

*Health Technologies and Data for patient and
NHS support- how can we use personal
monitoring for better health and hospital
outcomes?*

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Today

1

Technology for personal monitoring and intervention is here, but there is need for more diagnostic and monitoring devices.

2

AI and data management have come of age

3

There are challenges still to be met in medical monitoring – both for devices and data. Where can they help and who will support the patient?

4

Triple Helix Exemplars – Centre for the Future Hospital, Ohmedics Ltd

A variety of technologies and apps exist for personal monitoring and interventions in the hospital or at home

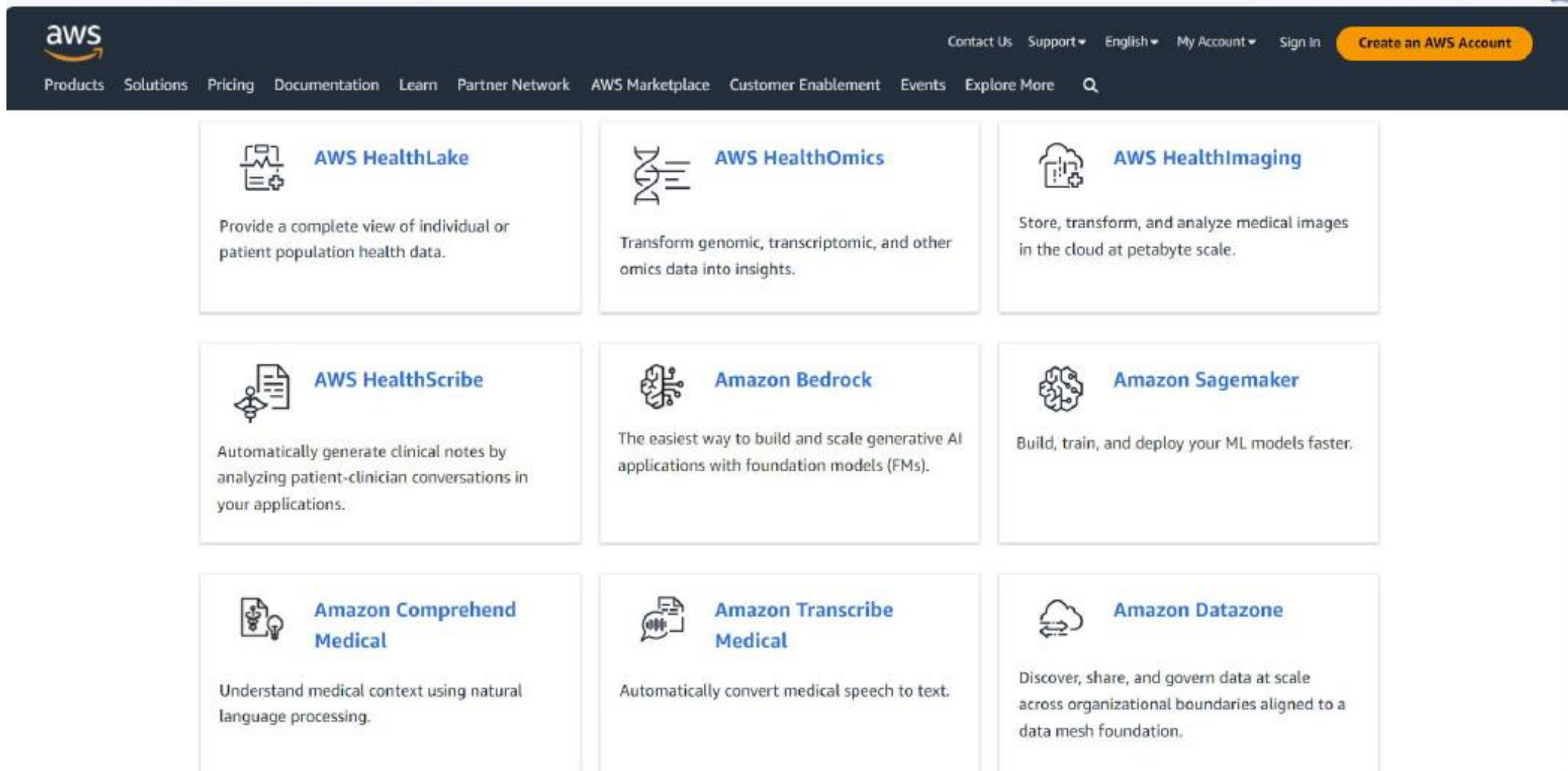
- BP, O2, ECG, Glucose, Weight, lateral flow tests (Yes/No)












