

#### **HEALTHCARE INNOVATION -**

**Intelligent Healthcare Solutions** 



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Vaccines & Health
Policy Lead
Corporate Affairs
ASTRA ZENECA



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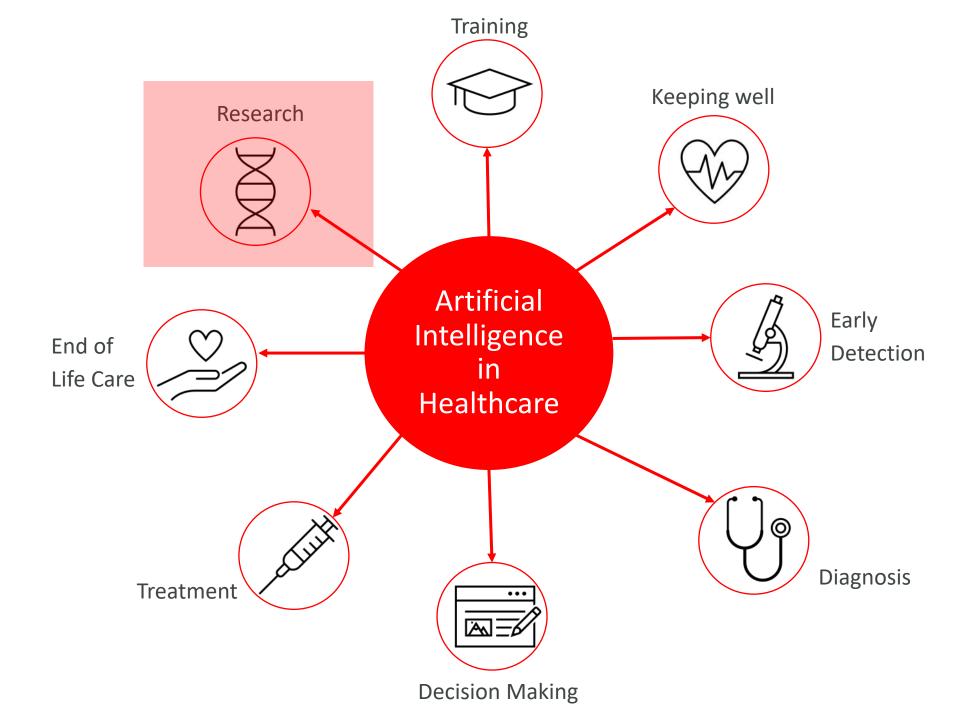
### Kerrie McDonald

Vaccines and Health Policy Lead
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Intelligent
Healthcare
SolutionsUse of AI in
pathology

