

**COME L'INTELLIGENZA ARTIFICIALE STA CAMBIANDO,
E CAMBIERÀ GLI ALGORITMI DEI DISPOSITIVI
CARDIACI IMPIANTABILI**

L'AI che trasforma i dati in valore clinico, il nuovo gold standard di efficienza nei loop recorder

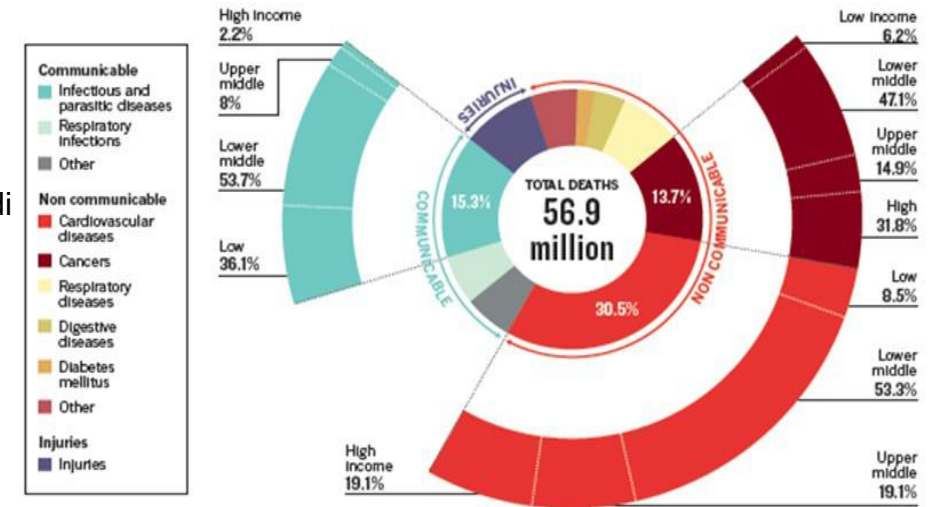
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GLOBAL DISEASE BURDEN VS. HEALTH CARE WORKFORCE

Clinical need

- Aumento **pazienti cronici** e riduzione **risorse umane ed economiche**

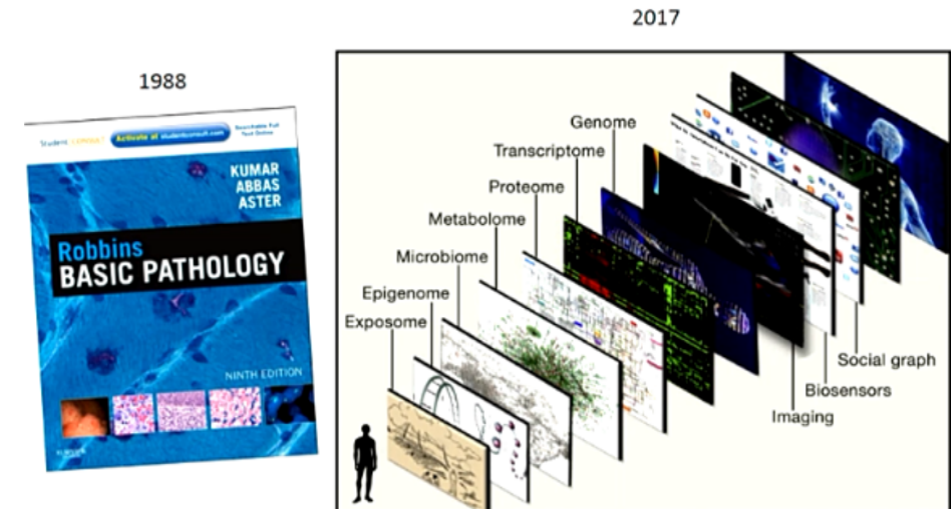
- 57 paesi al di sotto della soglia di copertura sanitaria critica dell'OMS
- 4.3 M in tutto il mondo di mancanza di operatori sanitari inclusi medici, infermieri e tecnici



D. Butler. Nature. 2011; 477:261 (UN.NCD)

- Le patologie cardiovascolari non sono piu' condizioni statiche bensì **dinamiche e multidimensionali**
- Necessita' di una «**precision medicine**»

New Taxonomy of Disease



2016



European Heart Journal
doi:10.1093/eurheartj/ehv416

EHJ POSITION STATEMENT

Eur Heart J 2016; 37: 63 – 6

e-Health: a position statement of the European Society of Cardiology

Martin R. Cowie^{1*}, Jeroen Bax², Nico Bruining³, John G. F. Cleland⁴, Friedrich Koehler⁵, Marek Malik⁶, Fausto Pinto⁷, Enno van der Velde⁸, and Panos Vardas⁹

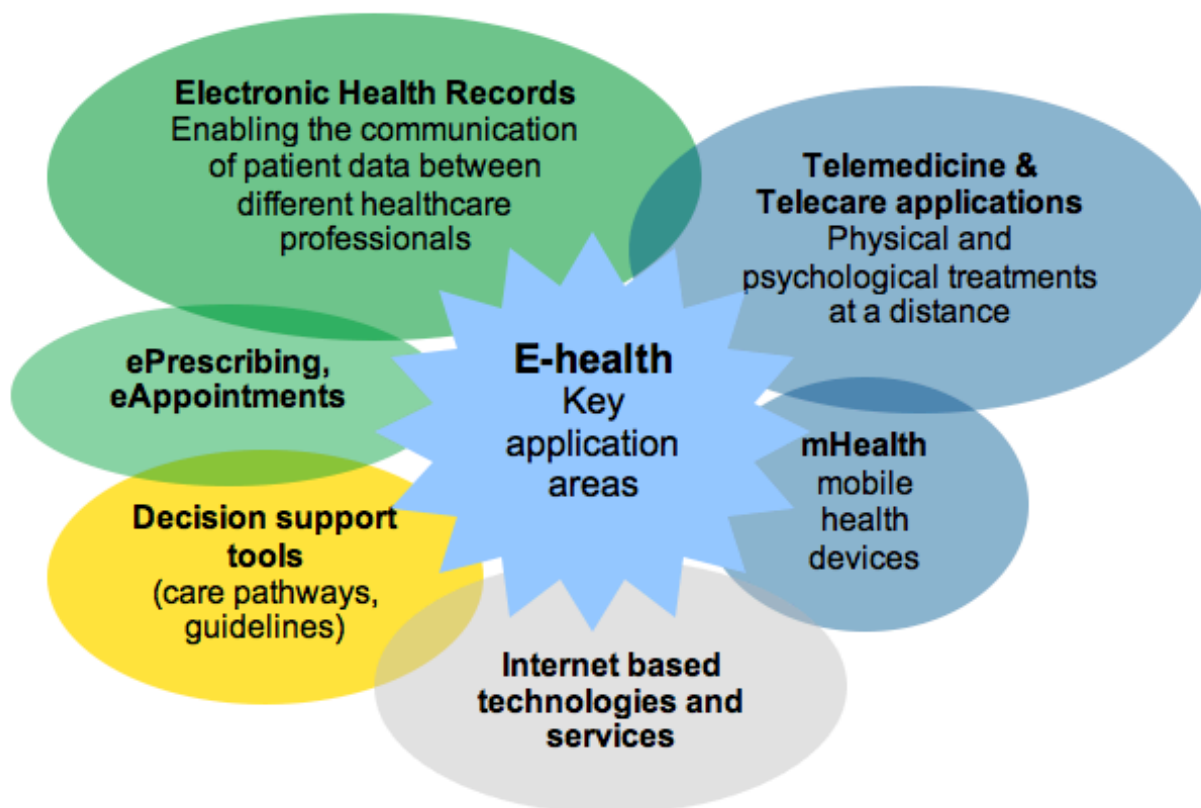


Table 1 The domains of e-health, involving healthcare administration and support, education, healthcare delivery, and research

- (1) Telemedicine and telecare (including disease management services, remote patient monitoring, teleconsultations, and homecare)³
- (2) Clinical information systems (electronic medical records, decision support and monitoring of clinical and institutional practice)
- (3) Integrated regional and national information networks and associated e-referrals and e-prescribing
- (4) Disease registries and other non-clinical systems used for education, public health, patient/disease-related behaviour, and healthcare management
- (5) 'Mobile' health (m-health) including mobile applications ('Apps'): medical and public health practice supported by mobile technologies delivering health information, screening patients, monitoring physiological signs, providing direct care and patient education (sometimes considered part of telemedicine,³ but increasingly less medicalized)
- (6) 'Personalized' health (p-health): wearable or implantable micro- and nano-technologies with sensors and/or therapy delivery devices to help facilitate health and social care decision making and delivery (including fall detectors, implantable insulin pumps, ...)
- (7) 'Big Data'—large-scale integration and analysis of heterogeneous data sources, usually of high volume (amount of data), velocity (speed of data in and out), and variety (range of data types and source)⁴, ideally linked at the individual person level to provide a more holistic view of a patient/individual and shed light on social and environmental factors that may influence health.⁵

BIG DATA - UNANSWERED QUESTIONS

Big Data is one of the **biggest and most pervasive evolutions** of the digital world.

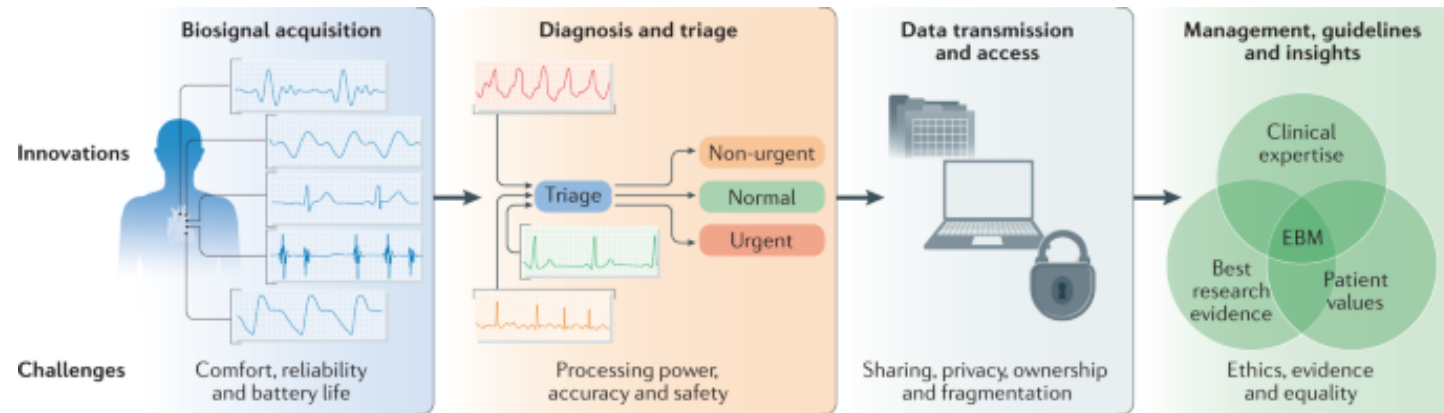
A trend that will continue and will have a deep **impact on our life and on our way of managing, diagnosing and treating patients.**



Can technology "improve" medicine?

Can Big Data be used to improve health and care, predict diseases or change behaviors?