Data collection, manipulation and AI expertise has grown in big tech companies



AI and data are commercial



The screenshot shows the AWS Health AI services page. At the top is the AWS logo and navigation links: Products, Solutions, Pricing, Documentation, Learn, Partner Network, AWS Marketplace, Customer Enablement, Events, Explore More, and a search icon. On the right side of the header are links for Contact Us, Support, English, My Account, Sign In, and a prominent orange button for 'Create an AWS Account'. The main content area features a grid of nine service cards, each with an icon, a title, and a brief description.

Service	Description
 AWS HealthLake	Provide a complete view of individual or patient population health data.
 AWS HealthOmics	Transform genomic, transcriptomic, and other omics data into insights.
 AWS HealthImaging	Store, transform, and analyze medical images in the cloud at petabyte scale.
 AWS HealthScribe	Automatically generate clinical notes by analyzing patient-clinician conversations in your applications.
 Amazon Bedrock	The easiest way to build and scale generative AI applications with foundation models (FMs).
 Amazon Sagemaker	Build, train, and deploy your ML models faster.
 Amazon Comprehend Medical	Understand medical context using natural language processing.
 Amazon Transcribe Medical	Automatically convert medical speech to text.
 Amazon Datazone	Discover, share, and govern data at scale across organizational boundaries aligned to a data mesh foundation.

Specialist data and monitoring companies are entering the health space

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NHS Spine look up

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Post Natal Hypertension



SBAR assessments



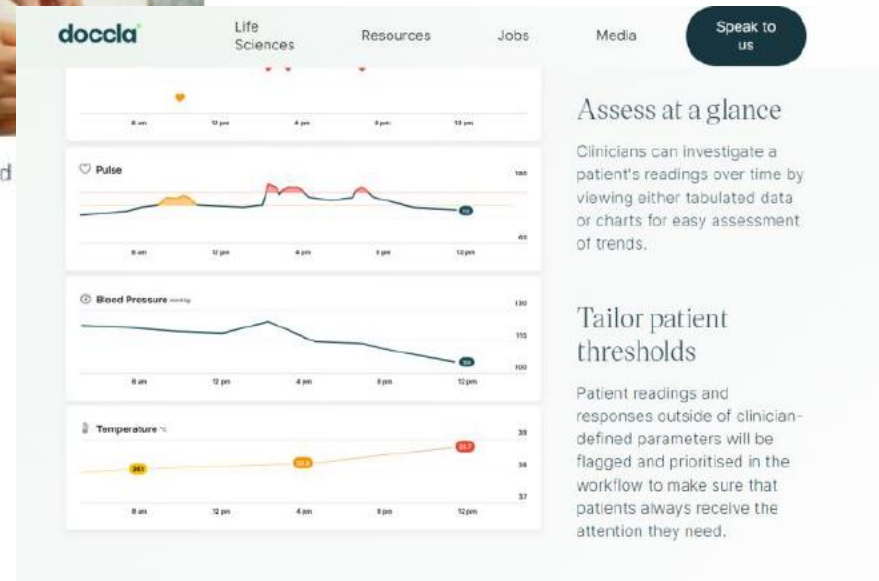
Vital signs



Weight management



Wound



The screenshot shows the 'doccla' dashboard with a navigation bar for 'Life Sciences', 'Resources', 'Jobs', and 'Media', and a 'Speak to us' button. The main content area displays three line graphs for 'Pulse', 'Blood Pressure', and 'Temperature' over a 12-hour period. The 'Pulse' graph shows a baseline around 60-70 bpm with several spikes. The 'Blood Pressure' graph shows a steady decline from approximately 120/80 mmHg to 100/60 mmHg. The 'Temperature' graph shows a steady increase from 36.5°C to 37.5°C. A 'Wound' section is partially visible on the left. To the right of the graphs, there is a section titled 'Assess at a glance' with a sub-heading 'Tailor patient thresholds'.