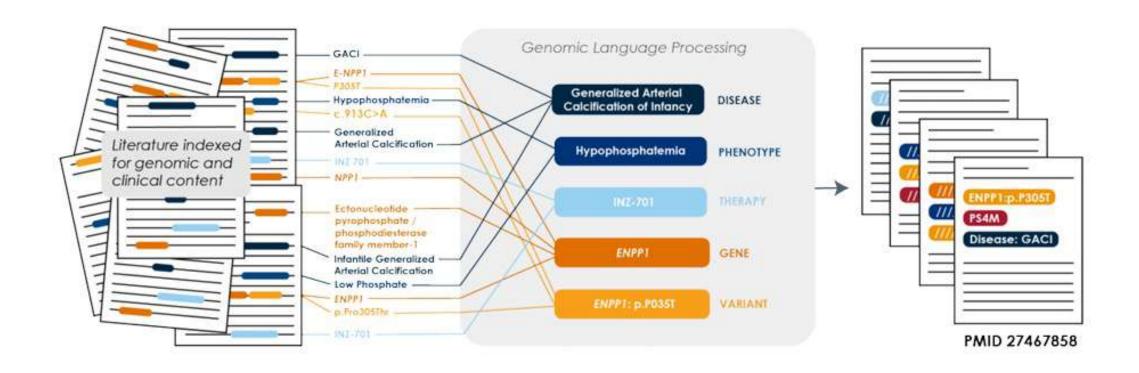




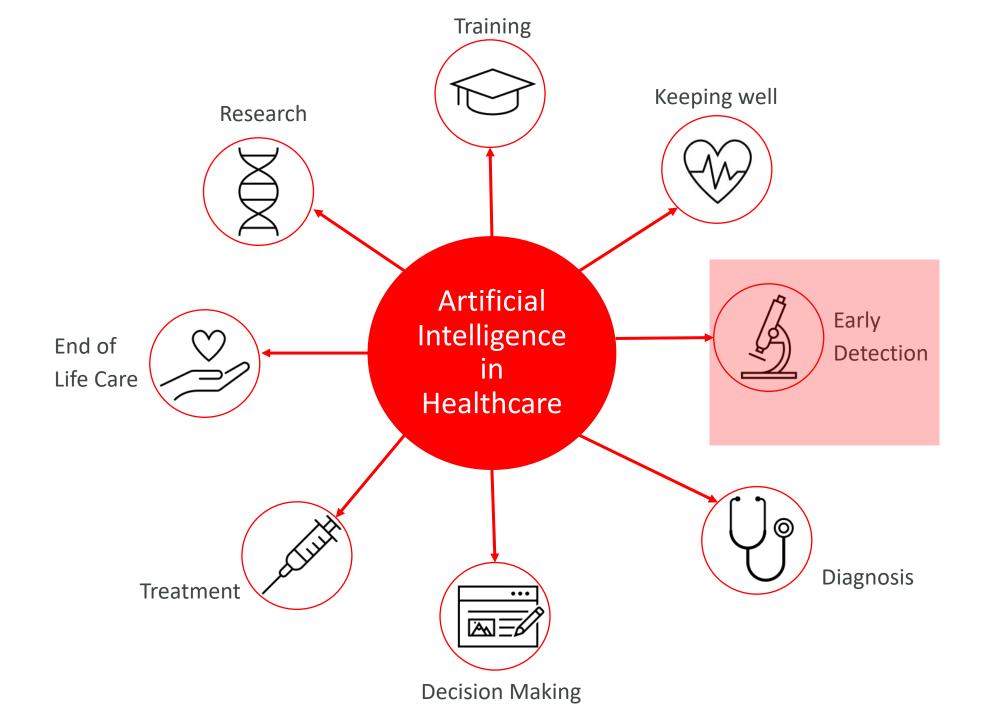




#### Use of AI in Research

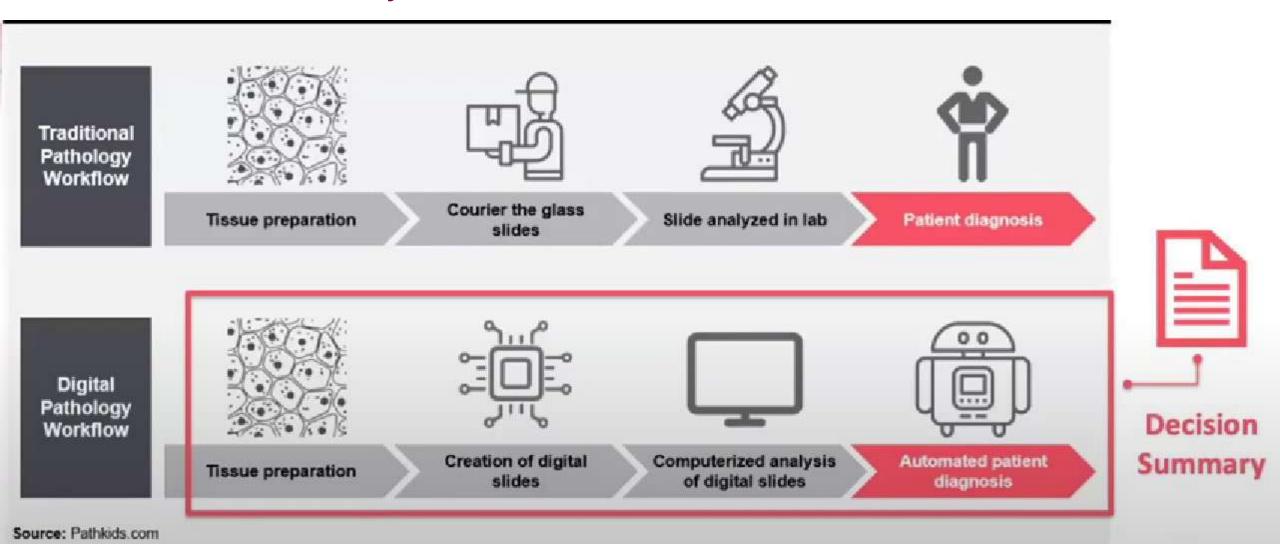




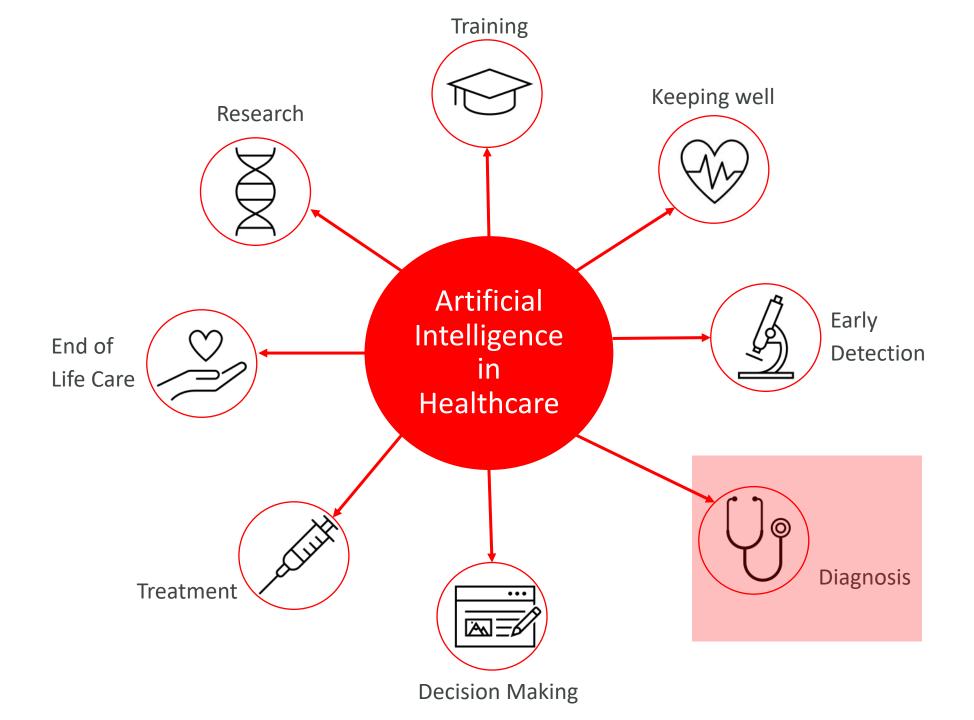




### Use of AI in early detection









#### Use of AI in Diagnosis



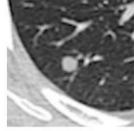
#### 47/Male

#### **Preliminary Findings**

Nodule #1 - Smooth marginated, round nodular lesion is detected in right lower lobe of lung measuring 9×8 mm (series 1, image 377) with volume 120 mm<sup>3</sup>.

This nodule has increased in size with a Volume Doubling Time (VDT) of 3 years as compared to previous scan dated 03/05/2019 (previous size 6×5 mm, volume 70 mm3).

Malignancy risk score 15%



Nodule #1



Nodule #2