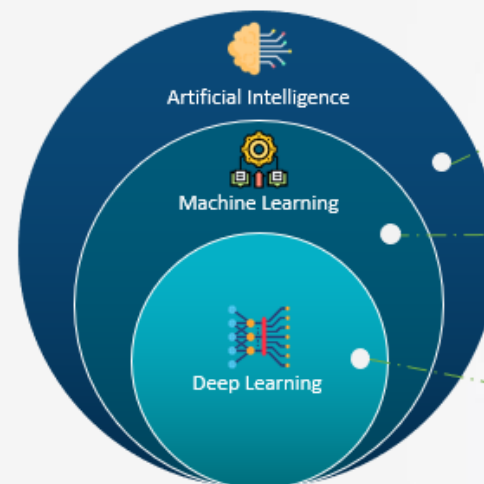
It's not just about the sensors...



Krittanawong C et al. Nat Rev Cardiol 2021; 18 (2): 75 - 91

BIG DATA ML to the rescue...

- If designed, validated and implemented appropriately, **ML will HELP** in acquiring, interpreting and synthesizing healthcare data from multiple sources and putting it at our fingertips....."like an expert subspecialist to call upon for every patient and for every clinical situation"....



ARTIFICIAL INTELLIGENCE

A technique which enables machines to perform intelligent tasks and often mimic human intelligence

MACHINE LEARNING

A subset of AI which uses statistical methods to enable machines to improve with experience

DEEP LEARNING

A subset of ML which uses multi-layer artificial neural networks in order to learn without human instructions

ARTIFICIAL INTELLIGENCE TIMELINE

1951 Creation of the first neural network: **SNARC**

1955 The concept of **Artificial Intelligence** is born

1967 The first pattern recognition model is developed: **Nearest Neighbor**

1974 1980 First Winter of AI

1985 **NetTalk** is invented and learns to pronounce words

1987 1993 Second Winter of AI

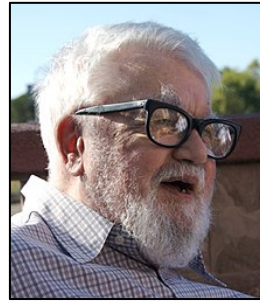
1997 **Deep Blue** defeats the chess world champion

2006 New algorithms are developed called "**Deep Neural Networks**" that enable objects to be detected in pictures and videos

2010 **Watson** computer beats two Jeopardy game show champions

2016 **AlphaGo** program defeats Go world champion

2018 **Tesla** launches self-driving vehicles



John McCarthy
1927 – 1984

Dartmouth Summer Research Project on Artificial Intelligence (1956)

“We propose that a 2-month, 10-man study of **artificial intelligence** be carried out during the summer of 1956 at Dartmouth College in Hanover, New Hampshire.

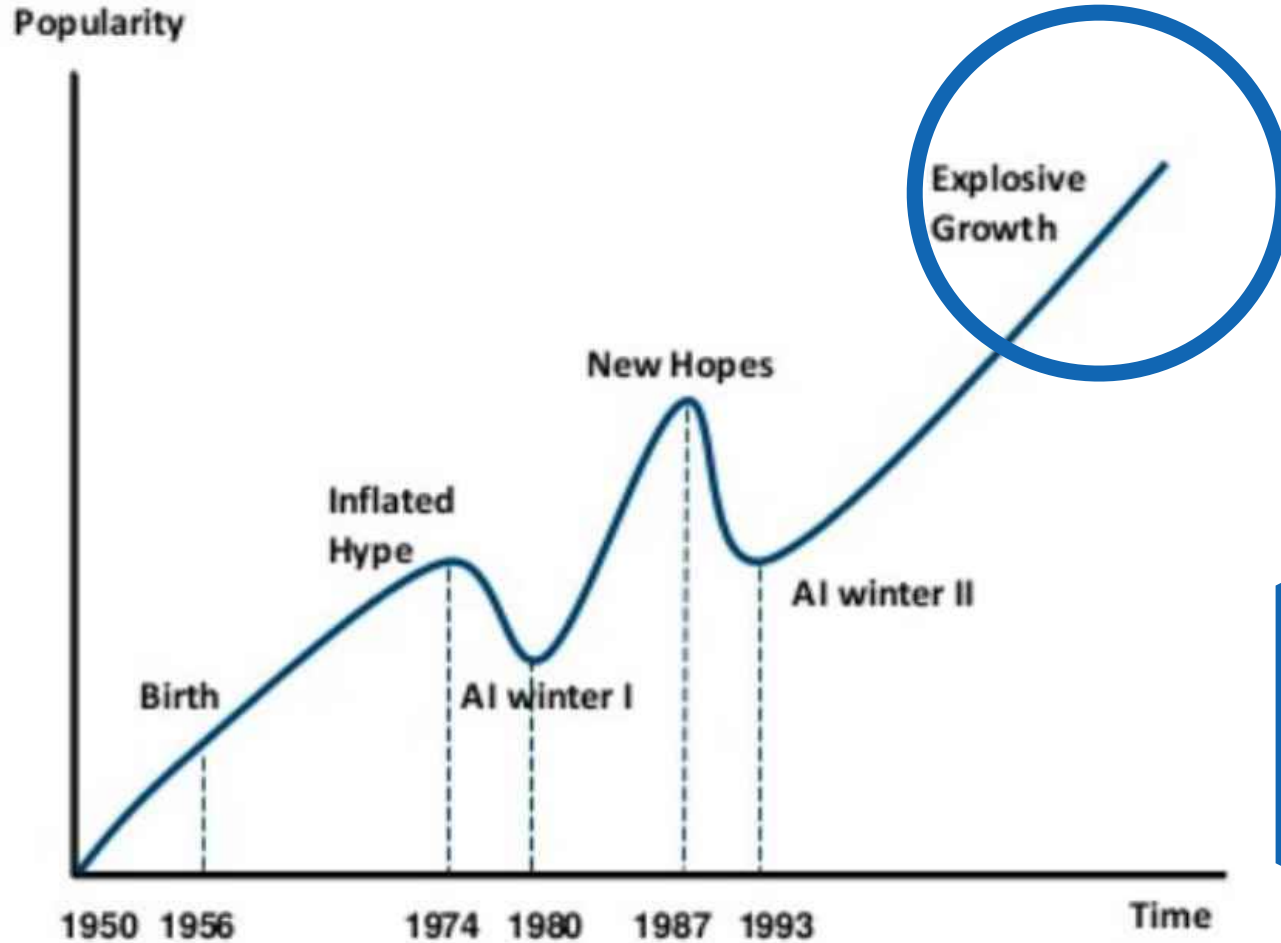
The study is to proceed on the basis of the conjecture that **every aspect of learning or any other feature of intelligence can in principle be so precisely described that a machine can be made to simulate it.**

An attempt will be made to find how to make machines use language, form abstractions and concepts, solve kinds of problems now reserved for humans, and improve themselves. We think that a significant advance can be made in one or more of these problems if a carefully selected group of scientists work on it together for a summer.”

WHY THE LACK BEFORE THE «EXPLOSION» ?

ai

evoluzione e fattori



dat

i



algorithm

i



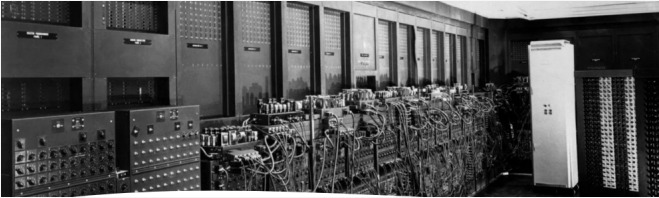
computazion

e

Artificial Intelligence Enablers

1. Computing power, speed and miniaturization...

From ENIAC (1946)...



- First programmable, electronic, general-purpose digital computer
- **167 m² , 27 tonnes**
- Could multiply a 10 digit number by another 10 digit number in 2.8 seconds

**>1M
more
power!**

...to iPhone 13 (2021)

A15 “Bionic” processor

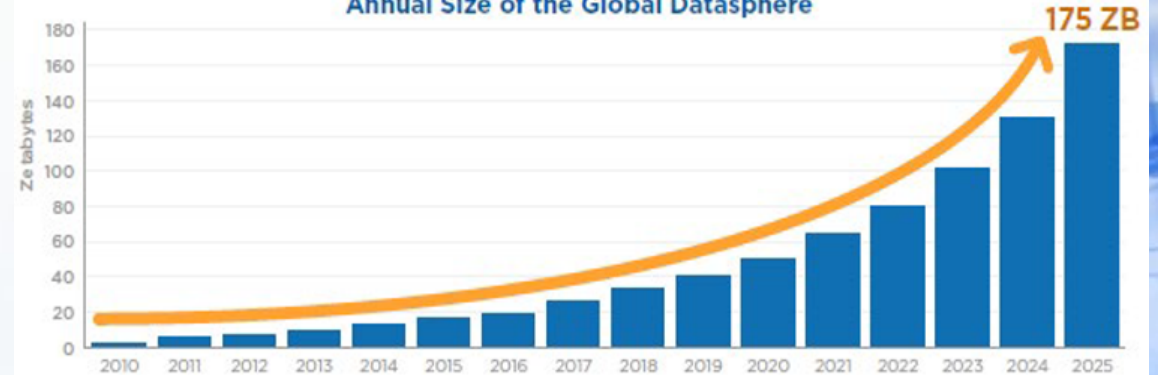
- **15 billion transistors**
- 3.93 GHz processing speed
- 15.8 trillion ops/second



2. Large amount of high quality, digital data

90% OF THE WORLD'S DATA HAS BEEN CREATED IN PAST 2 YEARS

Annual Size of the Global Datasphere



Source: Data Age 2025 report, sponsored by Seagate with data from IDC Global Datasphere, November 2018

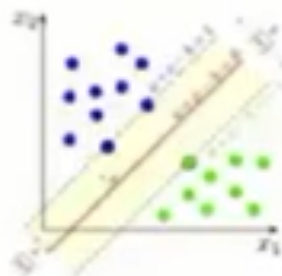
ZETABYTE = 10^{21} BYTES = 1 TRILLION GIGABYTES

Volume of data/information created, captured, copied, and consumed worldwide from 2010 to 2024 (estimated)¹

