Dear Convener,

Following the Health and Sport Committee evidence session on Tuesday 3 October 2017, attended by Elaine Gemmell, Head of Project Management at Scottish Health Innovations Ltd (SHIL); the additional information provided herein illustrates the unique role of SHIL within the Scottish health innovation landscape and provides specific examples of innovation originating from within NHS Scotland. It is intended to highlight the value of uncovering transformational ideas from NHS Scotland staff and providing clear routes of national support to encourage, develop and bring these ideas to market. It builds upon our original submission (TINN031) and commitment to supporting this inquiry.

Scottish Health Innovations Ltd (SHIL) is funded via annual grant from the Chief Scientist Office and works in partnership with NHS Scotland to identify, protect, develop and commercialise healthcare innovations to improve patient care. Formed in 2002, SHIL is a private company registered in Scotland (SC236303) and limited by guarantee, with three shareholders – Scottish Minister’s through the Chief Scientist Office, NHS Tayside and the Golden Jubilee National Hospital. Employing a small multidisciplinary team (less than 10 WTE) we are committed to supporting innovation across NHS Scotland by:

- **Driving a culture of innovation** harnessing the talents of all NHS Scotland staff to improve the quality of healthcare and develop new and improved treatments and devices for our patients.
- **Providing expert services to NHS Scotland** including intellectual property advice and protection, project management, idea incubation, development and commercialisation, funding advice, and post-commercialisation monitoring.
- **Accelerating development of concepts and prototypes** enabling innovative ideas to be assessed for commercial success, suitable partners identified at an early stage and facilitation of trials to demonstrate clinical utility and affordability.
- **Advocating the value of innovation in healthcare** and provide a clear route to access expert advice, hands-on support, training and information.
- **Supporting collaboration** across the Scottish healthcare innovation ecosystem.
- **Supporting financial sustainability** and generate an income stream to NHS health boards through financial returns on co-development projects.
Encouraging ideas and innovations from healthcare professionals and providing a systematic, nationally supported, route to develop ideas and innovations removes many barriers associated with innovation – time pressure, health board risk and development expertise. SHIL believes its model is strong and this is reflected in positive annual performance feedback from Health Boards. SHIL’s systematic approach to innovation supports more productive, scalable and sustainable ideas. Over the years, we have successfully commercialised a range of products and spin-out companies working with health professionals across the spectrum of disease and medical backgrounds, to support new ways of improving patient care. Some of these successes are illustrated below:

**Ambulance Child Restraint – The ACR®**

An innovative system for the safe, effective handling of young patients being transported in ambulances. The patented two-part system is compatible with any stretcher, with breathable fabric maximising airflow and meeting infection control standards.

A project team comprising staff from Scottish Ambulance Service (SAS) and SHIL worked with Lightweight Medical, a new venture catalyst, to develop the product to a stage suitable for commercialisation. This included input from the Children’s Acute Transport Service, NHS infection control officers and paediatric ICU specialists at Glasgow’s Yorkhill Hospital for Sick Children (now Royal Hospital for Children, Glasgow).

SHIL partially funded and managed the product development and ensured that the commercial rights of NHS Scotland were protected with the ownership of the Intellectual Property (IP) residing with Scottish Ambulance Service; and at a later stage licensing to Lightweight Medical for the purpose of commercialisation. The product is now widely adopted by Ambulance Services across the UK.

**Prism Glasses™**

Created to treat those suffering from phantom limb pain and aid the rehabilitation of patients following a stroke, the glasses also have applications in the treatment of visual neglect syndrome and other chronic pain conditions, such as complex regional pain syndrome. They allow the affected area of the patient’s body to be visualised, encouraging the generation of new neural pathways, aiding recovery and alleviating pain.

The product is the result of a collaboration between a pain management consultant in NHS Tayside, and an optometrist from Glasgow Caledonian University – with design input from a highly experienced team including an ophthalmologist, health psychologist, stroke physician and a physiotherapist.

SHIL funded the development of the project, obtained appropriate regulatory approval in Europe, and secured Intellectual Property (IP) for NHS Tayside. SHIL now assumes responsibility for direct sales of the product with more than 600 units sold.
SHIL also has a strong record in producing spin-out companies on behalf of NHS Scotland. Each company has been set up to produce and market healthcare innovations that originated from NHS Scotland employees. If a product is thought to have scope of more than one iteration, or if the innovator has ideas for multiple products in the same field, a spin-out company can help establish a brand for their products and raise capital from a wide range of sources. For example:

**Touch Bionics**

Began as an idea from NHS Lothian and became the first SHIL spin-out in 2002. An initial SMART award from Scottish Enterprise started the company, and it subsequently received funding from a range of Scottish based investors including Archangel Informal Investments, TriCAP, Clydesdale Bank and the Scottish Co-investment Fund. On 11 April 2016 Touch Bionics was acquired by Össur, a recognised "Technology Pioneer" in a sale worth £27.5m.

**Aridhia**

Founded in 2007 as a spin-out company from SHIL. AnalytiXagility, the company’s cloud-based data analysis platform, is a secure, self-service platform built to enhance the way researchers in biomedical research, precision medicine and healthcare environments access and analyse data. Today, AnalytiXagility is used by ground-breaking research organisations around the world to enable the execution of collaborative research projects and business models, including pre-competitive drug trials, multi-institutional data-driven precision medicine initiatives, and integrated healthcare programmes. This includes the recently announced ten-year deal with Great Ormond Street Hospital NHS Foundation Trust (GOSH) which will see Aridhia deliver the research and innovation component of the Trust’s multi-year digital transformation programme.

We hope this follow up information has gone some way to illustrate the talent, entrepreneurism and commitment of staff across NHS Scotland and the benefit of a strongly integrated and well resourced national approach to innovation.

Many of the products and companies formed by SHIL have helped deliver better patient care while simultaneously improving quality and efficiency and releasing savings through increased productivity.

Our extensive experience shows that innovation from within the NHS can support transformational change. We believe that strengthening and integrating the innovation ecosystem and pathways should be a key element of the new Digital Health and Social Care
Strategy. This is an opportunity to simplify the landscape, refine roles, align activities to optimise available resources, and achieve closer sector collaboration, in turn capitalising on the advantages a single, unified health system can offer in accelerating change on a national level.

We will of course be happy to provide the Committee with further information as necessary.

With thanks,

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