Nodule #2 - Smooth marginated, round nodular lesion is detected in left lower lobe of lung measuring 8 5 mm (series 1, image 405) with volume 76 mm3. Malignancy risk score 2%

#### Suggested Follow-up:

CT at 6-12 months, followed by another CT at 18-24 months.





**Shaun Seery** 

Vice President Elekta

# () Elekta

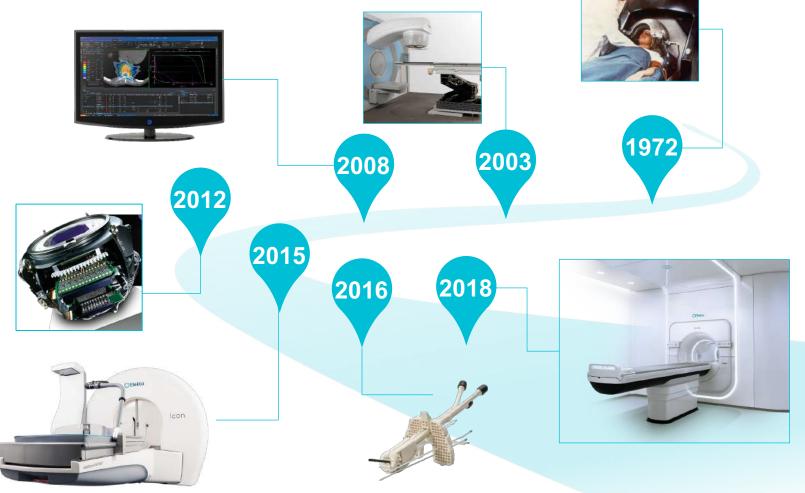


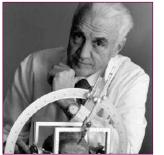
We believe that a better future for the treatment of cancer and neurological disease is about achieving focus where it matters





## Our history is what drives us forward





Dr. Lars Leksell (1907–1986) Professor of Neurosurgery

Founded by Lars and Laurent Leksell in 1972, we have dedicated ourselves to pioneering advancements for cancer care and treatment of brain disorders.



