



**Mrs. Ann Costello**

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Clinical decision support that helps in saving lives





Ann Costello  
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Roche Diagnostics

**TO CLINICAL  
DECISION  
SUPPORT FOR  
IMPROVED  
PATIENT CARE**

**FROM DATA POINTS**

**WHERE CARE LEADS**





## Why are we here?

*“According to my doctors, I am not supposed to be talking to you now. They gave me about a year to live after I developed aggressive bladder cancer. But here I am three years later, telling you my story — almost cancer-free and living my life.”*

— Michael Negrin, Israel

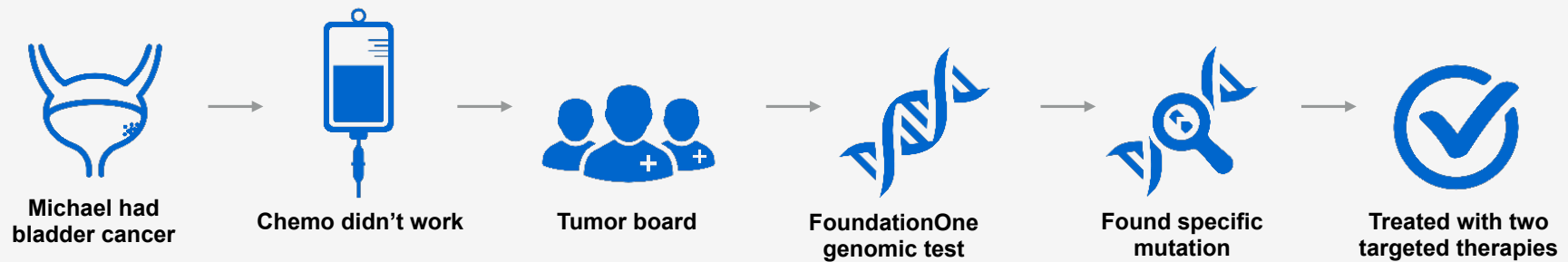


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## Michael's journey

*Combining the power of diagnostics, data and therapy to save his life*



Today, access to multiple data sets and targeted therapies are **MAKING PATIENT CARE MORE COST-EFFECTIVE FOR HOSPITALS AND IMPROVING PATIENT OUTCOMES**



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## New era of healthcare challenges



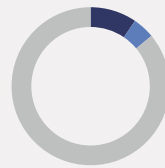
**86% of all healthcare costs** are associated with managing chronic disease<sup>1</sup>



**Staffing shortages** continue to rise across healthcare



The **aging population** is significantly driving this rise in costs;<sup>2</sup> **61% increase in morbidity** due to cardiac conditions, cancer and infectious disease by 2030<sup>3</sup>



Healthcare spending is projected to consume **9.5%–14% of global GDP** by 2060<sup>4,5</sup>

<sup>1</sup>CDC. Chronic disease overview. <https://www.cdc.gov/chronicdisease/overview/index.htm>. June 28, 2017. Accessed October 6, 2017. [http://www.oecd.org/officialdocuments/publicationsdocuments/default.asp?lang=en&langData=en\\_GB&parentUrl=/wpr/2017/63/doc/annexes/En](http://www.oecd.org/officialdocuments/publicationsdocuments/default.asp?lang=en&langData=en_GB&parentUrl=/wpr/2017/63/doc/annexes/En)

<sup>2</sup>Disease Burden 2030 Fact Book. Divisional Medical and Scientific Affairs. June 24, 2015.

<sup>3</sup>OECD. Organization for Economic Cooperation and Development. OECD (2013). "What Future for Health Spending?" OECD Economics Department Policy Notes. No. 19. June 2013.

<sup>4</sup>[https://read.oecd-ilibrary.org/social-issues-migration-health/health-at-a-glance-2017\\_health\\_glance-2017-en#page11](https://read.oecd-ilibrary.org/social-issues-migration-health/health-at-a-glance-2017_health_glance-2017-en#page11).



