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Artificial intelligence (AI)

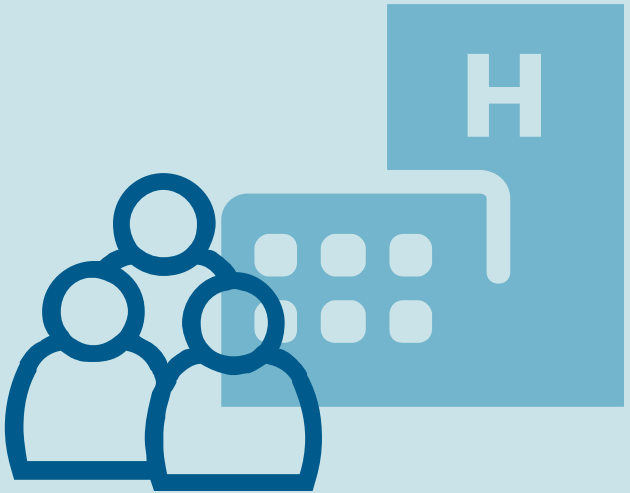
Technology that adapts
to improve people's lives

innovation you

The global healthcare challenge

Healthcare systems are under increased pressure to deliver high-quality and efficient care to growing populations.

But the financial and human resources to deliver that care are increasingly being stretched.



The global healthcare challenge in numbers

By 2020, chronic diseases will account for almost **75% of all deaths** worldwide.

$ $ $ $ $

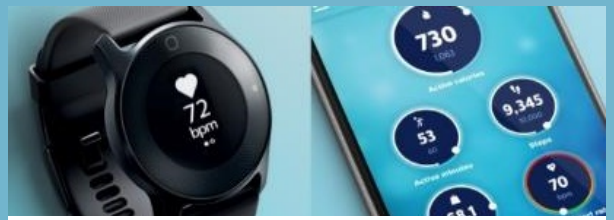
According to estimates, the US healthcare system wastes **$750 billion** annually.

By 2035, there will be a global deficit of about **12.9 million skilled health professionals**.

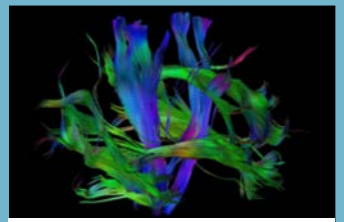
Value-based reimbursement will increasingly demand evidence of **better patient outcomes at lower cost**.

In 2015, US healthcare spending increased 5.8 percent to **$3.2 trillion**.

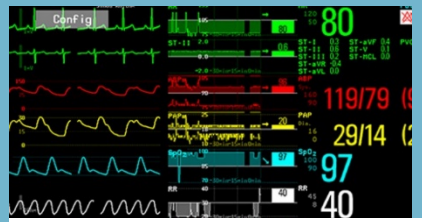
Digital is driving exponential growth of health data