#### Elekta

### Precision radiation therapy for everyone, everywhere

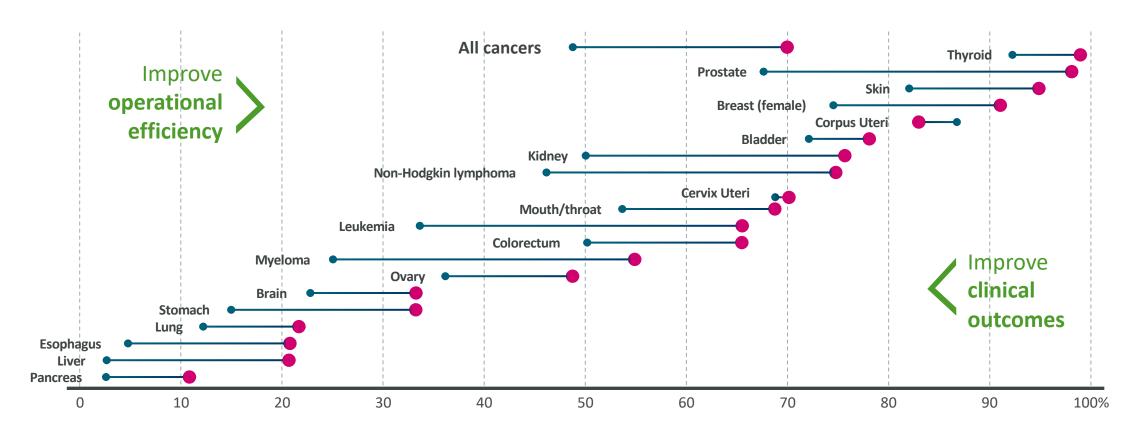
A prolonged, disease-free life is what cancer patients hope for.

As clinics become more collaborative and treatments become more personalized, Elekta is using precision radiation medicine to work towards a future where everyone can benefit from precise and individually tailored radiotherapy treatments, regardless of your need or location.



#### Improvements in cancer care

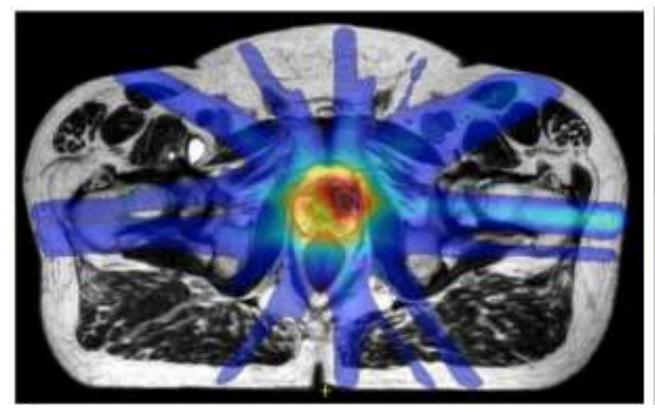
#### Survival rates have increased over the past 40 years



Average five-year survival rates from common cancer types in the U.S., shown as the rate over the period 1970-77 [ ] and ove the period 2010-16 [ ]. This five-year interval indicates the percentage of people who live longer than five years following diagnosis.