3. Modelli e Algoritmi

machine learning classico

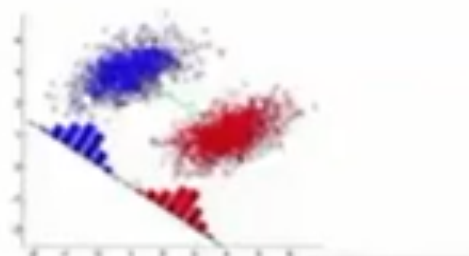
support
vector
machines



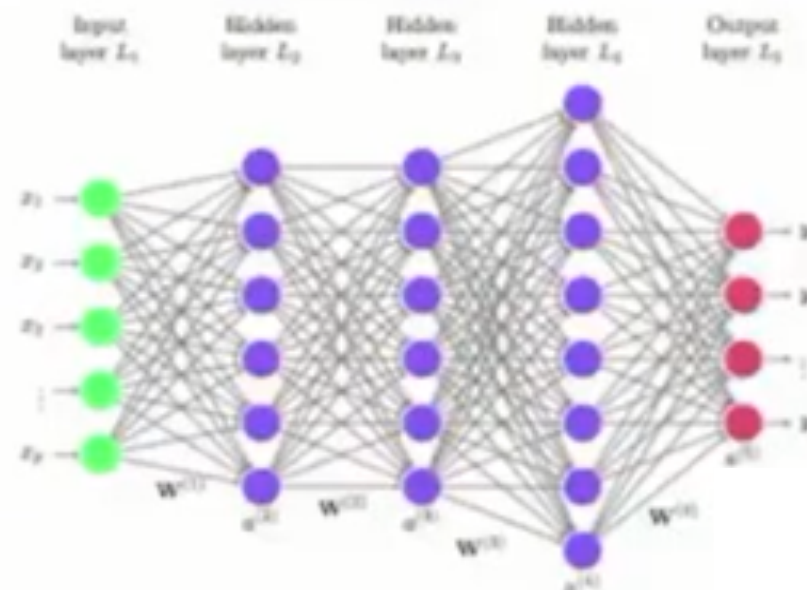
alberi di
decisione



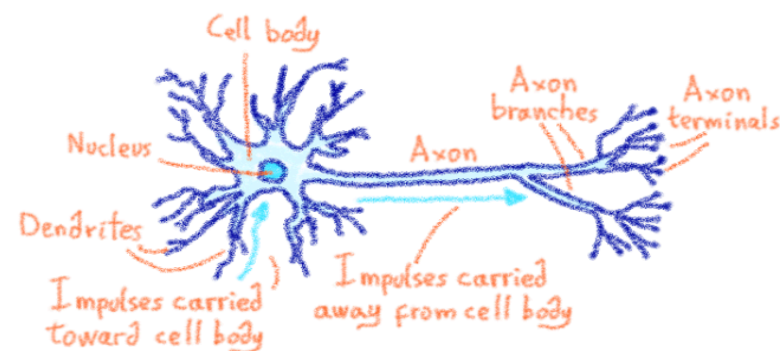
analisi
discriminante



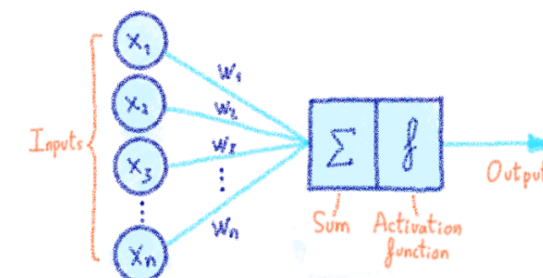
deep learning reti neurali artificiali profonde



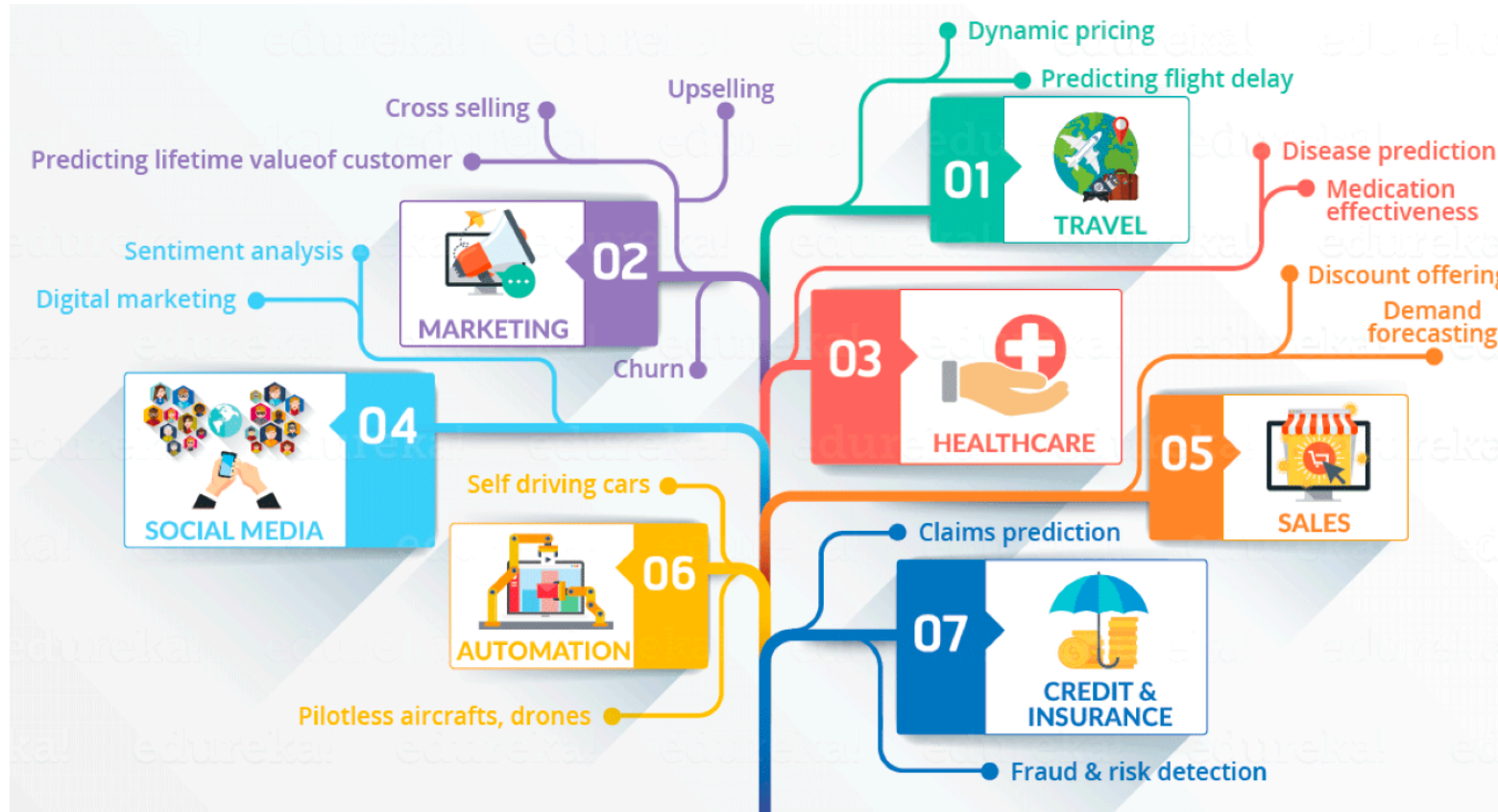
Biological Neuron



Artificial Neuron



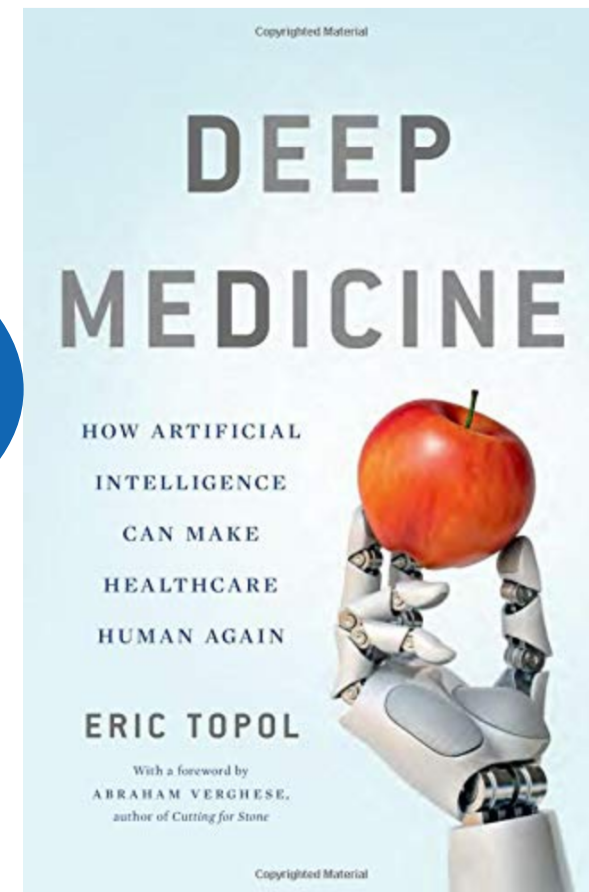
ai impatto



ai e salute ricerca



eric topol
director @ scripps research
translational institute



REVIEW ARTICLE | FOCUS

<https://doi.org/10.1038/s41591-018-0300-7>

nature
medicine

High-performance medicine: the convergence of human and artificial intelligence

Eric J. Topol 

ai e cardiologia

Applicazioni



A primer in artificial intelligence in cardiovascular medicine

Authors

Authors and affiliations

J. W. Benjamins, T. Hendriks, J. Knuuti, L. E. Juarez-Orozco, P. van der Harst



lettura automatica di
segnali



formulazione di diagnosi



stratificazione e
predizione
del rischio



risposta al trattamento e
prognosi

AHA SCIENTIFIC STATEMENTS

Use of Artificial Intelligence in Improving Outcomes in Heart Disease: A Scientific Statement From the American Heart Association

Antonis A. Aroundas, PhD, Chair, Sanjiv M. Narayan, MD, PhD, FAHA, Vice Chair,

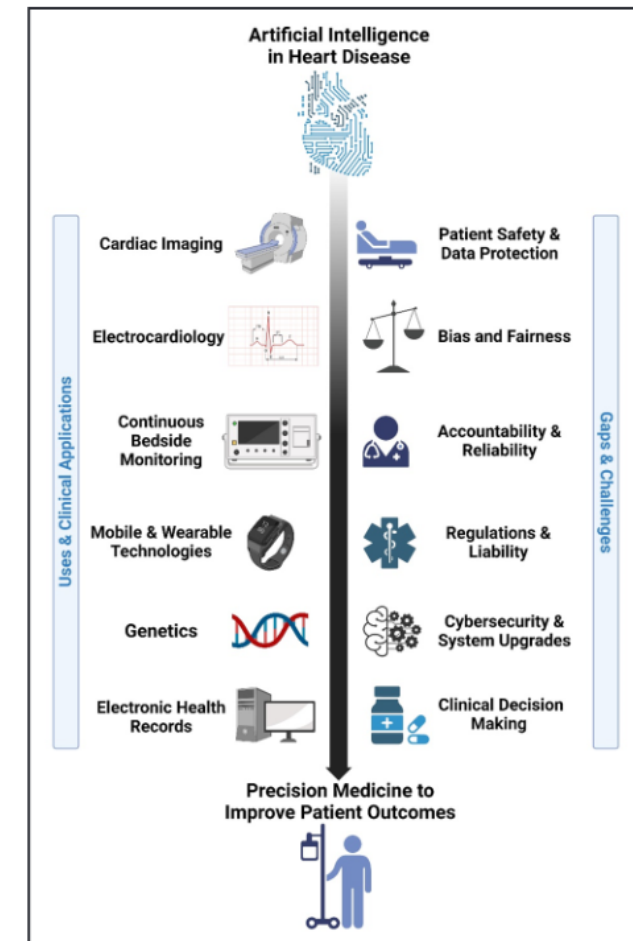
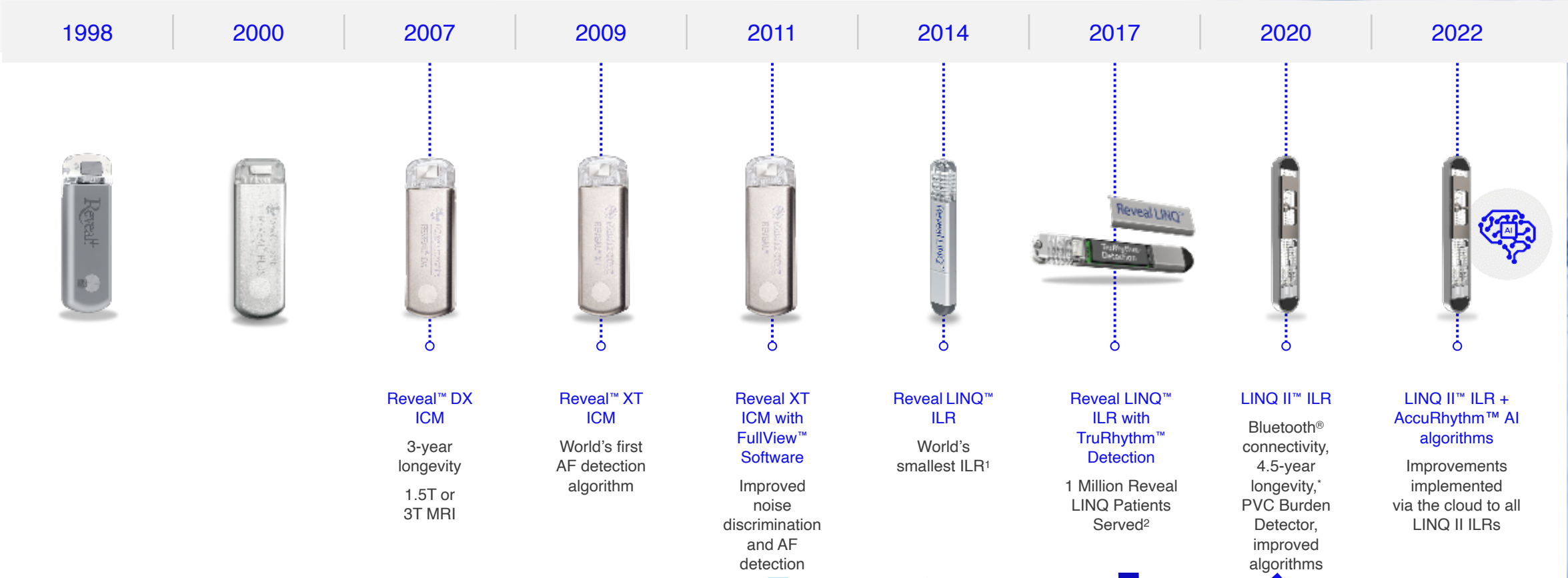


Figure. Artificial intelligence in heart disease.

