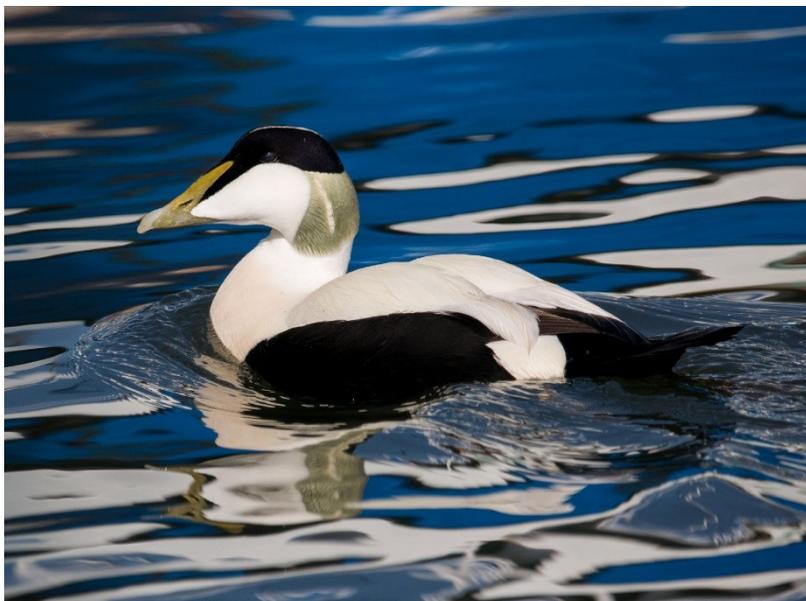
“AHSP probably just exposes you to more of these types of companies, exposes you to what’s out there that I wasn’t aware of before because I didn’t really have the time to go looking.”

(NHS, 34)

Finally, the core AHSP team were commended for their drive, resilience and tenacity over the first four years of the implementation of AHSP.

“we did that [meeting] at the end of their long 12-hour shift (...) how they were able to think at that level at that time is incredible.”

(University, 29)



Eider ducks, resident to Scotland’s coast, are known for their co-operative behaviour.

Perceived value of the AHSP.

The Tayside AHSP was perceived to give people somewhere to turn to with their ideas and prototypes for development: a first port of call to explore synergies between the different academic schools within the University of Dundee and the NHS. AHSP was recognised for an ability to get the right people round the table and create new relationships.

“that’s where the group like AHSP is really important, where AHSP can collect a number of experts and put them together and say, someone came with this problem, can you see if you can solve it or you can guide the person how to solve the problem?” (NHS, 27)

AHSP’s neutrality (i.e. not sitting within one specific organisation) was seen to be helpful to bring about change, mediate and facilitate shared decision making between different parties, without there being a dominant partner. Additionally, AHSP was felt to have a strategic overview across organisations:

“...we will listen, we will often say, we just steer and direct. And I would say 70 to 80 per cent of our job is just listening and directing.” (NHS, 2)

“each of the partners was coming at it from a slightly different angle; and it was actually [AHSP] that was trying to synthesise and pull together and actually did a lot of work on the cohesiveness of the project”
(Public Body, 12)

The AHSP was recognised for abilities to transmit ideas and lessons learned between organisations, creating a common language. Furthermore, AHSP was known to have particular capacity for reaching out beyond NHS Tayside and the University of Dundee to other organisations (such as Colleges, Councils etc).

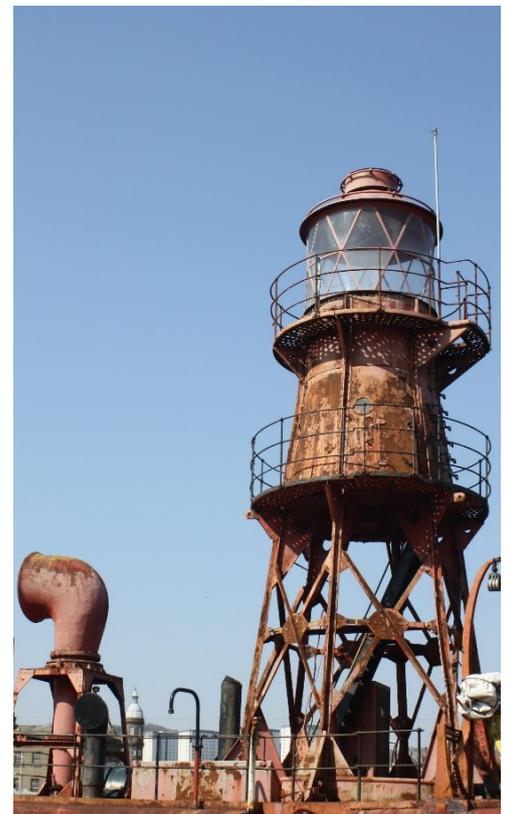
“We could pitch up and say that you want to buy this blue, shiny square. This blue, shiny square is what we sell and it’s absolutely the best thing in the market. Actually, what you need is a purple triangle but we won’t know that it’s a purple triangle that’s required to solve that particular problem unless we can work in collaborative partnership, understand the problem.”
(Industry, 32)