### Linear Accelerator Delivering Radiation Therapy

Advanced modulation and delivery

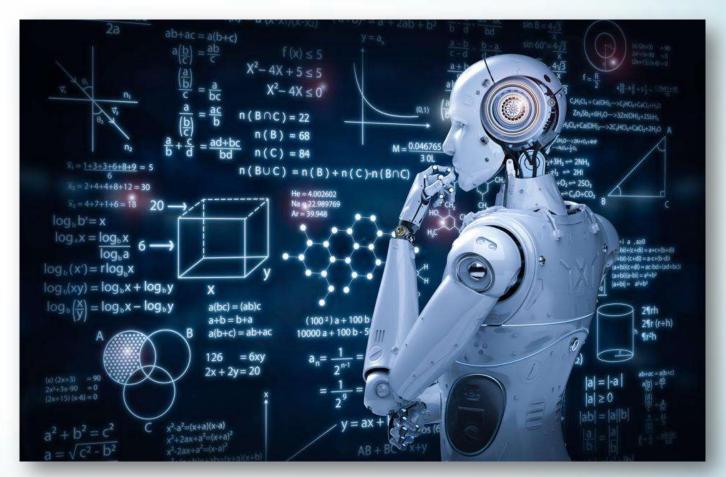


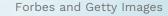


# Machine Learning Alive and Well in Radiation Therapy

Machine learning is a field of inquiry devoted to understanding and building methods that 'learn', that is, methods that leverage data to improve performance on some set of tasks.

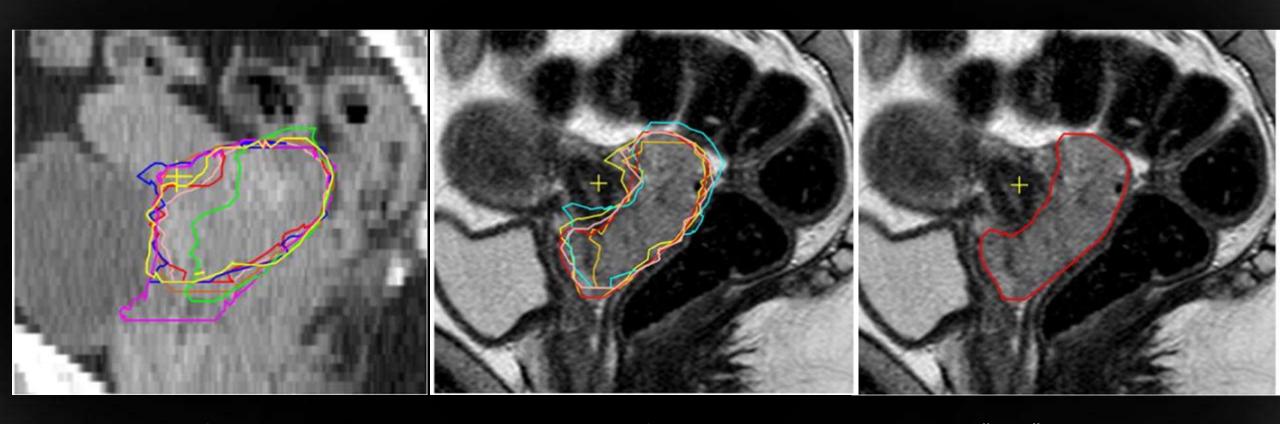
It is seen as a part of artificial intelligence. Wikipedia