New Generation of ICM are the proof that Artificial intelligence can increase the speed, efficiency, and effectiveness of health systems

AccuRhythm™ AI for LINQ II ILR



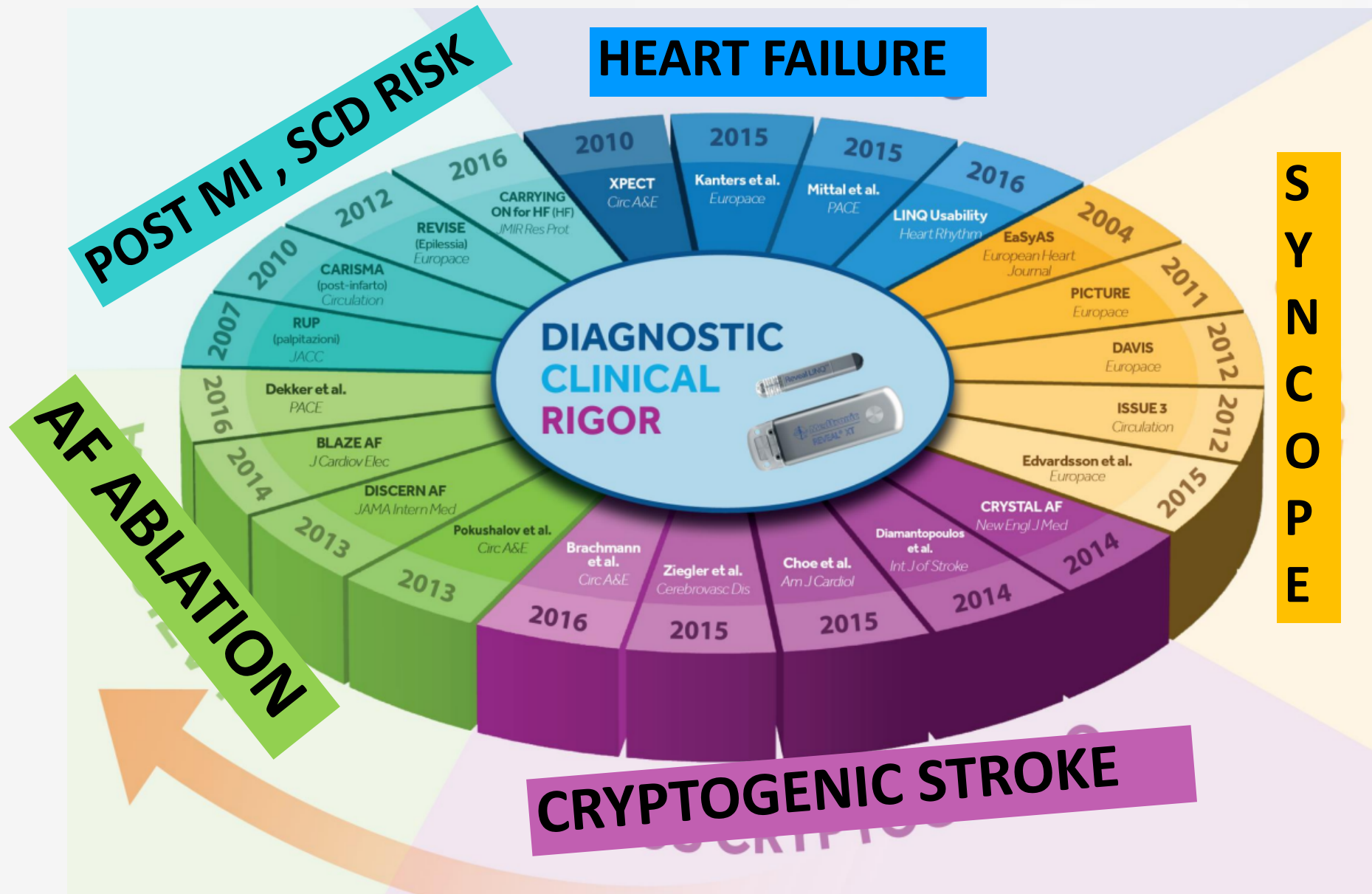
*Nominal settings.

¹ ICM Size Comparison Guide. 2021.
² Medtronic Reveal™ ICM family data. Data on file. 2021.

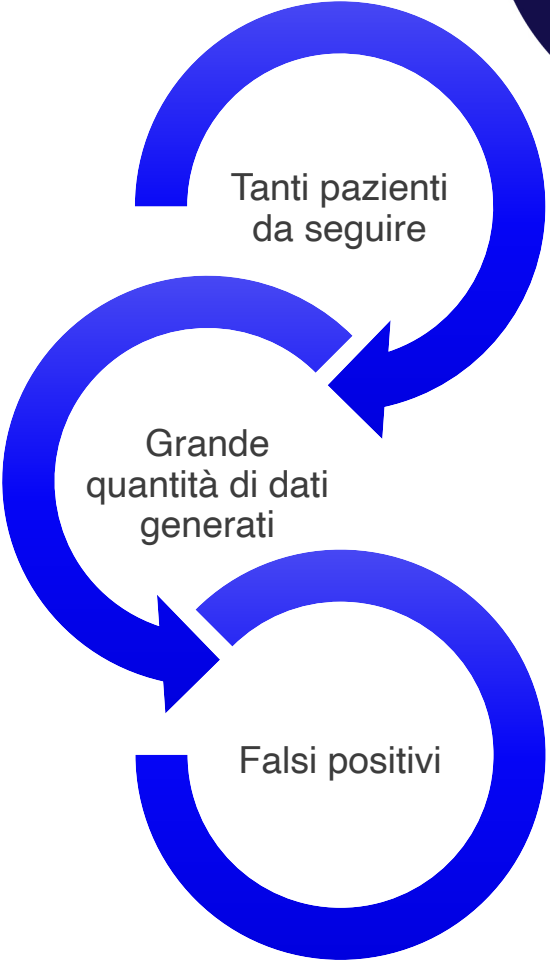
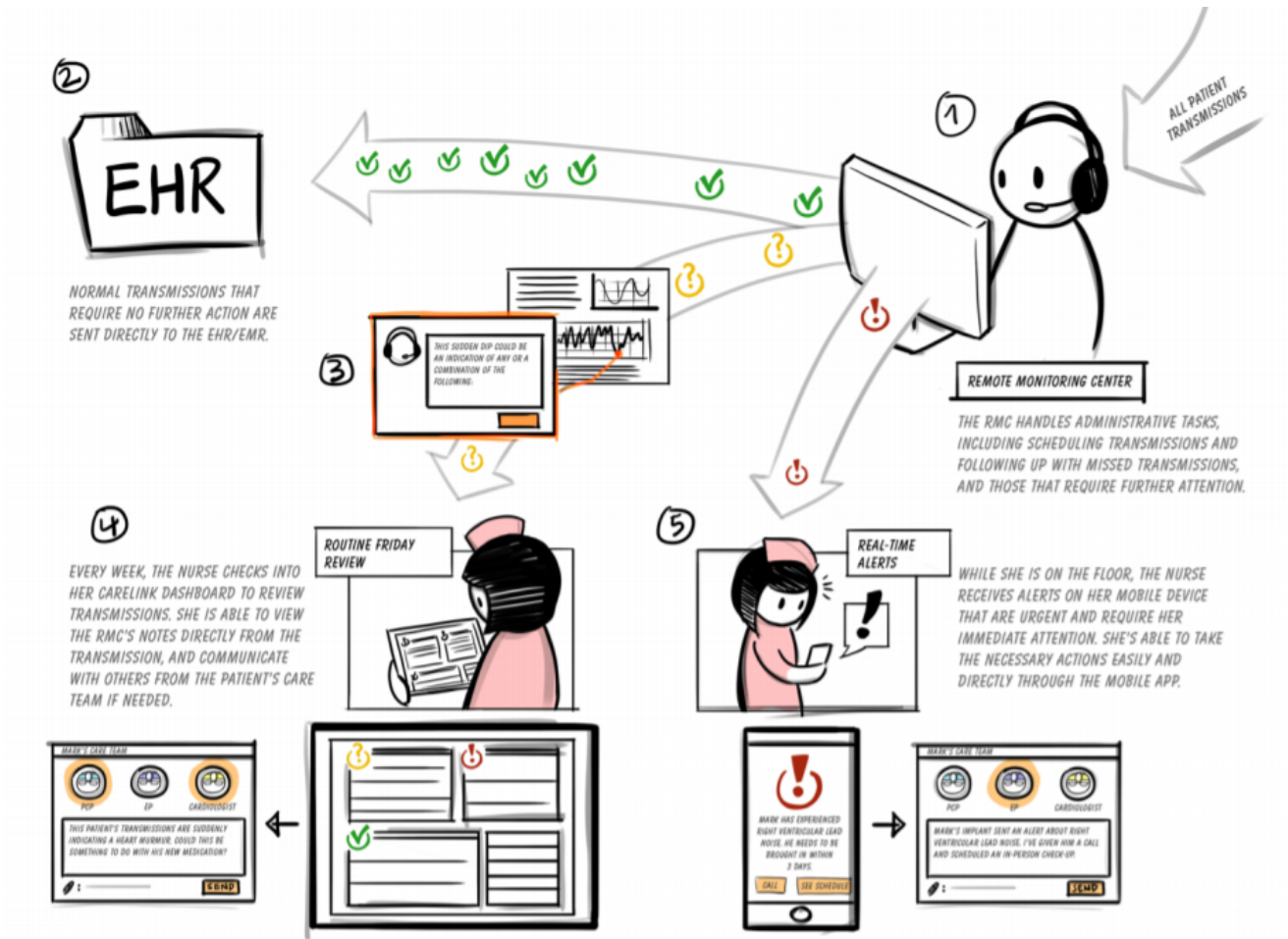
From Implantable
to Injectable

From Telemetry to
Bluetooth

Increasing evidences and enlarging indications...