“I think it’s trying to, I guess, maximise bang for your buck in terms of bringing those different stakeholders together adds value to what you can actually provide as a service. And I think that’s what they’re trying to do, so bringing together industry, academics and practitioners to actually improve”. (University, 24)

Interviewees remarked that the successes developed over the first four years were generating further work, through creating ‘ambassadors’ who were sharing their successes and bringing in others, thus the network was growing. AHSP was seen to encourage these ‘champions’ and to create a ‘coalition of the willing’.

“it’s all about getting together the coalition of the willing, right, so I play a role (...) where I can see if I put colleagues X Y and Z together and I see a funding opportunity I say, look you know, why don’t you think about working together on this, and we’ll provide some assistance, and so on”. (University, 25)

“you cannot enter into partnerships without having the view that you are serving the interests of your partner, as well as yourself, otherwise ultimately that partnership will founder, and the basis of the synergies will disappear. So, primarily we need to ensure that our interests are looked after, but one of the ways they are looked after, is by ensuring that our partners in the relationship are also satisfied with it.” (University, 17)



AHSP can help to co-create new vantage points and illuminate difficult problems.

The challenge to AHSP of demonstrating value as a condition for winning support was expressed at different levels, most prominently from stakeholders at higher levels within organisations. The need to demonstrate more concrete outcomes was expressed.

“people say, well, where’s the evidence and let’s evaluate it and what do we need to change, who do we need to train to use it, it’s the system change. And that’s the real challenge in this space. And I don’t see that [AHSP] have done that...” (Public Body, 6)

“[AHSN representative said] here is five ideas that we did, and here’s one that ended up as this artefact that now does things differently. And, she was saying, you need that because otherwise why would people believe it. And, I think our AHSP hasn’t got to that stage yet. And, it could be a process thing; it doesn’t have to be an object.” (University, 36)

This was sometimes perceived to be a challenge to the Tayside AHSP’s credibility as an organisation.

“there’s a relative lack of solid outcomes from (AHSP), across the piece, if you look at how much time it’s been running...the tale that can be told to government and other stakeholders, is a very, very positive one, and people really get the idea, they like to hear about it, it has real kind of resonance out there. But, sometimes the delivery underneath isn’t as solid...unless you actually start to deliver some hard outputs at some point it stops resonating.” (University 7)

“without the good storytelling around how AHSP is delivering tangible benefits locally and potentially nationally, then there will be less conviction that it’s anything other than a conversation forum.”

(Public Body 19)

In terms of the specific structuring of the AHSP there was less clarity, and some anxiety. How the AHSP should best proceed towards fulfilment of its role was a concern for some.

“the decision was to divide into clusters focused on particular ... specialisms or areas of interest. So the QI, the quality improvement cluster, came out of that. I’m not sure what the plan is for that cluster moving forward”

(University, 24)

“it’s almost reinvented itself several times, and certain directions have been gone along, and then it’s come back and gone in slightly different ones. If any kind of organisational structure is reinventing itself several times, particularly around the governance, it suggests it’s maybe not quite as clear as it should be, in terms of future direction and what it’s trying to achieve.”

(University 7)

Nevertheless, there was a common feeling that the current cluster-led model was good for the workings of AHSP. Respondents emphasised the need for a clearer purposive narrative that would help to present the AHSP to other (potential) stakeholders.

“[People] are just so desperate to get innovation into this healthcare system to demonstrate value, that they forget that all of those things if you don’t underpin it with those fundamentals [of process], then you end up with a very half-baked system and nine out of ten times your things will end up in the museum of failure as opposed to being something that’s widely used and accepted in the NHS.” (NHS, 31)

Some noted the continuity of the AHSP with what had gone before, but were keen to assert what the AHSP had added.