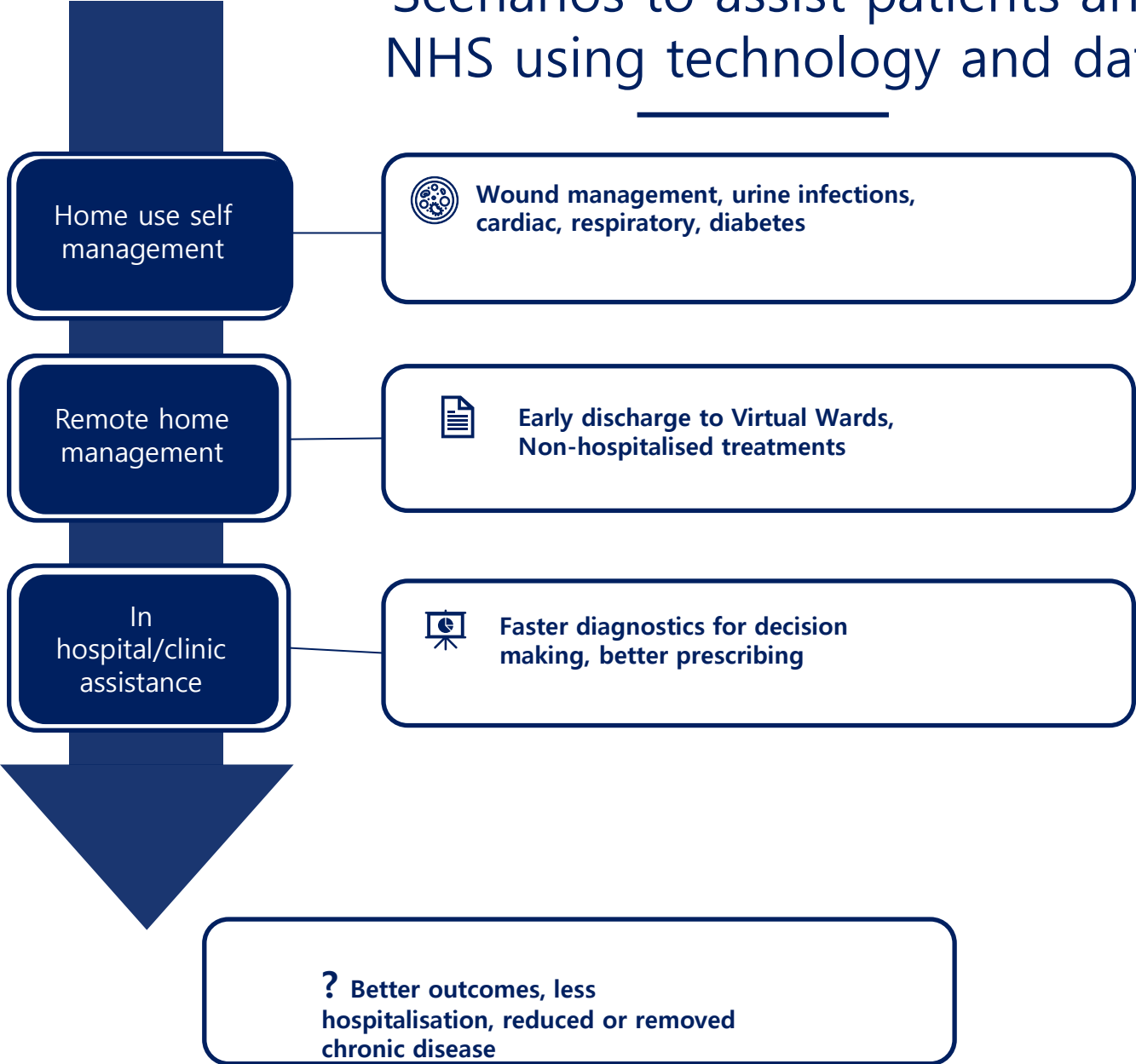
Assess at a glance

Clinicians can investigate a patient's readings over time by viewing either tabulated data or charts for easy assessment of trends.