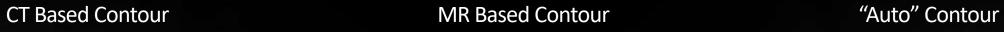






#### Manual Process can Increase Variability

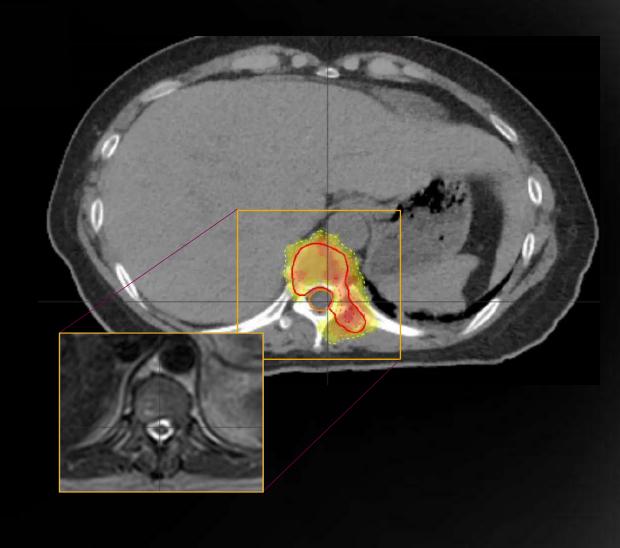






#### MR/RT Spine SBRT Radiation Dose "Sculptured" around Spinal Cord





Images courtesy of CUHKMC

#### Two AI applications combined to improve outcomes

#### Elekta ProKnow®

Unlock the power of data to enhance patient care

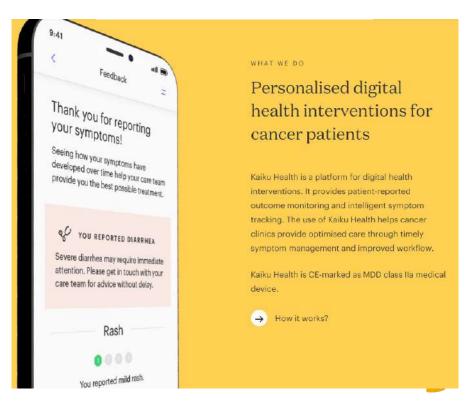
Maximize operational efficiency with AI based auto-contouring

Streamline clinical trial management

Automate data analysis of long-term health outcomes

**Knowledge sharing and peer-to-peer support** 





#### Elekta Proknow®

#### View, Analyze and Gain Insights Planning

ProKnow DS is a cloud-based solution that allows you to store, navigate, and retrieve your radiation therapy plans in scalable framework that works across all imaging, planning, and treatment modalities.

- Identify outliers and trends to drive consistency
- Navigate from big population plans to the individual patient with a simple mouse click
- Correlate customized metrics with treatment plans
- Measure outcome and support clinical trials
- Drive care decisions in every clinic





#### Kaiku®

#### Capture and process patient-reported data

Kaiku Health is a digital platform for patient engagement and patient-reported outcomes



Collect Real-World Data on treatments to <u>evaluate their effectiveness</u>, safety profile and long-term outcomes for patients



Engage patients to the treatment better and know <u>on-time how patient's</u>

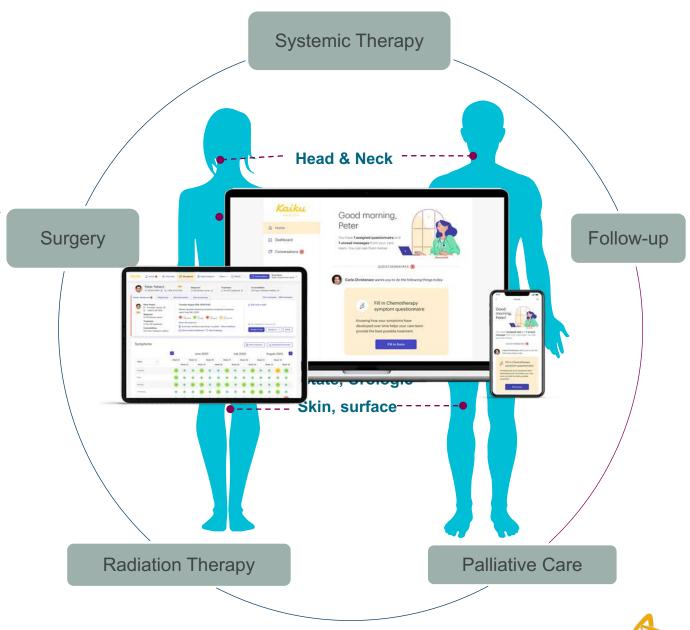
<u>symptoms are developing</u> in between medical appointments



Provide patients with better <u>patient support materials and instructions</u> during and after the treatment (e.g. psycho-oncology or rehabilitation)



Improve clinical workflow efficiency by <u>automating manual processes</u> in patient follow-up and <u>decrease the amount of phone calls</u> to the clinic

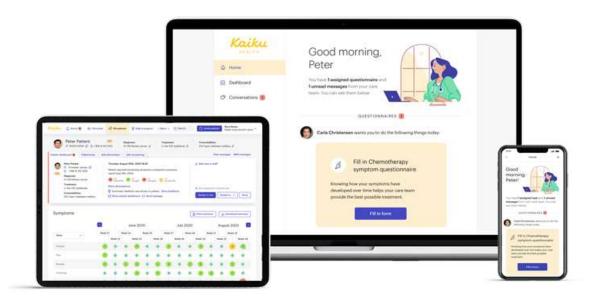




#### Kaiku® + Proknow®

### Comprehensive suite of Patient experience AND Dose

- Link dose with patient experience, imaging, patient reported outcomes
- Understand how radiotherapy dose has affected patient experience,
   symptom management and Patient reported outcomes.
- Continuously improve the quality of care and quality of life by Identify trends and correlations from plan characterics and Kaiku information.
- Use these trends and correlations to proactively adapt care for future patients.
- Audit and refine practice to give the best experience and care for your patients based on RWD









# © Elekta



50 years of innovation and beyond.