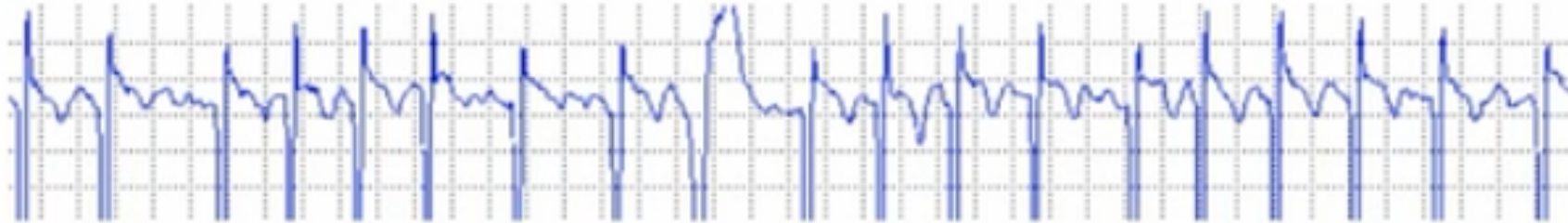


ILR & DATI

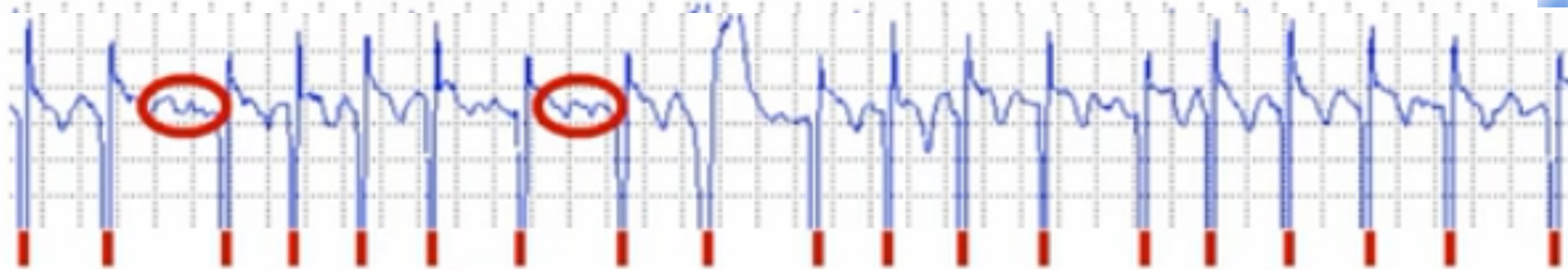


AI Algorithms to Address False Alerts

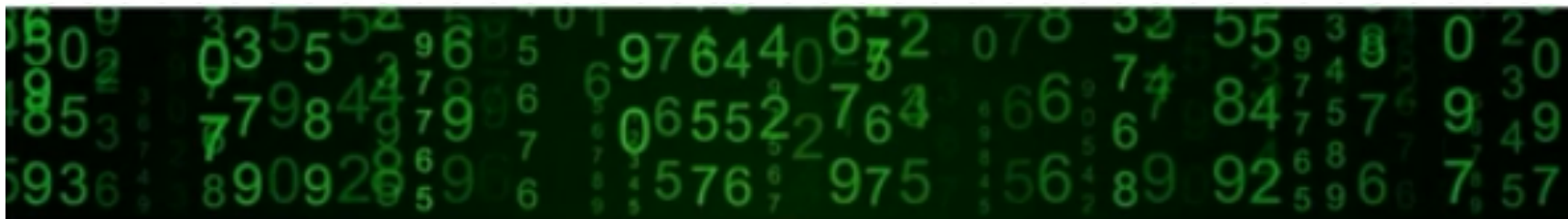
Physician



**Conventional
Algorithms**



**Artificial
Intelligence**



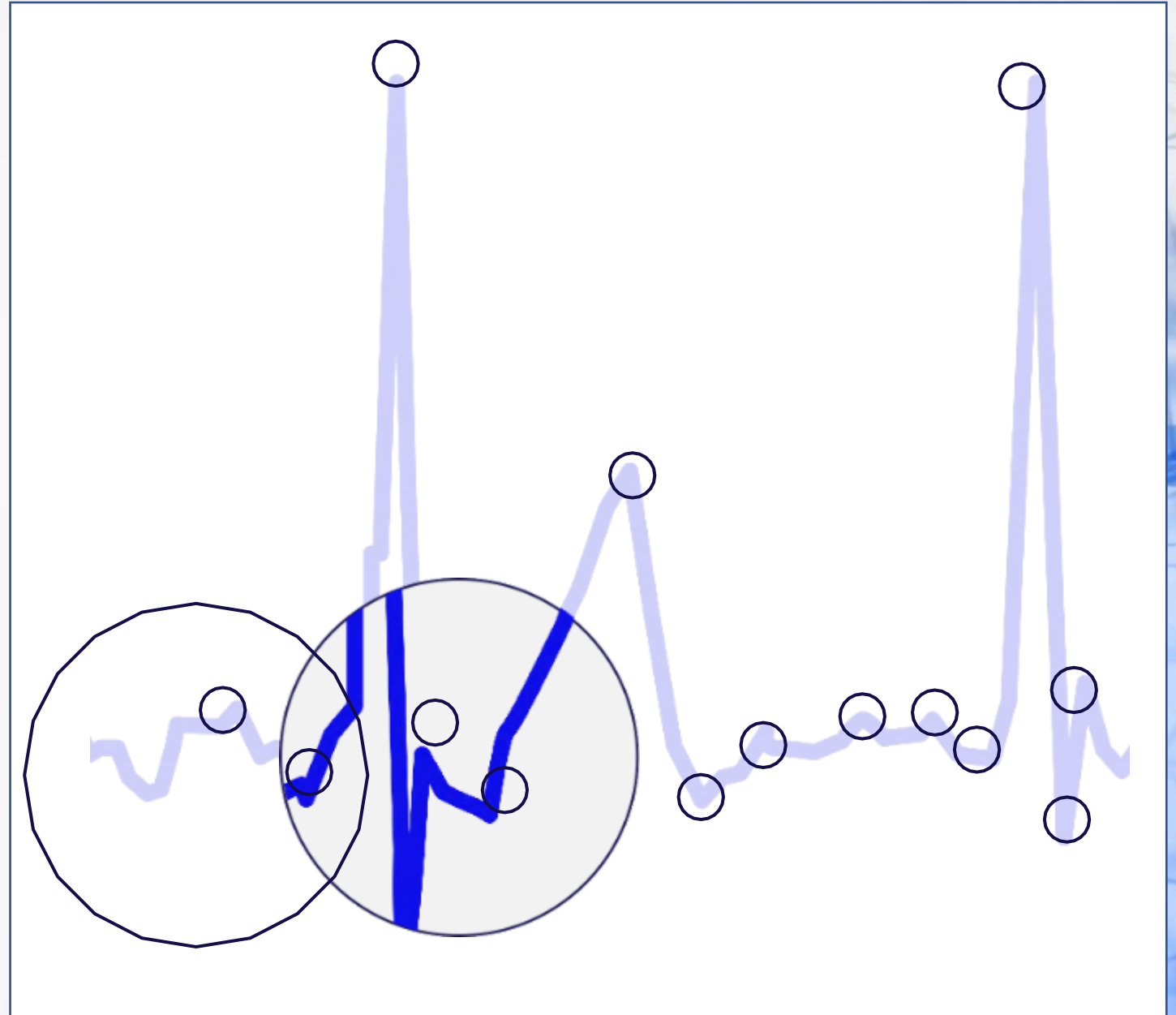
How AccuRhythm AI can help with Alert Burden?

Rate-based analysis

Relies heavily on R-R wave timing

Rhythm-based analysis

Reviews the whole strip and relationships between segments and waveform features in adjudication



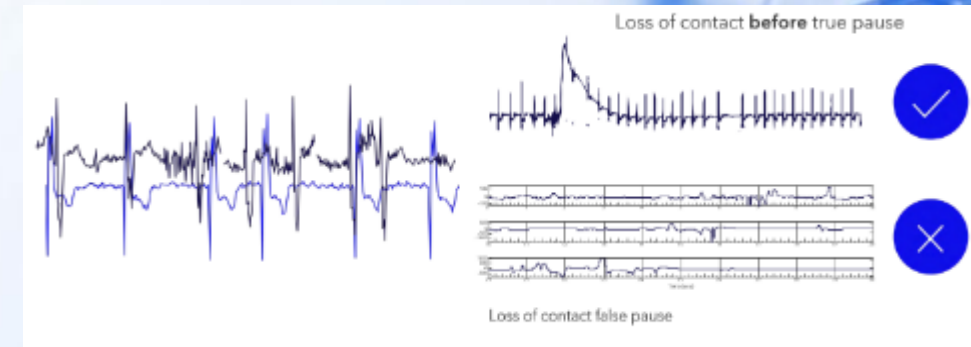
AccuRhythm AI Algorithm Development

>1,000,000 ECGs

- High volume of accurate subcutaneous data from ILRs
- Wide variety of data adding substantial volumes of rare and difficult to adjudicate events to training data events
- Each episode artificially modified to create a variety of realistic waveform modifications