Tailor patient thresholds

Patient readings and responses outside of clinician-defined parameters will be flagged and prioritised in the workflow to make sure that patients always receive the attention they need.

Scenarios to assist patients and NHS using technology and data

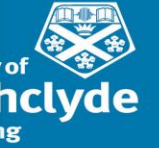
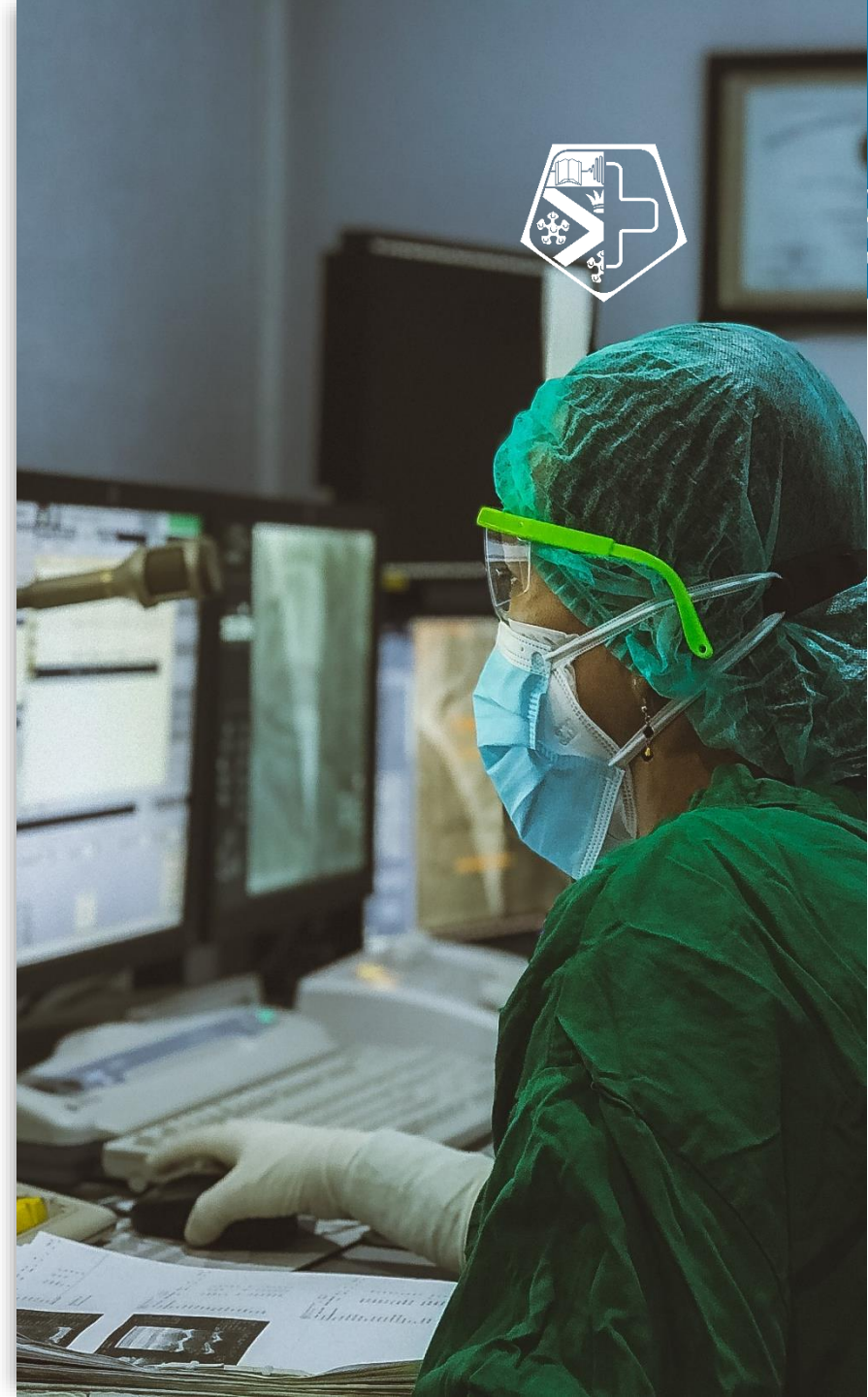