“one partner would make a proposal which the other would react to but there was no sense, really, of a joint vision for how they would develop services, research, educational opportunities, innovation jointly. ...[and] by having a more formal partnership, one could exploit the strengths of both sides to benefit the NHS in terms of driving innovation and perhaps more focus on research and quality than there might otherwise have been”. (NHS 28)

In bringing this added value, all of our respondents, even if critical of aspects of the AHSP as currently instituted, were at root supportive of the need and appropriateness of having a:

“single point of entry that enables access and introductions to be made very quickly and very easily and also not to get bogged down with paperwork and process, (...) the AHSP model has not only filled that gap but I think that they’ve done some very good things.” (Industry, 5)

Case Study 2: Tay Cities Deal

In November 2018 an award of £25 million was announced by Scottish Government to support the growth of the Tayside biomedical cluster. Stakeholders from the University, NHS Tayside, Dundee & Angus College, global and local industry were involved in the successful bid, which will bring direct employment, and considerable research and investment income to the region (projecting a RoI of £2.81/£1⁽⁴⁾).

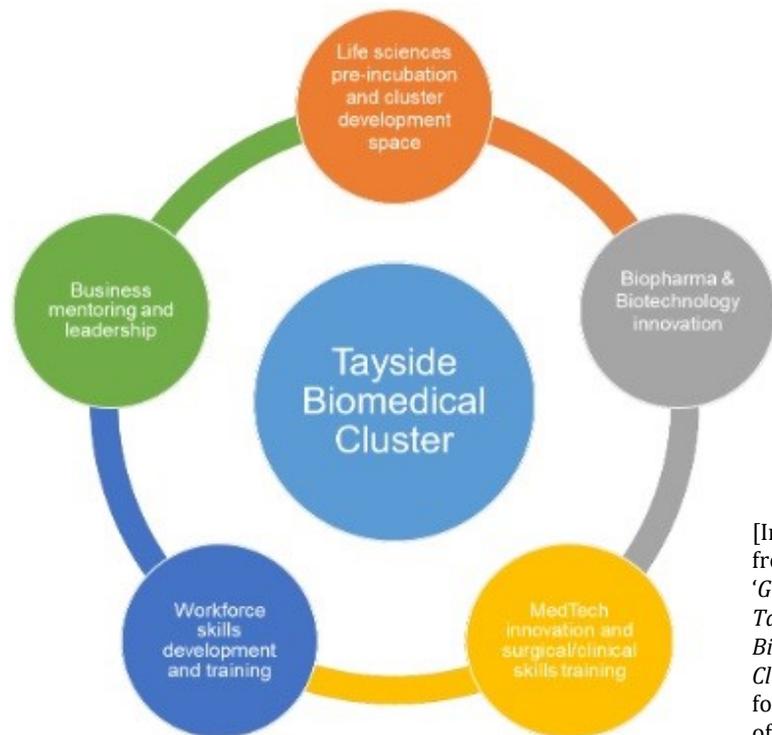
The proposal for growing the Tayside biomedical cluster leveraged established institutions and collaborations in Dundee (especially the University of Dundee/MedTech collaborations). It contained endorsements from key international stakeholders in academia, industry, and government, supporting 5 sets of activities (see figure, right).

Respondents attributed the success in part to the AHSP, but were circumspect in describing the role of AHSP in bringing the bid to fruition.

“we shouldn’t under-estimate that one around bringing the place, the tools, the frameworks, the ways of operating, the kind of underlying policy framework for this sort of stuff to work. So, I think that’s quite a, it would be something that would be easy to overlook, that really the NHS did not have the capacity or the knowhow to do that, but [the AHSP] have done that willingly,

...because it’s a necessary part of getting the thing as a whole off the ground. [It] does provide a baseline infrastructure, in terms of the way of doing things, that can serve them well into the future.”
(NHS)

the people associated with AHSP put work into that and it was successful in its outcome. Would it have happened without AHSP? 70/30 yes. But I think it’s genuinely great.” (University)



[Image taken from Ekos, ‘Growing the Tayside Biomedical Cluster’ Report for University of Dundee, 2017]

“...there was some reticence around going into that whole Tay Cities Deal, the Academic Health Science Partnership took that leap and did it. And I think that speaks volumes for, you know, the desire to really make a difference.”
(University)

“Would they have done this anyway by just talking to people in the medical school? Yes, they would ... (but) in actuality I do think

Perhaps more importantly than having provided a forum for producing the bid, AHSP is expected to remain active in facilitating the delivery of collaborative working on the basis of the award, particularly at the interface with industry. A statement from AHSP noted:

‘The Biomedical Cluster will offer an innovation platform to rapidly take new technologies to a clinical setting by attracting inward large commercial partners as well as new companies to Tayside.’ ⁽⁵⁾

Tayside AHSP and relationship building

The relationships that the Tayside AHSP were perceived to have developed were seen as a vital aspect of facilitating its work. Stakeholders commented positively on the AHSP's ethos of focusing on the common good and seeing partnership in a positive light. AHSP was seen to connect people in a way that benefitted each party, enabling practitioners, academics and industry to work hand in hand through creating and building trust and partnership:

"[Some] think of academics as being long-winded and taking too long to get results, and I don't think it has to be like that. I think we could work together and be quite innovative in our methods of development... things do need to change in order for outcomes to improve, and that's where I think working practitioners and academics go hand-in-hand, that's where you get the biggest bang for your buck."
(University, 24)

However, challenges were perceived to arise in winning the support of professionals within both the University and NHS. Often this was identified as being

due to a lack of knowledge and understanding of what AHSP is intended to do, implicating a call for AHSP to advertise their offer more with those beyond their immediate network.

"AHSP probably perhaps needs to be recognised more, and I think those that know about AHSP have got good things to say... So maybe there's an opportunity there for getting out and flying the flag a bit more, telling people what they're trying to do, what they can do, and how they could help the academics." (University, 16)

"It's still, for most people, a four letter acronym and that's it. A lot of people might not even be aware of it as well. So I think the challenge is to communicate with the different groups of stakeholders outwith that core that it's had so far and to get an understanding of what this means."
(NHS, 1)

Some perceived a need for AHSP to work on building trust among professionals with regards to their activities, in particular how relationships with industry are built and function. There was desire to be reassured that any innovation would have direct benefit to the professionals and workplaces involved.

"...your department could create something or do something that generates savings for the NHS or brings in money, but if that's perceived just to disappear in the big NHS pot, that's disincentivising... If you didn't see the direct benefit of that coming back to your own context and your own department, then that can be quite off-putting."
(University, 29)

"I think if it's okay to incentivise small businesses outside of hospital, why is it not okay to incentivise individuals working within the hospital? So it does feel like if you have an idea whilst an employee of the NHS, that's not your idea, that's the NHS's idea. And that feels wrong. (AHSP) has to be something that actually incentivises innovative thinking within the organisation." (NHS, 34)

These quotes suggest that engaging professional staff in the collaborative activities of AHSP is not just a matter of providing opportunities to think creatively, but assuring ownership of ideas, connection of input to output, and addressing other professional concerns.



AHSP brings added value by connecting between disparate actors.

The future for Tayside AHSP

Stakeholders expressed a variety of ways in which Tayside AHSP could and should move forward. Responses to questions about next steps and future development of the AHSP were predominantly positive, emphasising continuity rather than any need for disruption or change.

“there’s a really good concept there, there is a real opportunity. I think it’s probably been through a couple of little false starts, we need to be careful of over-selling, and we need to have emerging projects, let’s get them supported, let’s get them with clear plans, and deliver against them, and get some outcomes and outputs.”
(University, 7)

“where will it be in five, ten, fifteen years? ...after four [years] has been a tremendous journey, but all the signs are still very positive that [the AHSP] will keep going in that direction.” (Industry, 5).

Additionally, stakeholders perceived that more projects would come about in the next few years which would start to demonstrate value and impact.

“AHSP’s been a great idea, the principle’s right, it’s been through a journey, and it’s now... I think it’s a sort of take off period where over the next few years there’ll be some wonderful stuff that will come through.” (NHS, 20)

One prominently articulated risk to the continuity of Tayside AHSP was the perception that the knowledge base gained resided ‘in a few individuals’ brains’ (University, 13), with potential for momentum loss and over-reliance on the energy and enthusiasm of a few. This would limit sustainability:

“it’s vulnerable to those individuals moving on, and I think part of that rationale for actually trying to get some breadth in it... is because [they don’t] want to see it die, [they want] to have enough people championing it, that it’s going to create momentum of its own.”
(University, 17)

“whoever’s director or co-directors or whatever of any organisation like that, whether the entity succeeds or fails is actually dependent on their vision and energy...they need to make sure that everything doesn’t just fall over when they’re not there, I mean, the best leaders are the ones who makes themselves to some extent redundant.” (University, 25)



The AHSP must continue to face outwards and maintain a clear space for innovative thinking in health and social care.



Stakeholders discussed whether AHSP might be (mis)taken to exist as an 'entity' aside from its parent institutions.