Professionally adjudicated

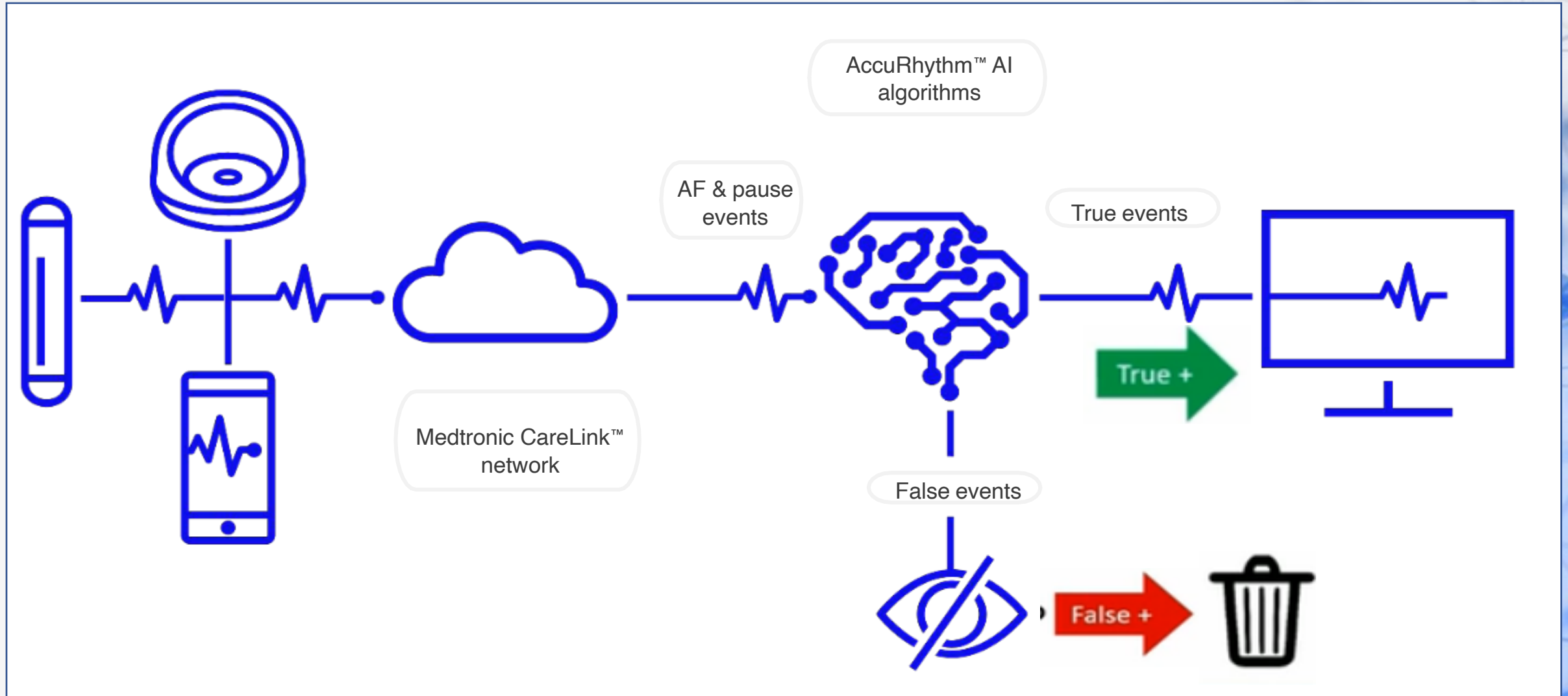


AI Training for Pause and AF algorithms

locked to retain unbiased behavior and preserve sensitivity

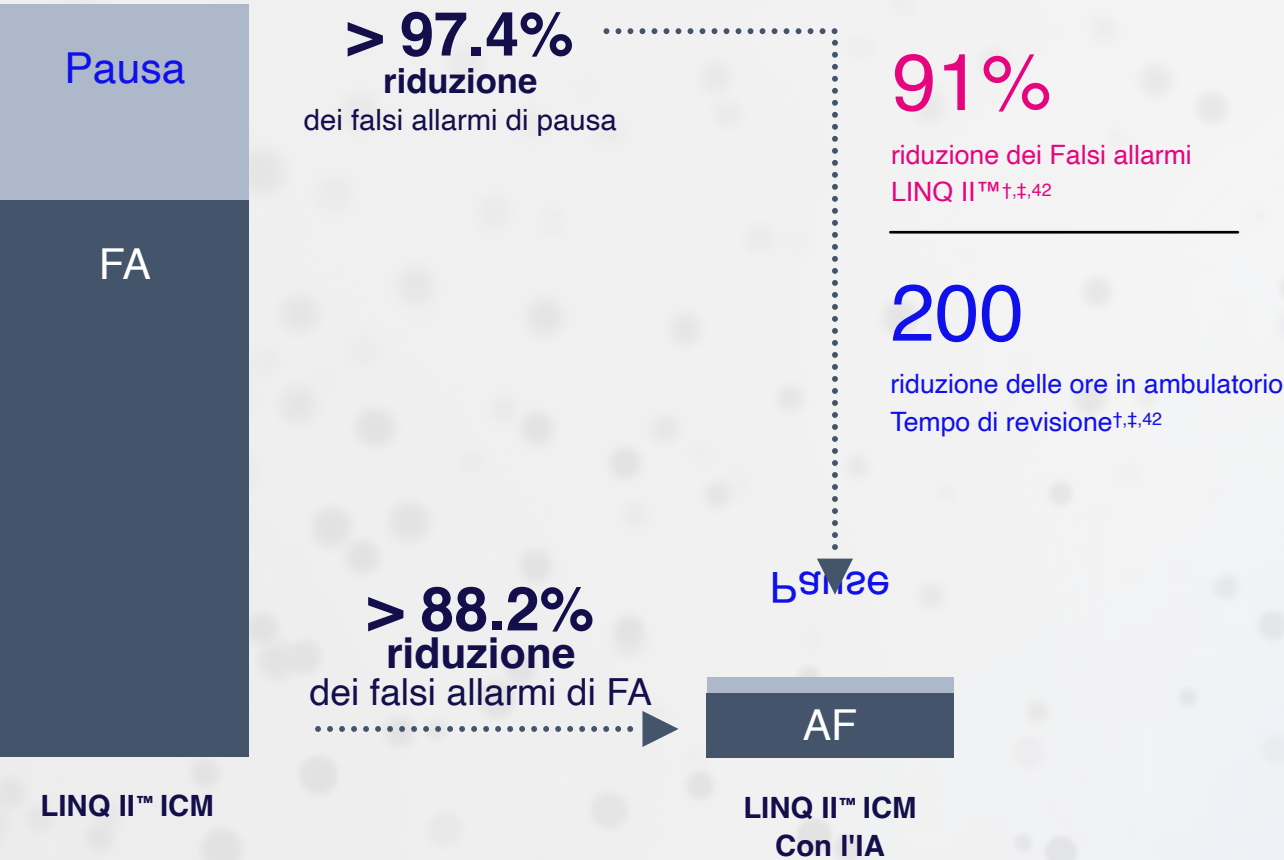


LINQ II™ data flow with AccuRhythm™ AI



Riduzione degli allarmi falsi LINQ II™, mantenimento della sensibilità

AF e Pause generano ~90% dei falsi allarmi negli ICM



†The validation study performance and time study results were calculated using 10,001 LINQ II™ patients to calculate false alarm reduction percentage.

L'ultimo sguardo a Reveal LINQ nel mondo reale - 17.037

25%

Ha ricevuto una
Procedura clinica
post LINQ

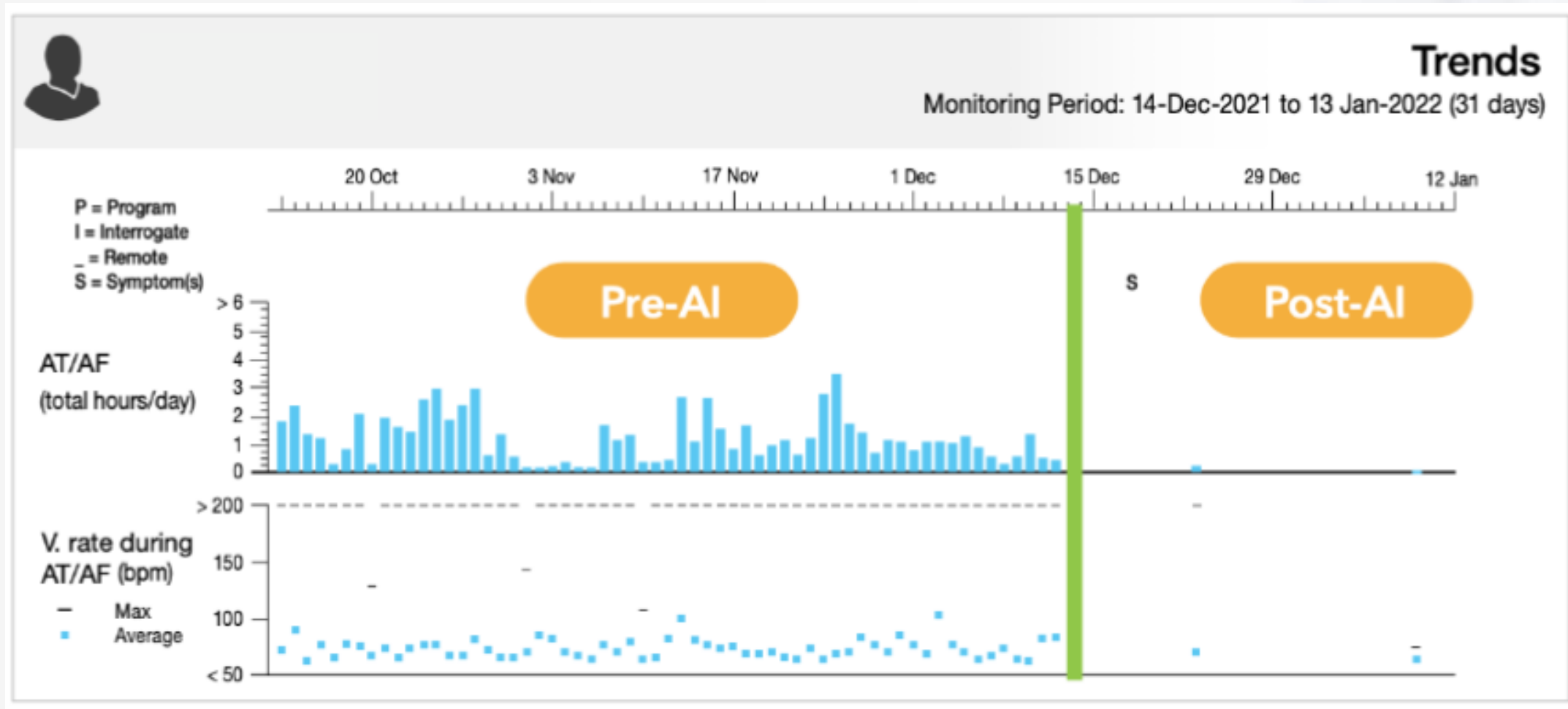
44%

Ha iniziato una nuova
terapia farmacologica
per aritmia post LINQ

54.5%

Ha ricevuto una
procedura e/o l'inizio di
una terapia
farmacologica
Post LINQ

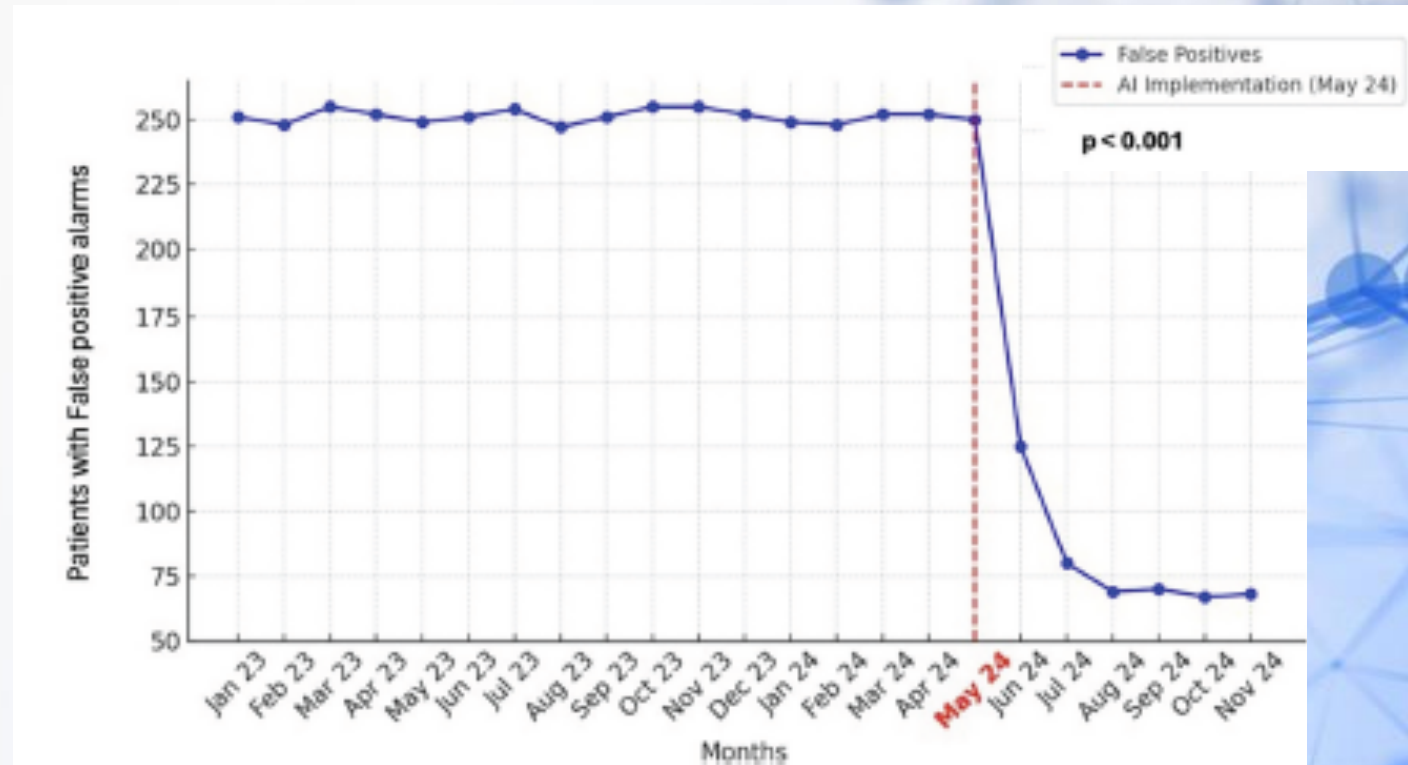
Real-life Clinical Case on AF*



* Bordonaro K, et al. Artificial Intelligence Dramatically Reduces Insertable Cardiac Monitor false episodes: single center real-world results and case studies. Presented at HRX September 2022; San Diego, CA

Optimising implantable loop recorder alerts with artificial intelligence: role of R-wave amplitude and workload reduction

1. AI significantly reduces false alerts and clinician workload, making remote monitoring scalable.
2. AI removes unnecessary alerts while preserving true clinical events and diagnostic accuracy.
3. Despite AI, optimal R-wave sensing remains essential to ensure high diagnostic quality.