**By 2020, medical  
knowledge will  
double itself every...**



<sup>1</sup><https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3116346/>

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# Data is accelerating changes in healthcare

*Opportunity to address some of the complexity*



## REAL-WORLD DATA AND DIAGNOSTICS

New and alternative  
**DATA SOURCES**  
are available



## ANALYTICS

Leading organizations  
to incorporate  
**DATA INTEGRATION  
AND ANALYTICS**



## PATIENTS, CLINICIANS, PAYERS

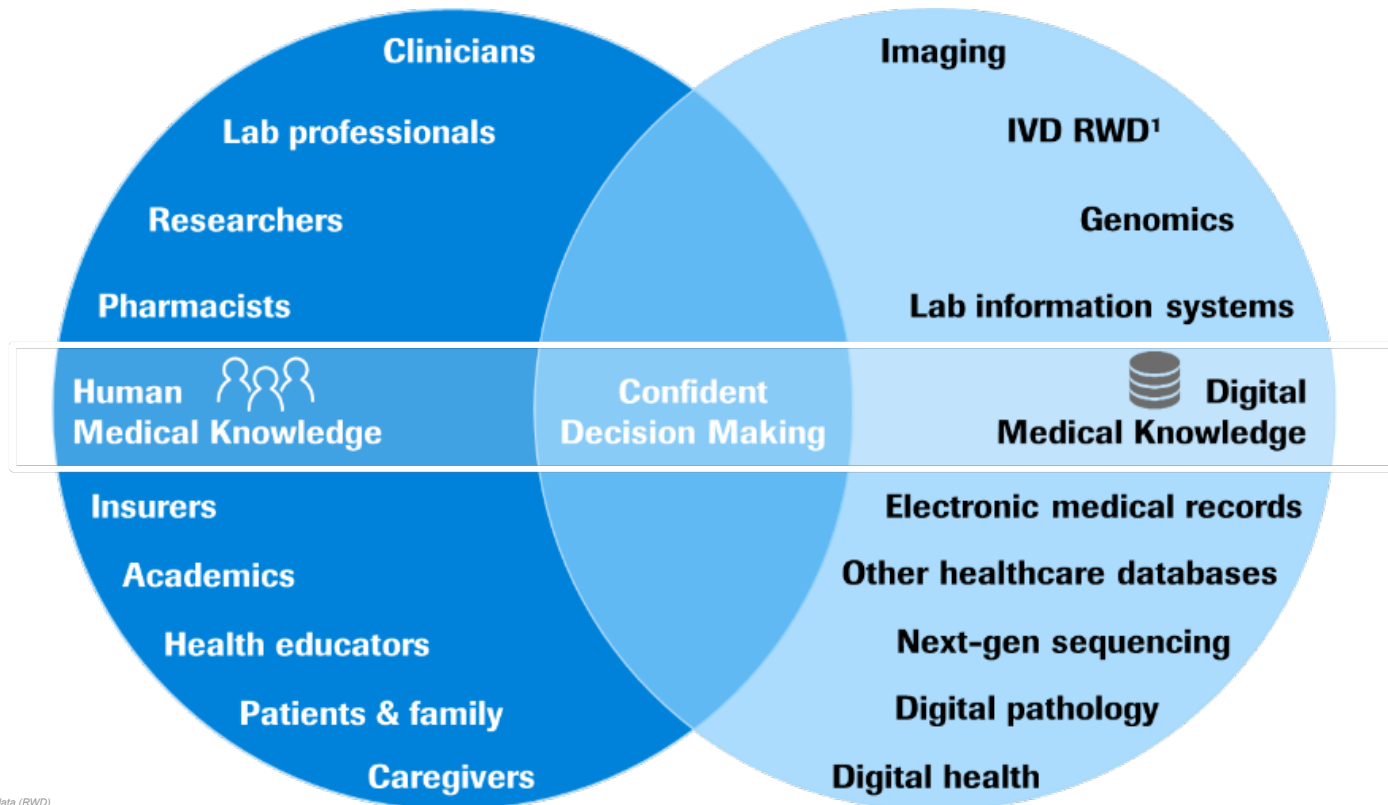
Now stakeholders have  
an increased focus on  
**OUTCOME** and  
**VALUE-BASED CARE**