One way to counterbalance this risk was seen to be through expansion of networks, and through this, growth of the knowledge-base.

"as it matures and the knowledge-base of the individuals involved, the networking within all people who are involved in it will mature as well, and there'll be, much more linking up of ideas, people, companies, and things like that (...) we need more of these examples, and somehow network these examples together with new people." (University, 13)

Others expressed the importance of deliverables in order for AHSP to continue, including financial stability, completion of projects, ensuring clarity of vision, purpose and membership. Senior buy-in was an important factor to consider for continuity and further investment. It was perceived as a real risk to AHSP itself that it will not be adequately supported by the University and NHS Tayside in the future.

"it obviously has to wash its own face in terms of, you know, finance and hopefully earn a little bit that it can plough back into, you know, innovation and supporting it. Because there's nothing worse than people having a really good idea and then you go, sorry, but we've not got the money to do that, great idea but...they need to put their money where their mouth is and bring things in. And there's a reluctance to do that if nobody else is doing it, because every penny's a prisoner." (NHS, 10)

"what's the next step? Actually, it has to be to get a significant number of people, at different levels, but certainly in senior positions as well, convinced that the AHSP as a model, is something we need to invest in for the long term." (University, 17)

Stakeholders expressed concern that political support would not necessarily manifest fiscally, and that tight budgets at both NHS Tayside and University of Dundee would limit possibilities for allowing the AHSP to continue working towards its short-term (specific project and output) and longer-term (cultural transformation) goals.

"the NHS has so much inertia in it, it has to be struggling to just do the basics, let alone develop and change and grow" (University, 13)

"the will is there but the funding to actually kick-start it right into somewhere really positive isn't...the inability to convince NHS Tayside that if this is remaining a Tayside partnership, that investing in it, even though we have financial challenges, will actually address some of your financial problems...we just haven't had anyone with the vision to see that that's the right thing to do..." (NHS 10)

The issue of funding support is a relevant frame for other challenging issues that respondents raised.

"[NHS] people... don't have the band-width, they're not given the band-width. And people then wonder why things don't change fast enough." (University, 17)

Case Study 3: Clinical Academic Fellowships

Partly administered through the Tayside Medical Science Centre (TASC) at Ninewells and funded by the CSO, these awards support clinicians to spend a portion of their time (1 day per week) for 2 years on research and/or quality improvement activities. They were first awarded in 2016, and have supported projects in diverse fields including gastroenterology, respiratory medicine, psychology and midwifery. Future plans are to allocate 3 fellowships per year.

The scheme is a direct way of allowing clinicians opportunity to develop their ideas around research and service improvement, and so epitomises the role of Tayside AHSP in allowing boundary-crossing and innovative thinking with clinical relevance. Stakeholders welcomed this scheme:

“There are very few clinician academic fellowships or funding schemes available so it’s actually very difficult to get post-doctoral research experience whilst being paid in your clinical post.” (NHS)

This stakeholder said that Tayside AHSP was uniquely positioned to understand the demands they face in combining their clinical workload with the demands of a research project:

“the fact that there’s a relationship between the employing organisation and the university really facilitates access to the learning and scholarship side but also the NHS on the ground aspect of the work as well”

While praising the Tayside AHSP for support given when the practicalities of a research project were affected by

unforeseen complexities – ‘perhaps a level of support that I might not get in the more formal academic setting’ – there was raised a more general point of consideration in these kinds of schemes:

“one of the challenges [is] to find someone to take up one day a week of backfill. That’s quite difficult to employ to, one day, you know, because normally people want a full-time or a half-time job... I think possibly to clinch it a little bit more there might be something about liaising with the employers about how to support that research process and thinking about the position of the NHS managers.”

This illustrates once again the crucial role for AHSP in facilitating boundary-crossing work, mobilising insider knowledge of institutions on both sides of the boundary, and their respective needs.



A space for reflective practice: the research library at Ninewells Hospital

Positioning Tayside AHSP in the future, bigger picture

Often noted by stakeholders was the ‘cluttered landscape’ of Scottish health innovation enterprises. The Tayside AHSP was seen to have something of an opportunity to position itself in that context as a model to replicate.

“its challenge is fighting for existence amongst this cluttered healthcare innovation landscape in Scotland and trying to identify itself as a good model to adopt and to go forward with.”

(Public Body, 8)

“Scotland is a small enough country that it can’t afford to have too many independent AHSPs playing on the same field.”
(NHS 28)

This busy Scottish landscape was seen to have the potential to cause confusion in responsibility and a sense of competitiveness. Many respondents fundamentally saw AHSP as a collaborative and co-operative enterprise with the basic goal of improving health systems, and health for all; but AHSP also adheres to a market-driven ethos, adding to a scenery in which a competition principle is taken for granted.