### Reidar Gårdebäck

Chief Executive Officer
Ortivus AB

### CCRVANTA

Mitch Farquhar

Operations Manager Corvanta





# Healthcare challenges



Growing and ageing population



**Staff shortages and lack of competence** 



Increased care need and care dept after Covid-19



**Crowded emergency departments and care units** 



Insufficient care chains, inefficient processes and administration



Large geographical areas, with varied access and terrain



### Ortivus



An innovative Swedish e-Health/MedTech company



HQ in Stockholm
Office in Southampton





### Corvanta



An Australian company specialising in technology for out-of-hospital care

-)

Offices Australia-wide

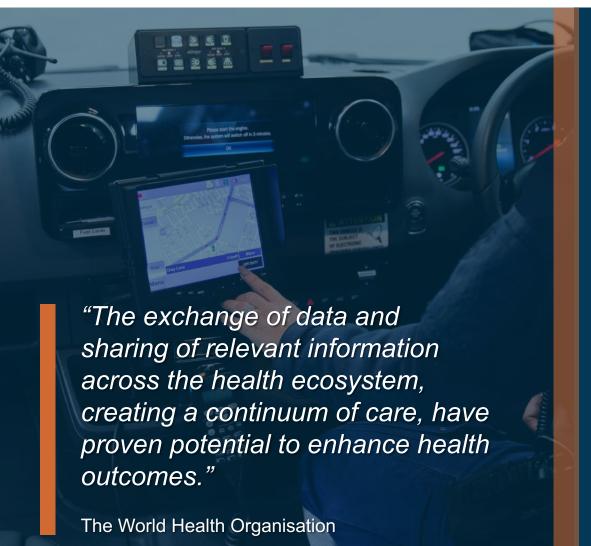








# Healthcare requirements



#### Develop the use of digital solutions

- Secure IT systems with seamless information sharing
- Advanced out of hospital care

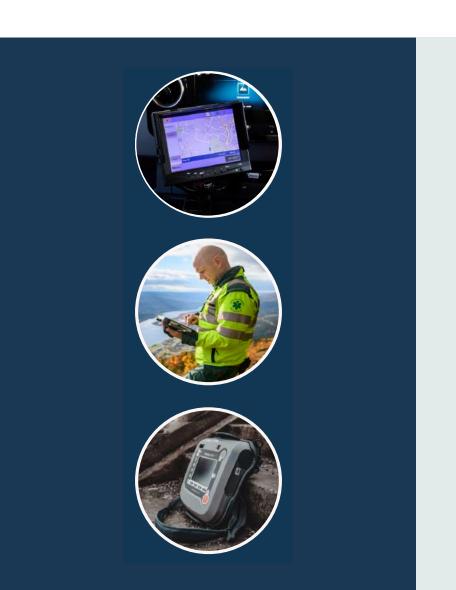
### Create conditions for great collaboration between all actors in the care chain

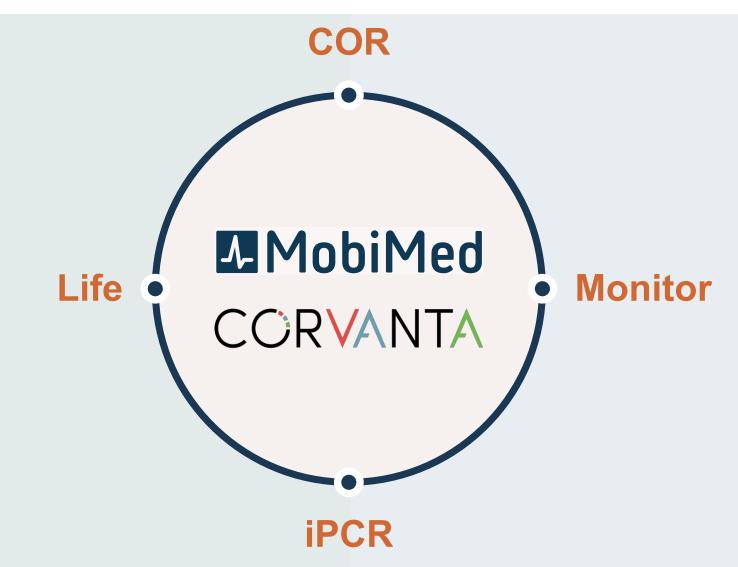
- Updated information in real-time improves efficiency and treatment outcomes
- For a continuum of care