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# Opportunity – Data Enabled Healthcare

*Good medicine is the result of human & digital medical knowledge*



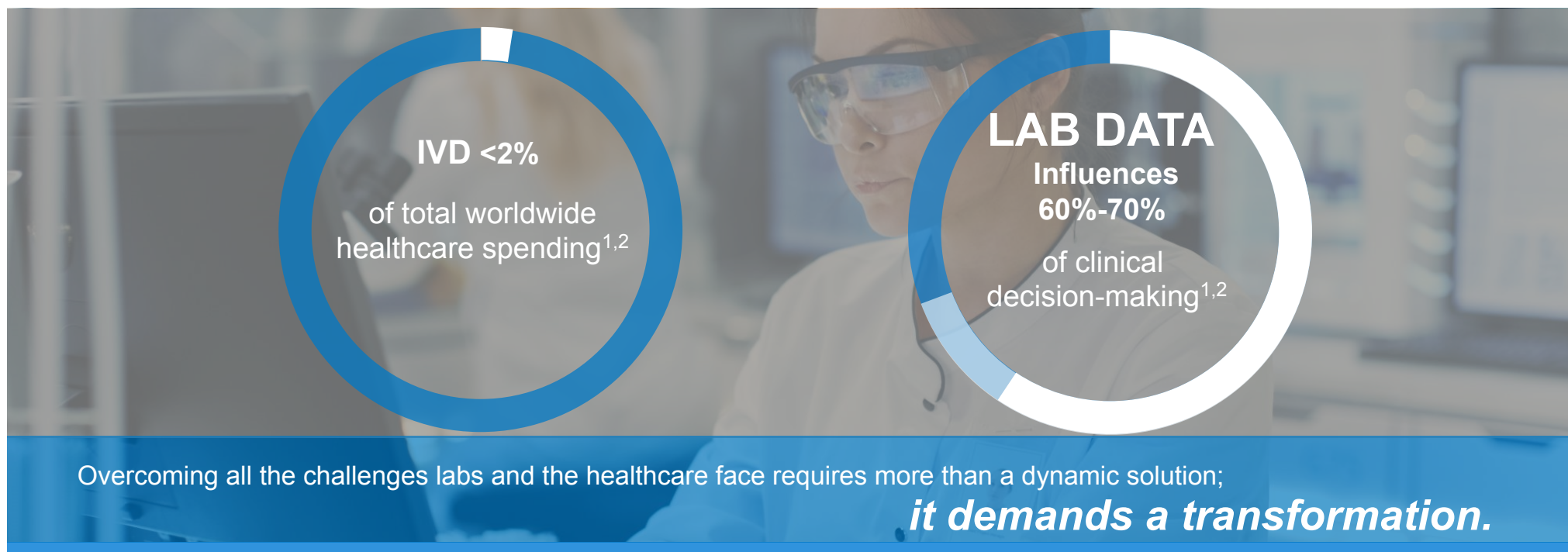
List not exhaustive  
<sup>1</sup> In-vitro diagnostics (IVD) real-world data (RWD)

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# The laboratory is the engine of digital transformation