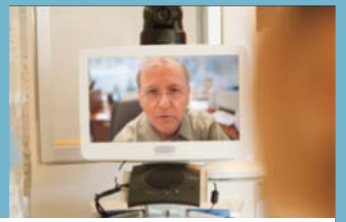


Personal health tracking

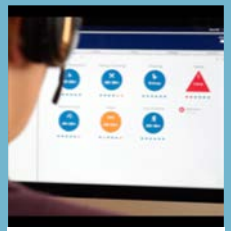


Medical imaging

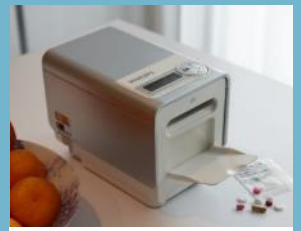




Patient monitoring



Home monitoring



Medication adherence

Pathology

Quantification

Genomics

Analytics

To see how the amount of data is exploding, take a look at Philips alone

275 million
patients tracked with our patient monitors last year

2.5
billion nights of cloud-based sleep therapy data

23 petabytes
of imaging study data managed for healthcare providers

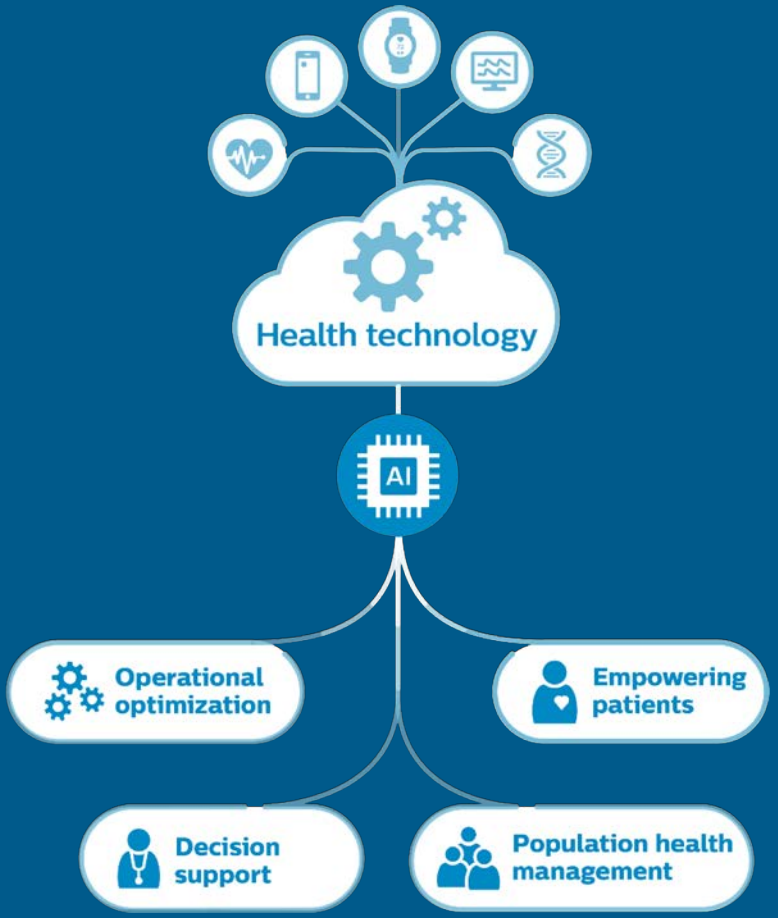
145
billion images managed

7 million
seniors supported with our wearable Lifeline service

Clinicians and hospital administrators have never had access to more data, but at the same time, it has never been harder for them to process all that data. They have **too much data and too little time**.

Personal health devices will increasingly generate large amounts of data, calling for solutions which **make data useful and actionable**.

AI will help turn large amounts of data into actionable insights to support and empower people

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Adaptive intelligence combines the power of AI and other technologies with clinical and operational domain knowledge

"**Adaptive intelligence is all about combining the strengths of people and technology**, to create solutions that improve people's lives"

Jeroen Tas, Chief Strategy & Innovation Officer

Adaptive intelligence can augment healthcare providers to deliver high-quality care and increase operational efficiency

- **Making sense of large amounts of data**
- **Making workflows in hospitals more efficient**
- **Allowing for timely interventions using predictive analytics**

Adaptive intelligence will empower consumers to better manage their own health

- **Providing intelligent coaching, allowing people to stay healthy and prevent diseases**
- **Facilitating connected care beyond the borders of the hospital**

Adaptive intelligence will increasingly enable population health management

- **More personalized treatment**
- **Providing predictive care for entire populations**

Why partner with Philips in adaptive intelligence

A global presence at the point of care

A full set of data science capabilities

A track record of co-creating intelligent innovations

A commitment to data and systems protection

Acute care

Philips IntelliVue Guardian System

Philips IntelliVue Guardian System with Early Warning Scoring (EWS) to reduce ICU transfers and readmissions, and adverse events.

An end-to-end AI solution

Philips IntelliSpace Discovery

With **Philips IntelliSpace Discovery***, we offer an integrated AI solution that enables the entire process of generating new AI applications, providing data integration, training and deployment in the research setting.

* IntelliSpace Discovery is for Research use only and cannot be used for patient diagnosis or treatment selection.