“there’s been some other entities in the ecosystem that have probably seen AHSP as a competitor and not wanted AHSP to succeed...but that it then diminished their role and want to obviously still exist themselves...the sector’s so competitive that way, it is very political...the regions compete against each other”

(Public Body, 8)

“I think it would be unreasonable to say, oh yes, this is a great success, let’s follow it. I think it would be reasonable to say it’s shown that this can be done in Scotland, but there’s a lot more that needs doing...I think there is a widespread appreciation that we’ve got to do something in this space in Scotland... I think we do need to try and get some standardisation to make it intelligible to those that look in.”

(Public body, 6)

This paradox of competition versus collaboration was thought to have the potential to manifest between academic institutions as well.

“... where there was more value in coming together as one or two or three or more universities in the North ... And they just weren't sure how all that would work out, so they weren't not wanting to do it, they just couldn't quite yet see how they could remain competitive and partners.”

(NHS, 10)

It was therefore considered important for the Tayside AHSP to emphasise its uniqueness and the strengths of its model, and be clear on what its offering is (and is not). Additionally, stakeholders

called for a stronger vision for the AHSP to ease these tensions.

“... what it can and can’t deliver; I wouldn’t want to see AHSPs coming in and saying, right, we’ll do what [another NHS-based service] is doing because, [another NHS-based service] is already doing it so there’s no point in doing that, that’s duplication or ...displacement, it’s not actually creating anything new.”
(NHS, 1)

Whilst Tayside AHSP was seen to have important national relevance, stakeholders emphasised the need for local focus in any Scotland-wide roll out.

“...if there are some huge issues for us that there are innovative solutions for, why don't we marry up with Glasgow and Edinburgh to work together? So I think those can be truly pan-Scotland approaches but, at the same time, allow the flexibility of local nurturing and regional nurturing and innovation.”

(NHS, 2)

“In other areas in relation to, you know, the Highlands, for example, there’s a whole host of stuff going on up there. It would be really good to see some connectedness and some connectivity between those different areas to do interesting things together because they’ll get greater impact”.

(Industry, 32)

Senior support was again emphasised as important for placing AHSP on the national stage.

“if the AHSP thing is doing quite well and successfully here, maybe before it goes out on a national basis, they have to test the situation where there’s actually central support for AHSP, give it a bit more oomph and then you can see whether in two or three years it’s actually achieved a hell of a lot of more than it would have done if you just kept it on the low level locally funded.” (NHS, 26)

Appeal to diverse professions and partnering with other organisations.

Finally, some stakeholders foresaw a future of further partnering with other organisations, locally and regionally. The possibility of connecting productively with external partners was seen to depend on having a clear strategy within the AHSP, at the highest decision-making levels.

“creating a Northern AHSP with all the population that is in the northeast of Scotland, that might be good ...What you need is to have two strong organisations, two strong academic health sciences partnerships that collaborate when it is in mutual interest, focus on our strengths because otherwise you are trying to be all things to all people and you will be nothing to no one.”

(NHS 31)

A number of respondents emphasised that AHSP should strive to work beyond traditional success areas of drug discovery and life sciences and pursue other issues such as health and social care, to work with the design community in Dundee, and to ensure openness to ideas from non-medical health professionals.

“I have been surprised at how little awareness there is or consideration of research and evidence amongst the Allied Health Professionals [AHP]s ...it’s how you find those AHPs and how they access the support from AHSP if they don’t know what it is or who it is or if they’re worried about the hierarchy of going to the medics...it does make me think that for an AHP, can AHSP be a bit more approachable?” (University, 29)

“I do sometimes feel the biomedical science one is the one that people are most interested in because that’s the money-maker, that’s where business people are coming to. But I think that’s the least relevant to the problems facing the NHS.”

(NHS 34)



A healthy national picture for innovation strategy would include local and regional flexibility and variation.

5. Review of findings and recommendations.

AHSP as co-production.

Tayside AHSP is a co-production initiative: it brings people from different but connected social spheres to work together, generating valuable outputs that are otherwise impossible. Each of our key findings can be considered in terms of co-production.



1. Tayside AHSP is wanted and timely.

There is consensus across stakeholder groups that Tayside AHSP is a good thing. Tayside AHSP is seen as a valuable local mechanism for NHS, academia and industry collaboration. Stakeholders see Tayside AHSP as timely, in the context of local and national attention to innovation.