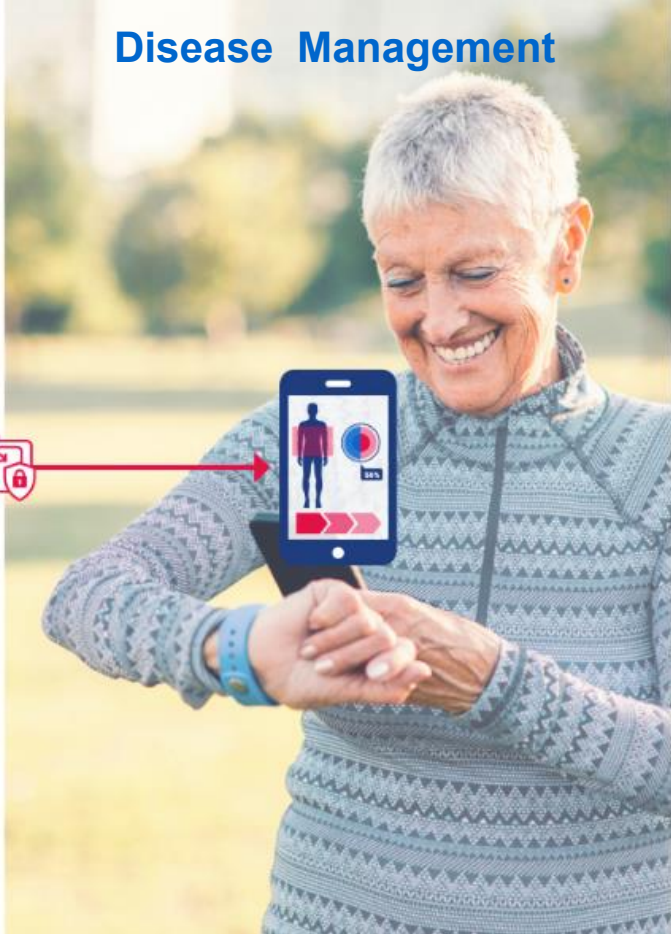
## *Foundation for good clinical decision-making*



1. European IVD Market Statistics, EDMA, 2013  
2. Rohr U-P, Binder C, Dieterle T, Giusti F, Messina CGM, Toerien E, et al. (2016) The Value of In Vitro Diagnostic Testing in Medical Practice: A Status Report. PLoS ONE 11(3): e0149856. <https://doi.org/10.1371/journal.pone.0149856>.

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# Digital Transformation at Roche Diagnostics