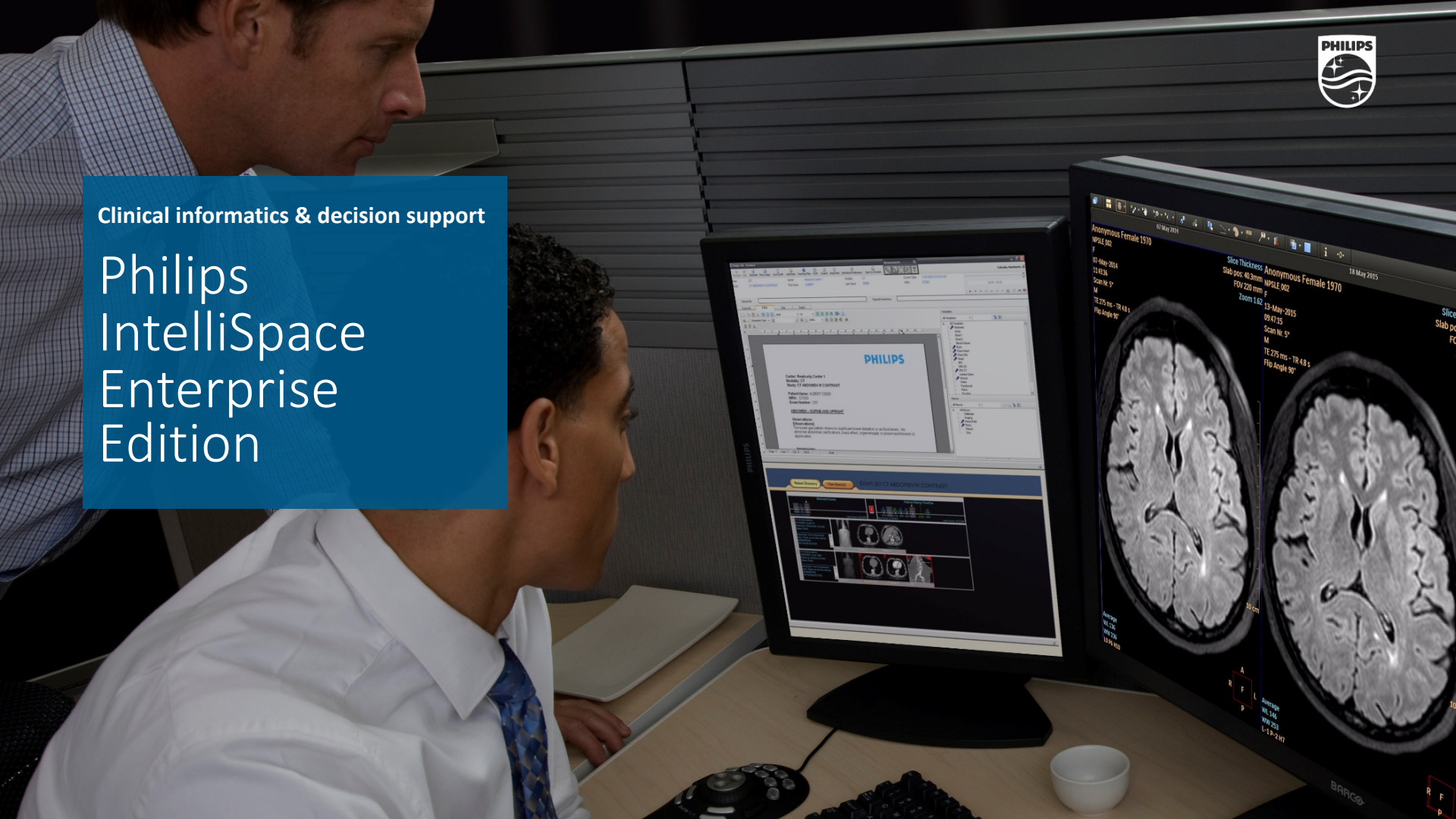
Digital pathology and genomics

Philips IntelliSpace Genomics

Diagnostic imaging

Philips PerformanceBridge


Population health management
Philips
Wellcentive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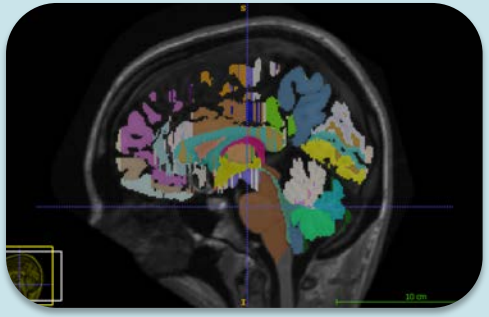
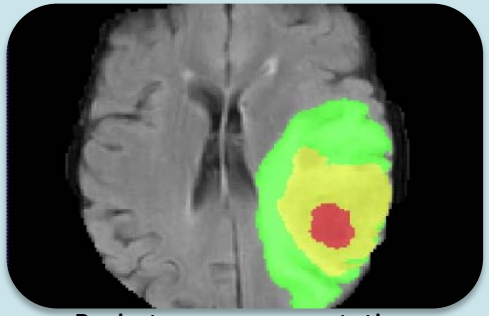
Clinical informatics & decision support
Philips IntelliSpace Enterprise Edition

AI Models



Brain anatomy segmentation

Delineate anatomical structures in MRI Brain and MRI head/neck volumetric images



Brain tumor segmentation

Detect and segment brain tumors into four distinct regions from multimodal MRI scans