#### Innovative technology for better work efficiency

- Ergonomic, modular and user friendly
- Advanced decision support and simple documentation
- Big data to evaluate and improve organisations

### Healthcare innovation





### Integrated Patient Care Record



A tool for decision support and documentation



Intuitive and user friendly



**Proven technology** 



Modular and tailored to the organisation's needs



Real time communication throughout the care chain

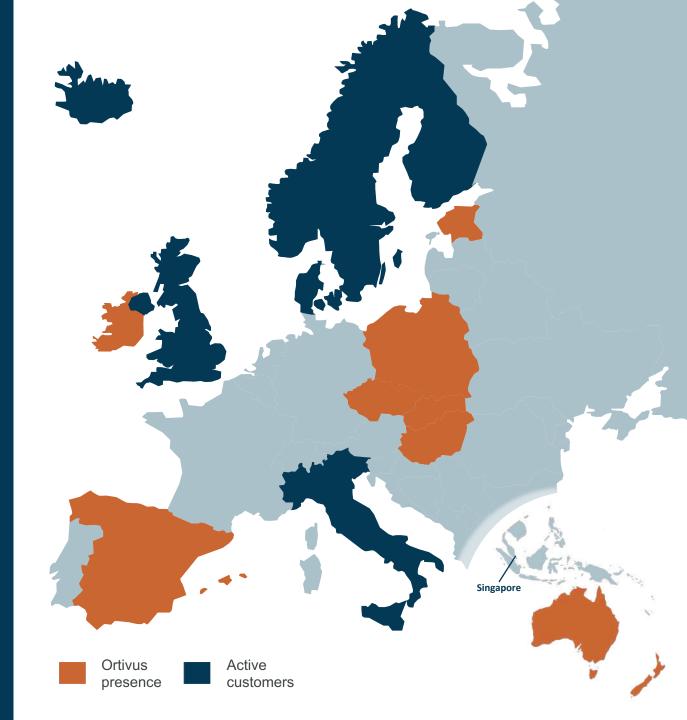


Used by over 12,000 paramedics

Installed in over

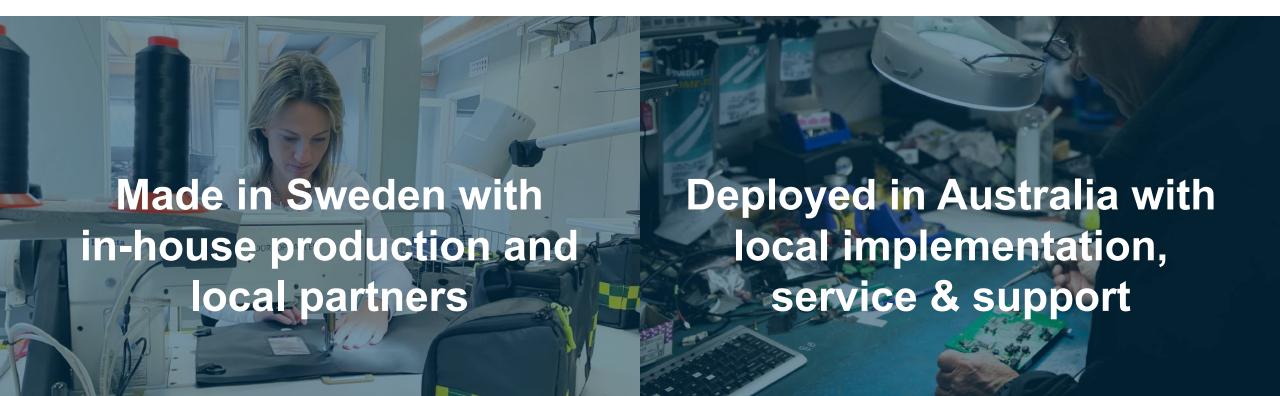
2,700 emergency vehicles

Handle over
250,000
missions each month





# Made in Sweden (\*) Deployed in Australia



# Looking ahead

#### **Resource management**

- Increased efficiency through the use of digital tools
- Staff and fatigue management
- Ramping reduction on scene treatement

#### Data use

- Big data capture
- Informed decisions reinforced by AI/ML
- Seamless transfer between care providers





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### THANK YOU