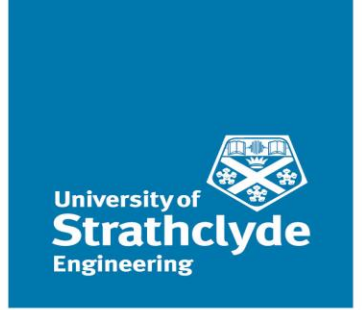
University of Strathclyde -The Centre for the Future Hospital

Mission

An inter-disciplinary research hub leveraging the triple helix of academia, industry, and NHS to deliver world-leading research.

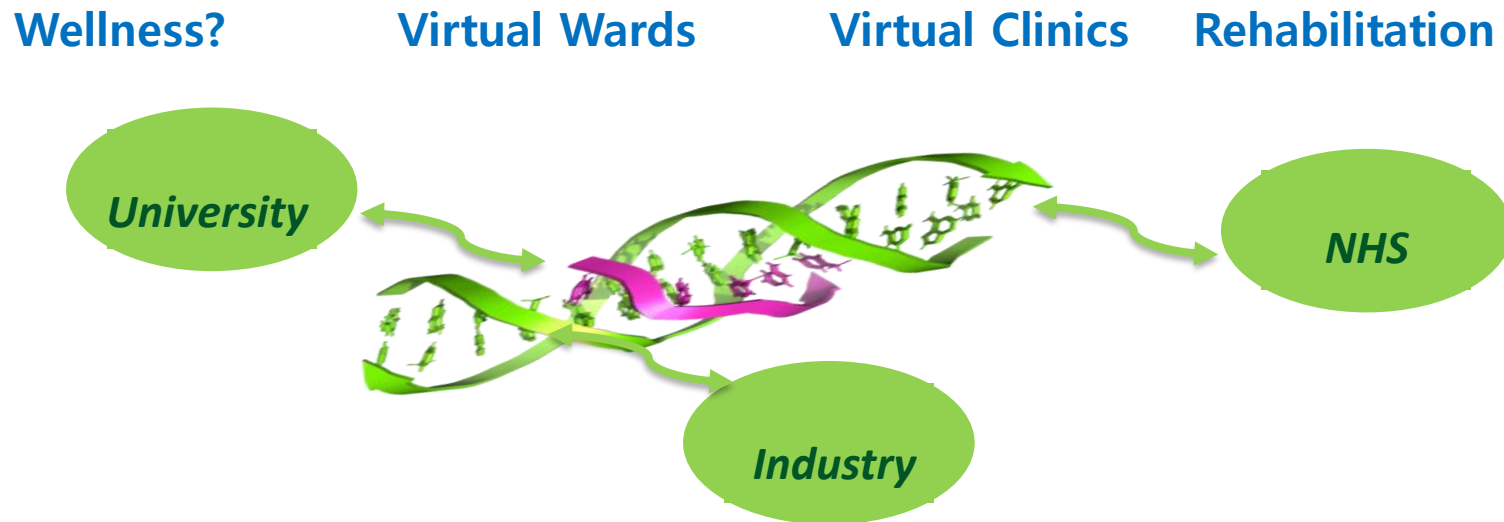
Developing a transformative vision with staff and service users for the future of health and social care.





CENTRE FOR THE FUTURE HOSPITAL

Proactive – Predictive – Preventive – Personal – Sustainable



Three platform technologies needed for wearable or remote diagnostics are being researched, developed and commercialised by the Medical Diagnostics & Wearables Group in collaboration with the Strathclyde spin-out, Ohmedics Ltd.

1. WoundSense™. A CE –marked medical device. Wound monitoring and diagnostics with an ‘in dressing sensor’ for moisture measurement and dressing change control. An ‘in dressing’ infection monitor will be the next product from this platform.
2. Bioelectronic based cell and bacterial reagentless monitoring and detection for infection detection, urine, blood, lung etc.
3. Transdermal (skin-wearable) sensors for blood parameters such as glucose, lactate and hydration testing.