# Patient journey optimization in heart failure

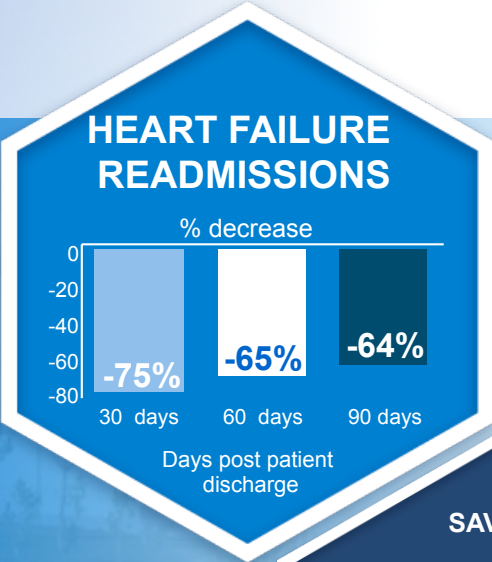
## Hospital Juan Ramon Jimenez — Spain

608 beds

Public hospital

### MAIN REASONS FOR ACTION

- Optimize patient journey by using diagnostic information



### SAVINGS

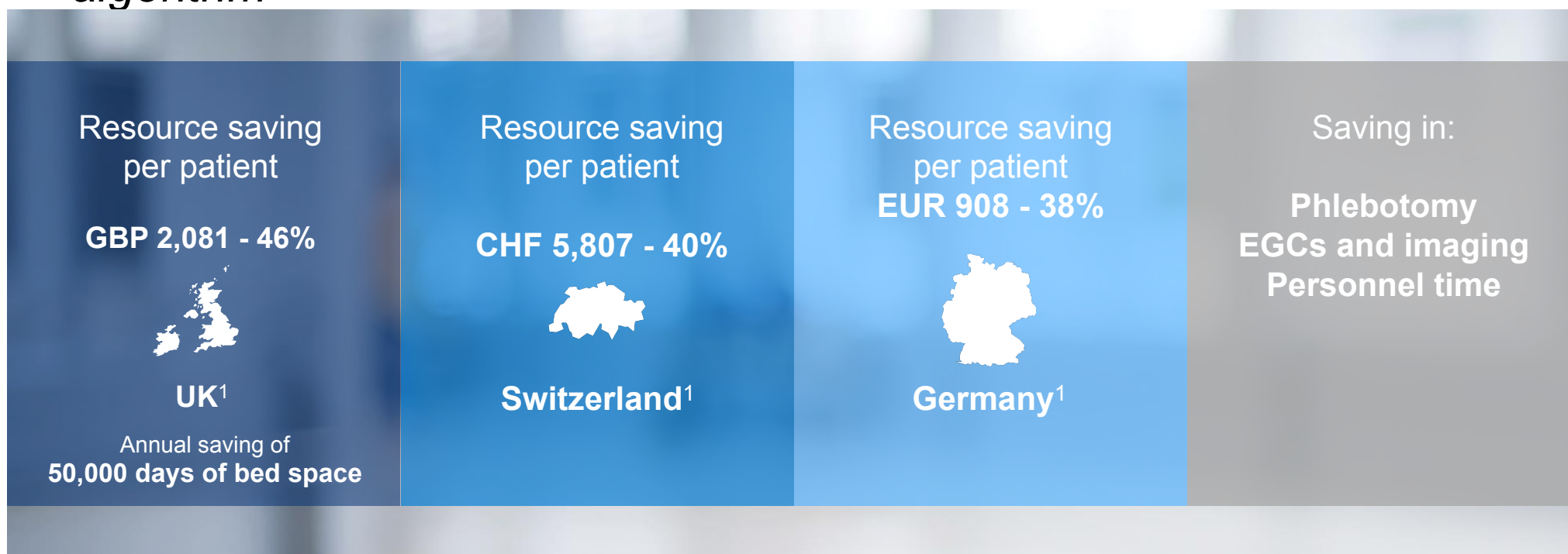
**Achieved 1.5M EUR**  
per year in savings for hospital

Source: Customers In Sight



# Rapid heart attack diagnosis reduces resource use

*Significant savings possible in the ER with Roche cTnT-hs 1h algorithm*



1. Ambavane, A. et al. (2017). PLoS One 12(11), e0187662. Cost savings vs Standard of Care (SoC)

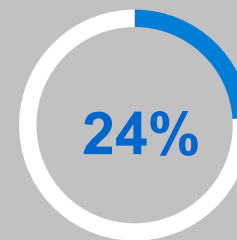
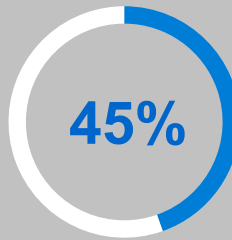
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## Preeclampsia testing helps reduce pregnancy care costs

*Example from Germany shows savings from fewer unnecessary hospitalizations*

Use of the Roche sFlt-1/PIGF ratio can **reduce hospitalization rates**<sup>1</sup>



*Expected cost saving 361 EUR per patient\**

*Expected annual cost savings of more than 39 mEUR nationally in Germany<sup>†,2-4</sup>*

sFlt-1/PIGF reimbursed by statutory health insurance in Germany, starting Oct 2019



PE: Preeclampsia; PIGF: Placental growth factor; sFlt-1: Soluble fms-like tyrosine kinase-1  
\*Robust to plausible changes in main parameters. † Based on 108,968 pregnant women per year presenting with hypertensive disorders<sup>2-4</sup>  
1. Schlembach D1, BMC Health Serv Res. 2018 Aug 6;18(1):603. doi: 10.1186/s12913-018-3406-1. 2. www.gbe-bund.de 3. Engel J, et al. Der Klinikarzt 2012; 4. Dieff A, et al. Geburtshilfe Frauenheilkd 2015



# Using data from multiple sources to support decision making





# NAVIFY<sup>®</sup> Decision Support Portfolio

*NAVIFY<sup>®</sup> Tumor Board solution for oncology care teams*



Secure Patient Data



Collaboration Among Specialists



Track Tumor Board Decisions & Follow Up



Increased Workflow Efficiency



Comprehensive Patient Overview



Standardization Across Tumor Boards



- NAVIFY Apps:**
- Clinical Trial Matching
  - Publications search
  - Guidelines ( development)