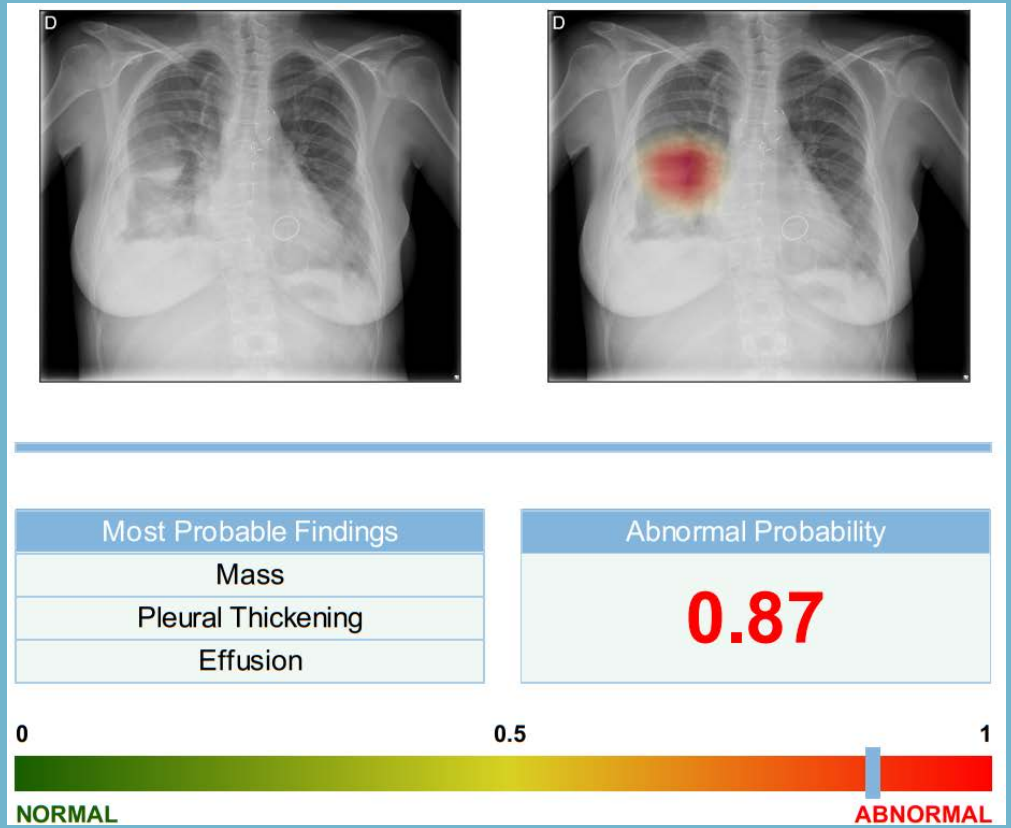
Tuberculosis detection

Automatically detect the presence of Tuberculosis in chest X-rays

Chest Xray – Abnormality Detection Algorithm 1

Abnormalities:

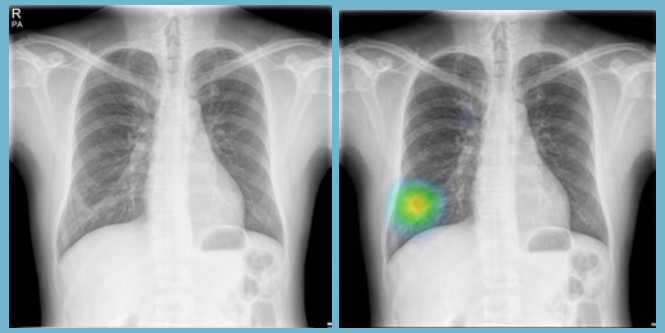
- Atelectasis
- Cardiomegaly
- Consolidation
- Edema
- Effusion
- Emphysema
- Fibrosis
- Hernia
- Infiltration
- Mass
- Nodule
- Pleural Thickening
- Pneumonia
- Pneumothorax



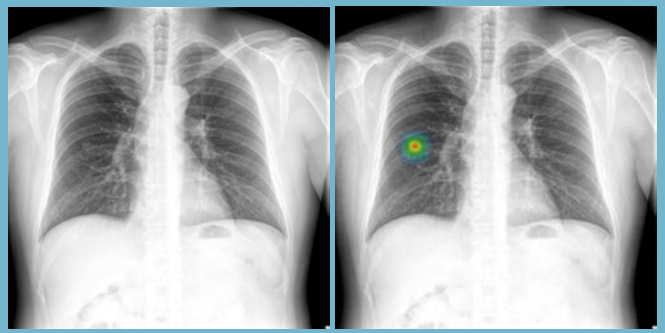
Chest Xray – Abnormality Detection Algorithm 2

Abnormalities:

- Nodule/mass
  - e.g. Lung cancer
- Consolidation
  - Pneumonia
  - Pulmonary edema
  - Interstitial lung disease
- Pneumothorax
- Pleural effusion
- Mediastinal widening
  - E.g. Aortic dissection
- Pneumoperitoneum
- Rib fracture



consolidation, diagnosed as pneumonia
abnormality score: 81%



nodule, diagnosed as lung cancer
abnormality score: 94%

Trained with a large-scale (>200,000 cases), high-quality (clinically/CT-proven cases) Accuracy : 98-99% AUC

More...

- Digital Twin – Our Health Avatars
- Tumor Board w Precision Medicine
- Digital Pathology
- Hospitals part of AI Research
- Identify people who do not know they are ill
- Sleep Apnia – Dream Mapper an interactive platform
- Operational work flow optimization
- Fast & precise clinical decision algorithims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