

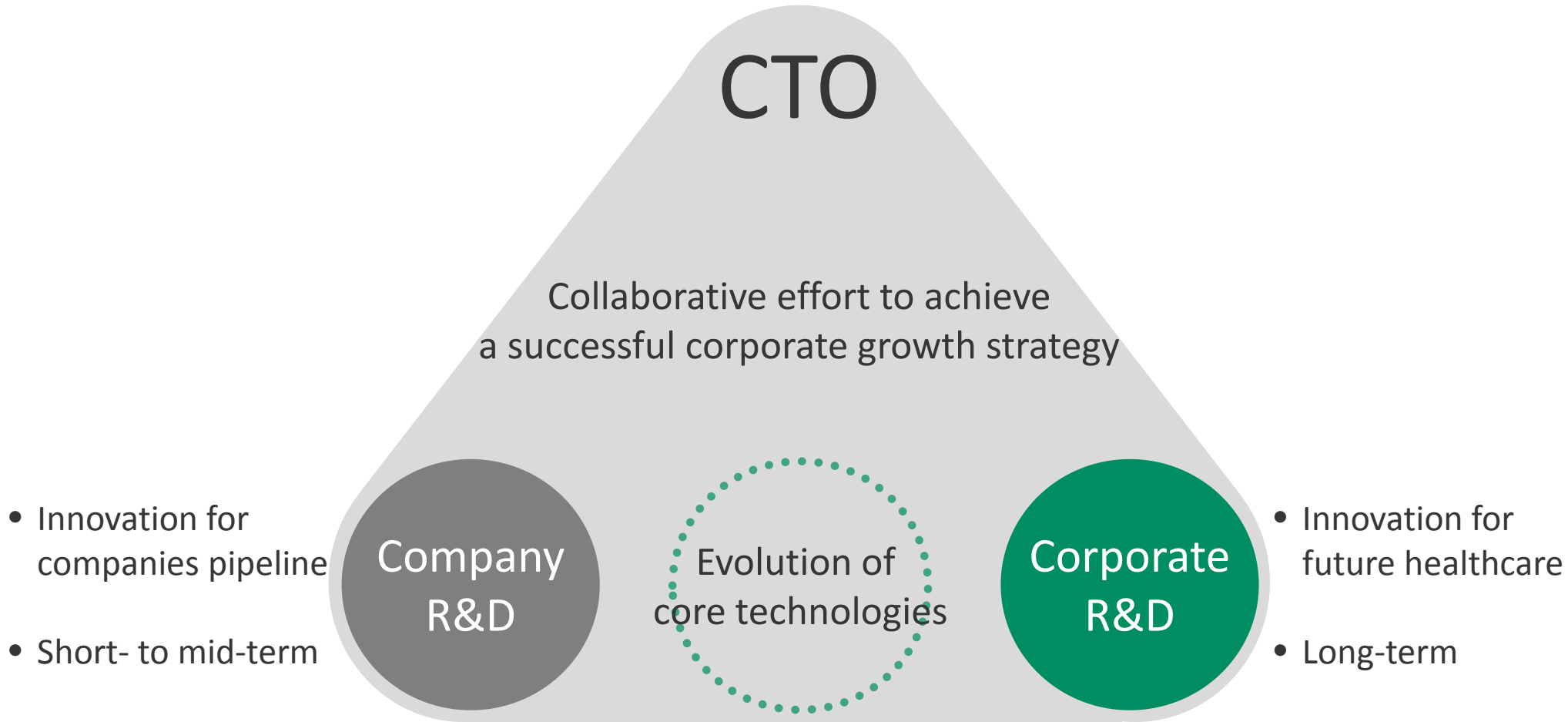
Hiroaki Kasukawa, Ph.D.  
Chief Technology Officer

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Corporate R&D

# Terumo R&D System

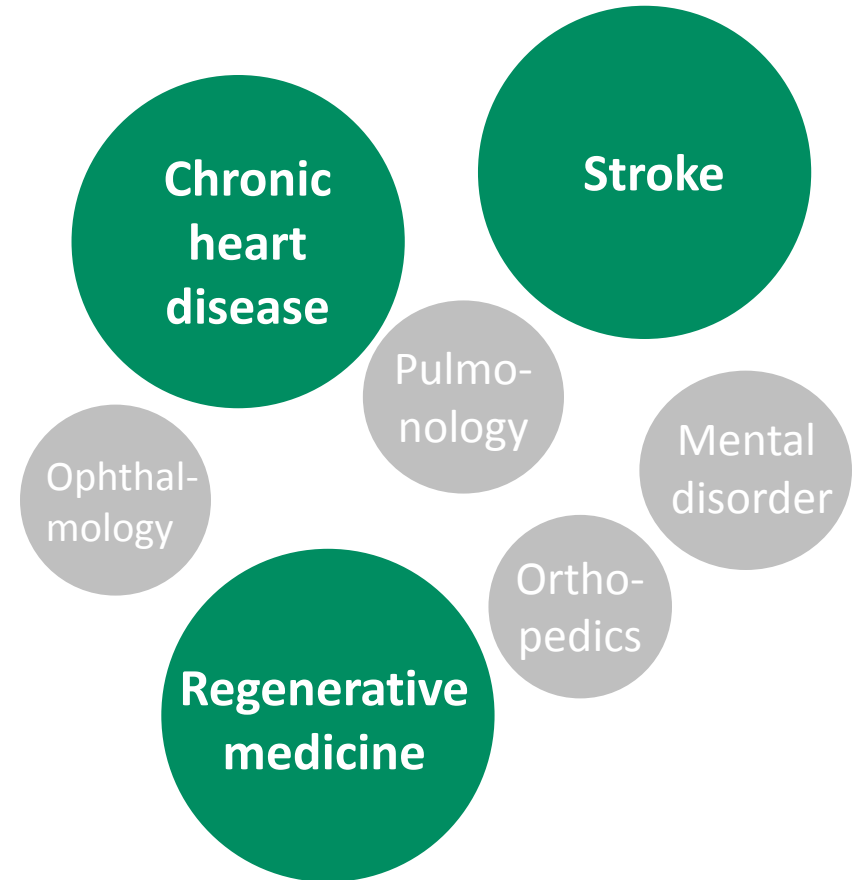
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# Contribute to Future of Healthcare with Significant Social Impact