'In-Dressing' real time monitoring for;

- Wound moisture –optimal dressing selection and healing
- Dressing change need - for home or hospital use by patients, carers and clinicians
- Pipeline product - real time 'In-Dressing' infection monitoring
- IP protected in the USA, Canada, EU, China, Japan



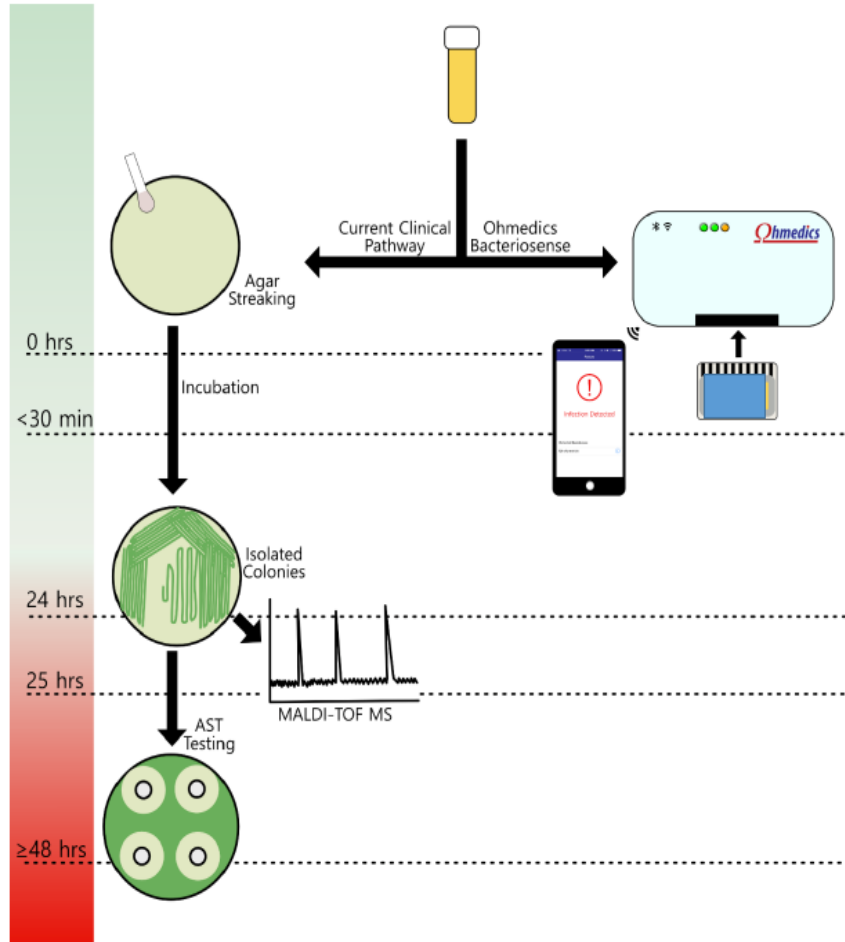
Hand held meter reads a 'drop' moisture scale from the in-dressing sensor



The disposable, sterile sensor is placed in the dressing for up to 7 days

Home infection sensing

An infection sensor based on a swab sample for wounds or urine sample has been developed. Suitable for home, pharmacy or GP use with results in 20 minutes including AMR.



 **Cost-Effective**

 **Faster**

 **Easier to use**

Our Transdermal Technology platform has allowed us to develop a wireless, wearable sensor capable of sensing ions and small molecules through the skin e.g. glucose, lactate, electrolytes.

At advanced development stage we have a skin mounted hydration sensor.



The wearable hydration sensor communicates hydration status to the user's mobile phone

Hydration is an important part of nutrition and affects mental & physical performance.

- Until now hydration was either monitored medically or by imprecise scales such as urine colour.
- Our skin-mounted device allows non-invasive monitoring of hydration for up to 12 hours per session.
- The device will have wide consumer appeal across sports enthusiasts, office workers and those tracking their wellbeing status.

THANK YOU

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