Now available in select markets  
NAVIFY.com/tumorboard  
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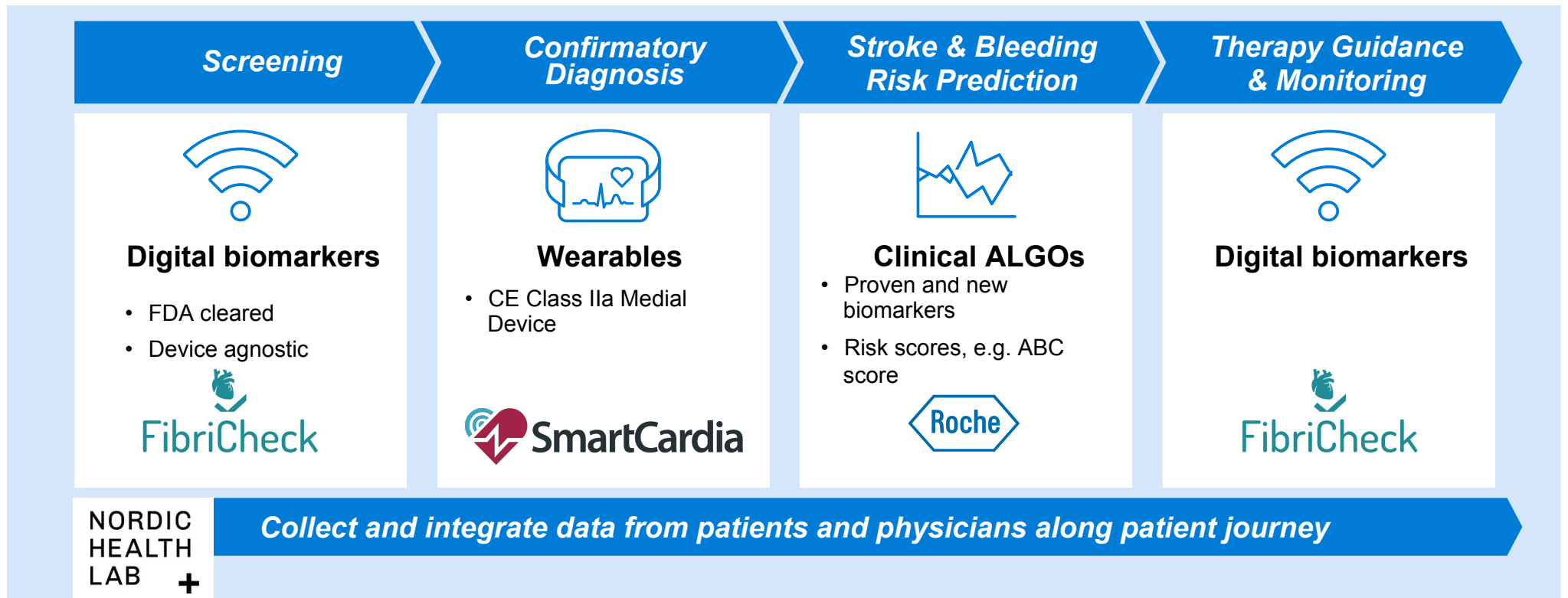
# Disease Management





# Digital tools supporting Disease Management

## *Improved diagnosis and management of atrial fibrillation patients*



Disclaimer: The displayed solution is a concept and not yet established or proven with clinical studies.  
Disclaimer: All claims and data included in this presentation belong to the respective third parties. Roche is not responsible for the validity of these claims. Roche is working on research projects with these third parties.

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## Closing thoughts

The role of In-vitro diagnostics (IVD) testing is **under valued** in clinical decision-making and we believe it can **reduce costs** and support a **positive impact** on patient outcomes

Clinical decision support tools can **fundamentally change** the way we **diagnosis and treat** patients

By leveraging the combined strengths of **diagnostic testing, digital tools and therapy**, we can help close the gaps in patient care and aspire to **make a real difference** in the lives of patients



***Doing now what patients need next***