Recommendation 1:
A renewed plan for ongoing cross-institutional support for Tayside AHSP should be put in place .

No two stakeholders have quite the same perspective on the AHSP, indeed contrasts between viewpoints are the life-source of the AHSP. But all see the AHSP as offering an urgently-needed mechanism for productive collaboration.



2. An identity crisis should be averted

Clarity is called for as to the purpose and positioning of Tayside AHSP moving forward. The key to harmonising stakeholders' understandings is to ensure that all parties can see how the AHSP can help them work towards their respective targets.

Recommendation 2:
Develop full clarity around who and what the Tayside AHSP is. Once this clarity is achieved, ensure it is interwoven with the communication plan (see Recommendation 4).

In co-production there is a constant risk that stakeholders can drift apart in their understandings, lose trust in collaboration, and retreat into isolated working. Regular renewal and sharing of intentions and understandings is required to energise the AHSP. Open and effective communication between all parties involved with each other through the AHSP, is paramount. The AHSP should always be a facilitator, not an encroachment or a burden.



3. Capitalise on voices of success, to raise awareness

The importance of publicity for Tayside AHSP is emphasised. Stakeholders urge capitalising on successes by developing the voice of ‘champions’ throughout partner organisations. This should be in conjunction with a well-structured communication plan to reach beyond current networks.

Recommendation 3: A formal system of ‘innovation champions’ should be put in place across core participating institutions.

Recommendation 4: A multi-modal communication plan should be developed and implemented showcasing successes of Tayside AHSP and promoting what and who Tayside AHSP is.

The AHSP is a continuously moving community of people who are embedded within partner institutions. To continually invite involvement and participation, AHSP depends upon being recognised and known through positive communications.



4. Broaden focus to ensure inclusion

Tayside AHSP is reliant on the knowledge and networks of a few individuals, putting its sustainability at risk. Attention should be paid to broadening networks beyond current core groups, for example across professions, and including other organisations where there is a clear strategic fit.

Recommendation 5: A succession plan should be developed to ensure organisational knowledge is passed on to maximise sustainability.

Recommendation 6: Tayside AHSP should formally review its current networks and consider expanding cross-organisational and cross-professional representation within their core groups.

Understandably, the AHSP has seen some strategic narrowing of focus to support particular projects. But there is a real need also to secure the support of groups seen as peripheral. This will enable the AHSP to become better integrated across its parent institutions.



5. It is time for more substantive outcomes

Notwithstanding a consensus that Tayside AHSP is early in its evolution, stakeholders called for concrete and demonstrable outcomes moving forward. We give case-study examples of activities already undertaken. Economic and patient outcome impacts should be given priority in the coming years.

Recommendation 7: Future projects should have impact evaluation plans in-built. Additionally, Tayside AHSP should review current projects and prospectively plan for appraising outcomes.

The pervasive language of ‘impact’ expresses a need for the satisfaction of seeing outcomes delivered. Once the AHSP can show tangible outcomes that are co-owned by stakeholders, it will be a great justification of the work that has gone into the AHSP, and will likely do much to secure the AHSP as a valued Tayside institution. Channelling resources through the AHSP should become a well-established route to creating value.



6. Local focus with national relevance

The innovation space in Scotland is commonly seen as a 'cluttered landscape'. While primarily retaining a local-value focus, Tayside AHSP should confidently mobilise their experiences to contribute to national-level policy and planning.

Recommendation 8: Representatives of Tayside AHSP should be invited to share their experiences and contribute to any national-level planning.

Recommendation 9: Tayside AHSP should ensure attendance and contribution at national healthcare related innovation events.

Successful collaboration is always attached to local places, but has significance that connects with broader, national and international contexts. The AHSP must value the experience it has generated, and share it with others who are working towards collaborative goals elsewhere. A culture of innovative and progressive change can be created through collaboration.



7. Attention to sustainability: resources required

Whilst the running costs of Tayside AHSP have been low, some risk is perceived to the sustainability of this resource. A persuasive narrative around the AHSP is needed to demonstrate its value as a lever for external funding and optimal resource use.

Recommendation 10: Tayside AHSP must work on delivery of the recommendations above in order to develop a narrative that leverages funds.

The AHSP is affected by resource scarcity but also has the ability to mitigate for resource scarcity. Those involved with the AHSP should keep resource issues visible, and be bold in communicating the different kinds of value that the AHSP potentially generates.