AI – Enhanced ILR in pediatric patients

- AI significantly reduces nonactionable alerts in pediatric patients, improving monitoring efficiency.
- AI impact in pediatrics is driven by targeted suppression of high-frequency, low-value alerts
- AI enables more sustainable workflows in pediatric electrophysiology without compromising care.

AI-Enhanced ILR in Pediatric Patients: Reduction of Nonactionable Alerts

3-month analysis of 45 pediatric patients (LinQ2, Medtronic with AccuRhythm AI)



45

Pediatric Patients

Mean age 10.8 ± 4.7 years

Total Alerts Generated

174

in 3 months

Alerts Eliminated by AI

76

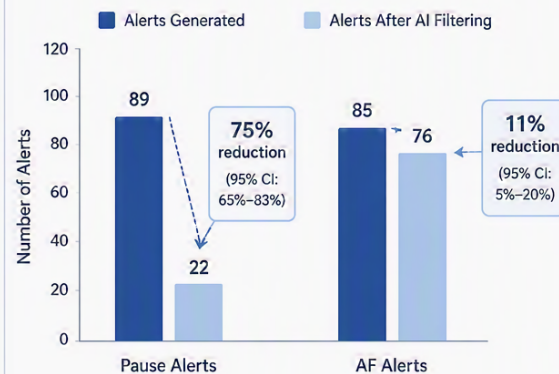
(67 pause + 9 AF alerts)

Overall Reduction of Nonactionable Alerts (NAAs)

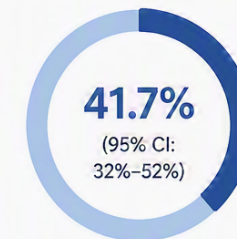
43.7%

(95% CI: 36.3%–51.3%)

Reduction of Alerts by Type



Mean Reduction per Patient



Average reduction in NAAs per patient over 3 months

Estimated Impact on Clinical Workflow



Estimated Time Saved

14 hours

over 3 months



Projected Time Saved

58 hours

per year



Approximate 4% reduction in full-time equivalent workload



AI-based filtering with AccuRhythm algorithms substantially reduces nonactionable alerts in pediatric patients, particularly pause alerts, leading to meaningful time savings and more sustainable clinical workflows without compromising patient care.

AccuRhythm AI

- AF Clinical Case

Numero di serie del dispositivo: 27-Sep-2022 Sincope

Dati Quick Look da: 19-Feb-2024 00:40 a 21-Feb-2024 00:41

	Corrente	Durata	Parametri
Sintomo	0	0	2 episodi da 15 min
Tachicardia	0	0	>150 min ⁻¹ , >=16 battiti
Pausa	0	0	>3 secondi
Bradicardia	0	0	<30 min ⁻¹ , >=4 battiti
AT	0	0	Off
AF	0	68	Tutti gli episodi
Tempo in AT/AF	0.0%	---	
PVC (% battiti)	0.5%	---	On

Stato della batteria



Buono

Osservazioni

- Nessuna osservazione

Numero totale episodi AF
dall'impianto

AccuRhythm AI

- AF Clinical Case

Stampa	ID n.	Valutazione	Tipo	Data	Rilevato hh:mm	Durata hh:mm:ss	Freq. V. max	Freq. V. mediana	Dettagli episodio
☐	41	←	AF	31-Oct-2022	23:32	00:02:00	51 min ⁻¹	45 min ⁻¹	Testo
☐	40	←	AF	31-Oct-2022	23:12	00:02:00	51 min ⁻¹	47 min ⁻¹	Testo
☐	38	←	AF	31-Oct-2022	21:26	00:02:00	55 min ⁻¹	51 min ⁻¹	Testo
☐	22	←	AF	26-Oct-2022	11:58	00:04:00	122 min ⁻¹	90 min ⁻¹	ECG

Stampa	ID n.	Valutazione	Tipo	Data	hh:mm	hh:mm:ss	Freq. V. max	Freq. V. mediana	episodio
☐	146		AF	16-Dec-2022	13:12	00:04:00	61 min ⁻¹	54 min ⁻¹	Testo
☐	145		AF	16-Dec-2022	10:08	00:04:00	67 min ⁻¹	67 min ⁻¹	ECG
☐	144		AF	16-Dec-2022	10:00	00:02:00	68 min ⁻¹	61 min ⁻¹	ECG

Stampa	ID n.	Valutazione	Tipo	Data	hh:mm	hh:mm:ss	Freq. V. max	Freq. V. mediana	episodio
☐	375		AF	14-Feb-2023	23:00	00:06:00	58 min ⁻¹	44 min ⁻¹	Testo
☐	374		AF	14-Feb-2023	22:38	00:02:00	56 min ⁻¹	43 min ⁻¹	Testo
☐	236		AF	29-Dec-2022	23:32	00:04:00	57 min ⁻¹	54 min ⁻¹	Testo
☐	234		AF	29-Dec-2022	11:52	00:02:00	70 min ⁻¹	68 min ⁻¹	ECG
☐	208		AF	25-Dec-2022	22:54	01:12:00	58 min ⁻¹	45 min ⁻¹	ECG
☐	207		AF	25-Dec-2022	22:48	00:02:00	56 min ⁻¹	52 min ⁻¹	Testo
☐	206		AF	25-Dec-2022	21:06	00:06:00	57 min ⁻¹	51 min ⁻¹	Testo
☐	151		AF	16-Dec-2022	23:56	00:16:00	58 min ⁻¹	48 min ⁻¹	Testo
☐	150		AF	16-Dec-2022	22:48	01:06:00	58 min ⁻¹	52 min ⁻¹	ECG

AccuRhythm AI

Pause Clinical Case

LINQ II™ LNQ22

Numero di serie del dispositivo:
RLB341636G

Data di impianto:

02-Aug-2022

Motivo del monitoraggio:

AF sospetta

Dati Quick Look da: 19-Feb-2024 17:18 a 21-Feb-2024 10:46

	Corrente	Durata	Parametri	Stato della batteria	Buono
Sintomo	0	0	Off	Osservazioni Nessuna oss...	
Tachicardia	0	110	>150 min ⁻¹ , >=12 battiti		
Pausa	0	1	>3 secondi		
Bradicardia	0	0	<30 min ⁻¹ , >=12 battiti		
AT	0	56	Off		
AF	0	265	Tutti gli episodi		
Tempo in AT/AF	0.0%	---			

**Numero totale episodi di PAUSA
dall'impianto**

AccuRhythm AI

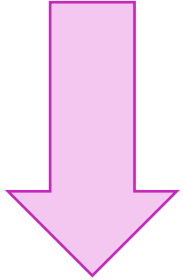
Pause Clinical Case



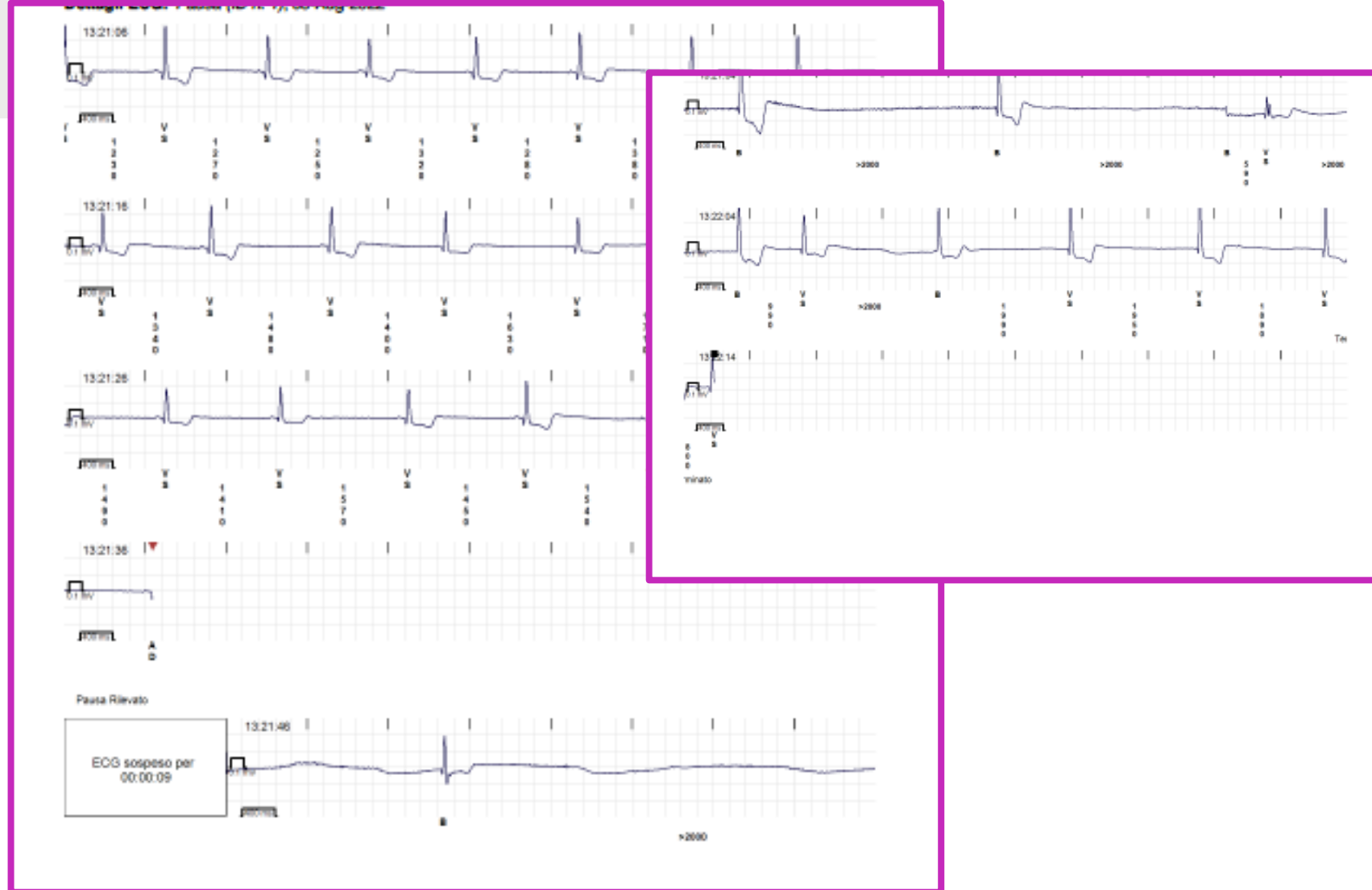
Syncope Clinical Case



- Unknown Syncope
- ILR implant



1. ONE syncope episode
2. PMK implant



Report AccuRhythm AI

Medtronic

AccuRhythm™ AI algorithms



AccuRhythm™ AI AF & Pause algorithms for the LINQ™ Family of Insertable Cardiac Monitors (ICMs)
Real-World Results for:

Ospedale G.B. Grassi - Ostia

Enrolled LINQ II patients: 84

Enrolled Reveal LINQ patients: 4

Date range: 25-05-2022 - 31-05-2026

Date range: 29-05-2024 - 31-05-2026

Alert reduction



Time savings

130 Estimated hours saved during data range¹

32 Projected hours saved per year

2 Approximate % of FTE²

AccuRhythm™ AI

Clinic efficiency results from AccuRhythm AI during data range¹:

- False AF Alerts eliminated by AI = 73
- False Pause Alerts eliminated by AI = 615
- Total (AF + Pause) False Alerts eliminated by AI = 688

Calculations:

Clinic efficiency results from AccuRhythm AI during data range¹:

- False AF Alerts eliminated by AI = 73
- Indeterminate AF Alerts sent for clinician review = 951
- False Pause Alerts eliminated by AI = 615
- Indeterminate Pause Alerts sent for clinician review = 24
- Total (AF + Pause) False Alerts eliminated by AI = 688

Pause Alert Reduction calculation:

$$\frac{\text{False Pause Alerts eliminated by AI}}{615} \div \left(\frac{\text{Indeterminate Pause alerts sent for clinician review}}{24} + \frac{\text{False Pause Alerts eliminated by AI}}{615} \right) \times 100 = \text{Pause Alert Reduction \%} = 96$$

AF Alert Reduction calculation:

$$\frac{\text{False AF Alerts eliminated by AI}}{73} \div \left(\frac{\text{Indeterminate AF alerts sent for clinician review}}{951} + \frac{\text{False AF Alerts eliminated by AI}}{73} \right) \times 100 = \text{AF Alert Reduction \%} = 7$$

Estimated hours saved in time frame calculation:

$$\frac{\text{Total False Alerts eliminated by AI}}{688} \times 11.3 \text{ min}^1 \div 60 \text{ min} = 130 \text{ (0 Reveal LINQ + 130 LINQ II)}$$

Projected hours saved per year calculation:

$$\left[\frac{\text{Hours saved in report time frame for Reveal LINQ}}{0} \times \left(\frac{\text{Days/year}}{365} \div \frac{\text{Number of days in time frame for Reveal LINQ}}{732} \right) \right] + \left[\frac{\text{Hours saved in report time frame for LINQ II}}{130} \times \left(\frac{\text{Days/year}}{365} \div \frac{\text{Number of days in time frame for LINQ II}}{1467} \right) \right] = \text{Projected hours saved per year} = 32$$

% Of FTE calculation

$$\frac{\text{Projected hours saved per year}}{32} \div 1562 \text{ hours/year}^2 \times 100 = \text{\% of FTE} = 2$$

* Reason for Monitoring Breakdown generated from implanters' site data. This encompasses all Reveal LINQ™ and LINQ II™ ICM patients. This custom report is available to all Western European clinics upon request.

Note: the results depicted illustrate one clinic's CareLink network Reveal LINQ™ and LINQ II™ ICM data. It is not representative of all clinics' experience. Results may vary. This report utilizes limited, de-identified data from this clinic's CareLink™ network records.

† Alerts were False if AccuRhythm™ AI classified all episodes in a day as false, and Indeterminate if AccuRhythm™ AI classified one or more episodes as indeterminate/true.

^ Excluding dates listed in the values due to partial data.

References:

- Seller A et al. Clinic Time Required for Remote and In-Person Management of Patients With Cardiac Devices: Time and Motion Workflow Evaluation. JMRI Cardio 2021; 5(2): e27720. - On average non-actionable episodes take 11.3 minutes to review.
- OECD (2023), average annual hours actually worked per worker, Labor Force Statistics, <https://stats.oecd.org/index.aspx?DataSetCode=ANHRS> (accessed on 10/10/2023).

CE0123

Medtronic

Smart ECG

The AI algorithm development in 3 steps:

1. Data collection



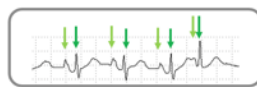
2. Training phase



3. Test phase



Data Collection



Feature Extraction
 $x = \begin{pmatrix} x_1 \\ x_2 \\ \dots \end{pmatrix}$

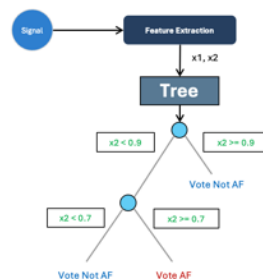
Classify with Machine Learning Model

Atrial Fibrillation Score

For each sECG used in the training phase, a **146-dimensional Feature vector** is created.

The vector is composed by **understandable, clinical and meaningful** features, such as:

- 86 statistical features based on **RR** intervals
- 1 ectopy ratio feature (according to internal BioMonitor III[™] Algorithm)
- 27 statistical features based on potential **PR** intervals
- 26 statistical features based on potential **PP** intervals
- 6 morphology features



BeatLogic

1. AF algorithm:

Both detection and verification of potential AF rhythms are powered by AI to store AF episodes

38%
reduction
in false
positives

while
maintaining
>98%
relative
sensitivity^{1*}

2. Tachycardia algorithm:

The verification stage uses AI to classify potential episode as VT, SVT, or noise (and all flagged noise episodes are rejected)

96%

correct
rejection
of noise^{2†}

3. PVC burden algorithm:

Both the detection and verification stages leverage AI to identify PVC sequences, including couplets and triplets

100%
positive
predictive value
84%
sensitivity

For
identifying
PVC
burdens
≥ 10%^{3‡}

Assert-IQ™ ICM

WORKFLOW AI:



Rilevazione iniziale & Trasmissione di tutti gli episodi Merlin.net PCN

Detection di TUTTI gli episodi di AF e PAUSA

Rimozione dei Falsi Positivi tramite filtraggio AI CARE-AF, CARE-Pause

Applicazione della tecnologia 3 Key Episode

Episodi filtrati tramite AI Disponibili su

La Diagnostica su Merlin.net PCN, inclusi i trend dei burden, il conteggio degli episodi e gli istogrammi vengono aggiornati dopo filtraggio tramite AI

Quando si interroga un dispositivo con un programmatore, tutti gli episodi verranno mostrati. Una volta inviate le trasmissioni a Merlin.net, l'IA le valuterà e rimuoverà gli episodi falsi.



CARE AI: La tecnologia AI Abbott utilizza il Deep Learning come modello.

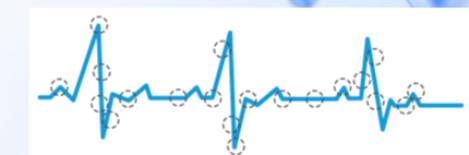
In particolare **le Reti Neurali Convoluzionali (CNN)**.

«Algoritmi di deep learning specializzati nell'elaborazione di dati strutturati a griglia, come le immagini. Estraggono automaticamente caratteristiche (bordi, forme) per ridurre la dimensionalità, eccellendo nel riconoscimento visivo e nell'analisi delle immagini e video»

La valutazione basata sul ritmo analizza l'intera traccia EGM, considerando relazioni tra i segmenti e le caratteristiche della forma d'onda



Analisi Rate - Base

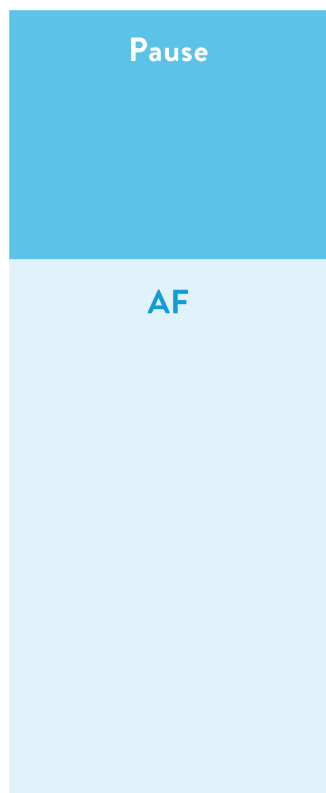


Analisi Rhythm - Base

- ASSERT CARE AI

AI Performance

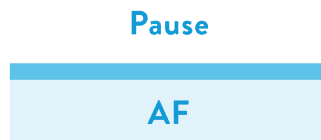
- RIDUZIONE SIGNIFICATIVE DI FALSI POSITIVE SEPPUR MANTENENDO UN'ELEVATA SENSIBILITÀ



False Positives Before AI

90.6% riduzione
Falsi positivi per gli
episodi di Pausa²

81.0% riduzione
dei falsi positive
negli episodi di
FA^{1,2}



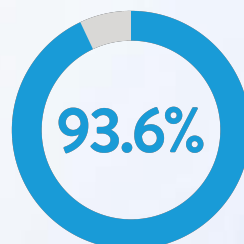
False Positives After AI



AI conferma il **100% degli episodi veri di AF** rilevati da Assert-IQ ICMs^{1,2}



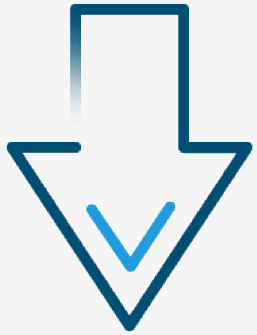
AI conserva il **99.2% dei veri episodi di Pausa²**



AI garantisce il **93.6% Positive Predictive Value (PPV)**^{*1,2}

^{*}For episode-based AF performance

Assert-IQ™ ICM con AI Performance



AI REDUCES
TRANSMISSION BURDEN**

39.4%

reduction in transmissions.³



TIME SAVINGS FROM AI

AI algorithms can **save clinics approximately 486 hours annually** for every 100 Assert-IQ™ ICM patients.³

**For patients with at least one AF or Pause alert pre-AI.

VISION

WHAT ABOUT THE FUTURE?

Drive a new era of personalized medicine by empowering care providers and patients with actionable insights to conquer chronic disease.

DIAGNOSIS



MONITORING



**DISEASE
MANAGEMENT**

CONCLUSIONI

- Le indicazioni all'impianto di loop recorder sono in costante allargamento, dalla sincope, all'ictus criptogenetico, alla FA, fino alle nuove frontiere della stratificazione del rischio aritmico nel post MI e di morte improvvisa, alla valutazione multiparametrica dello scompenso cardiaco
- Le nuove generazioni di ICM sono dotate di algoritmi automatici che migliorano l'accuratezza diagnostica riducendo i falsi positivi e di conseguenza riducendo il carico di lavoro dei centri controllo
- Le nuove funzionalità automatiche di inizializzazione e programmazione in remoto e le nuove modalità di connettività mediante sistemi Bluetooth e APP migliorano la compliance dei pazienti e la qualità delle trasmissioni
- L'implementazione delle AI sul cloud per l'analisi degli allarmi consentirà una significativa riduzione dei falsi positivi e conseguentemente del carico di lavoro per i centri
- L'uso dell'intelligenza artificiale consente di utilizzare i BIG DATA per ottenere una vera **MEDICINA PERSONALIZZATA**.