AHSP exists at the boundary between large institutions. Boundary work is always demanding and complicated. Successfully linking between larger bodies is inherently difficult, but absolutely needed for the greater good of collaborative progress. Those involved with the Tayside AHSP must be encouraged by their achievements so far, and continue wherever possible to pursue collaborative engagement and creative exchange.

Notes

1. http://www.ahsnnetwork.com/wp-content/uploads/2017/06/AHSN-Network-Impact-Report-2017_Web_spreads.pdf
2. https://www.employment-studies.co.uk/system/files/resources/files/nia0318-NHS_Innovation_Accelerator_Evaluation.pdf
3. AHSP website: <http://www.ahspartnership.org.uk/ahsp/business/strategic-partnering-with-medtronic> (May 2019)
4. Ekos (2017). 'Growing the Tayside Biomedical Cluster'. Report for University of Dundee.
5. <https://www.lifesci.dundee.ac.uk/news/2018/nov/22/tay-cities-deal-%C2%A325m-investment-growing-tayside-biomedical-cluster> (May 2019)
6. Photograph taken from <https://www.dundee.ac.uk/news/2019/surgical-robot-signals-new-age-of-medical-training-in-scotland.php>

APPENDIX: Evaluation Methodology

Evaluation Design and research team

This evaluation utilised a qualitative approach to data gathering and analysis. This enabled in-depth scrutiny of the experiences of stakeholders who have been involved in setting up and implementing the AHSP in Tayside.

A team from the School of Management at the University of St Andrews, led by Dr Lisi Gordon undertook the evaluation. Team members include Dr Gordon and Dr Benet Reid, both experienced qualitative researchers with a working knowledge of health and social care (both clinically and as researchers).

Data Sources

Our sources were a database of internal and publically available documents provided by the AHSP; field notes from observation at Tayside AHSP meetings and related events; and recordings from 37 semi-structured interviews with Tayside AHSP stakeholders. Of these, the interviews became our primary source for gathering the perspectives of people involved, with documents used to substantiate and give context for interview material.

Interview participants and data collection

Participants were invited by email to participate in an individual interview. The aim was to interview face-to-face but where not practicable (for example due to geographical reasons), a telephone or Skype interview was offered.

We developed an interview schedule of broad areas to discuss (eg. successes, challenges, nature and role of the AHSP, future possibilities) but were careful to allow respondents the freedom to direct the discussion as they wished, and wherever possible used their own words to frame prompts and questions, to minimise the introduction of our own language and concepts. We were influenced by the notion of 'appreciative inquiry' to bring out perceptions of value and soft outputs. All interviews finished with an open question to ensure participants had opportunity to fully share their own thoughts. Interviews followed ethical procedure (full information, withdrawable formal consent, assurance of anonymity not confidentiality) approved by the University of St Andrews, Management School ethics committee.

A total of 37 interviews were undertaken (33 face to face; 3 by telephone; 1 by Skype). Interviews lasted between 17 and 61 minutes (average 38 minutes). All interviews were audio-recorded and transcribed using an experienced (and confidential) professional transcription service. Basic participant characteristics are detailed in the Table below.

Participant Characteristics	Number
Gender: Male	22
Female	15
Institution Type: University	12
NHS	12
Industry	5
Public Body	8

Data Analysis

Based on initial reading of documents, meeting notes, interview transcripts and listening to interview audio-recordings, the team developed a set of a priori themes, these being: people's roles; AHSP as entity, context; outcomes; successes/facilitators; challenges; future; and risk. All interview transcripts were then coded using these themes (using NVivo 12 data analysis software).

Using these coded interview excerpts, we produced a compendium of quotation material (135,000 words, 313 pages) which was subjected to further, in depth analysis. From this further analysis and analysis of the other data sources, a draft document identifying themes and sub-themes with illustrative quotes was developed. This 18,000-word document was further hard-edited to emphasise our key findings and remove areas of overlap and repetition. This iterative process produced a document of [16 pages] that was checked and further edited to ensure that no major significance had been lost through the editing process. Further proof-reads and team discussions were undertaken to finalise the document as presented. In writing this document the research team made the decision to focus on giving voice to Tayside AHSP stakeholders, arranging key quotes into a narrative of juxtaposing viewpoints within the key themes.

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Other credits

Photographs Benet Reid, except:

p12 surgical robot, Dundee University

p14, Eider Duck, Fiona Taylor

p23, planting design Alex Rainford-Roberts / photographer Stuart Ovenden



Spring blossoms outside Ninewells Hospital, Dundee



Bandstand, Magdalen Green, Dundee

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