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- Diseases that increase with age
- Diseases that create large social burdens
- Diseases that lead to business opportunities



A hand in a white lab coat sleeve is shown holding a small, white medical device. The background is a teal color with a grid pattern and various medical icons, including a cross, a heart, and a microscope. The text "Chronic Heart Failure (CHF)" is overlaid in white.

# Chronic Heart Failure (CHF)

# CHF Is Not Prevented by Treating Just One Disease

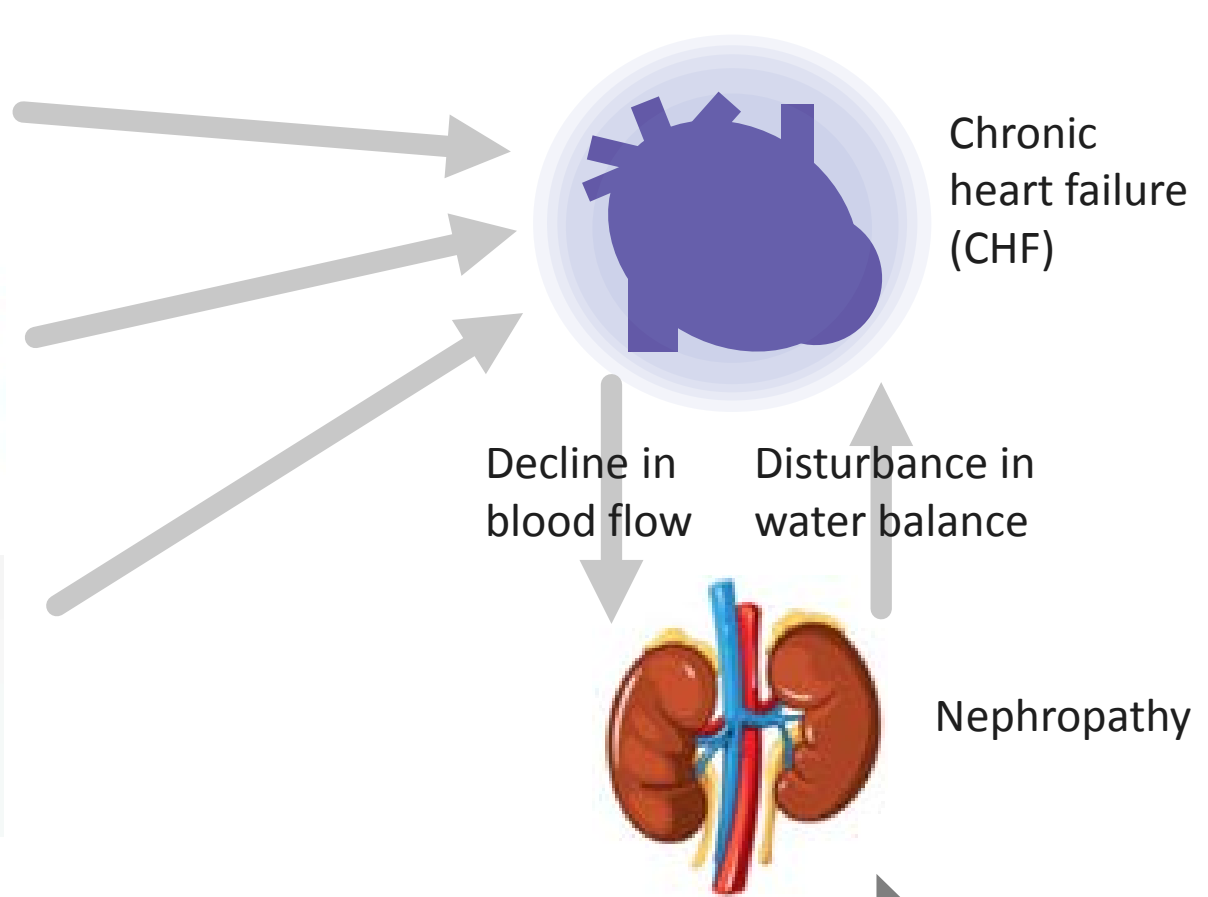
- Hypertension



- Myocardial infarction
- Arrhythmia
- Valve disease



- Cardiac toxicity of anticancer drugs



CHF onset probability increases with age

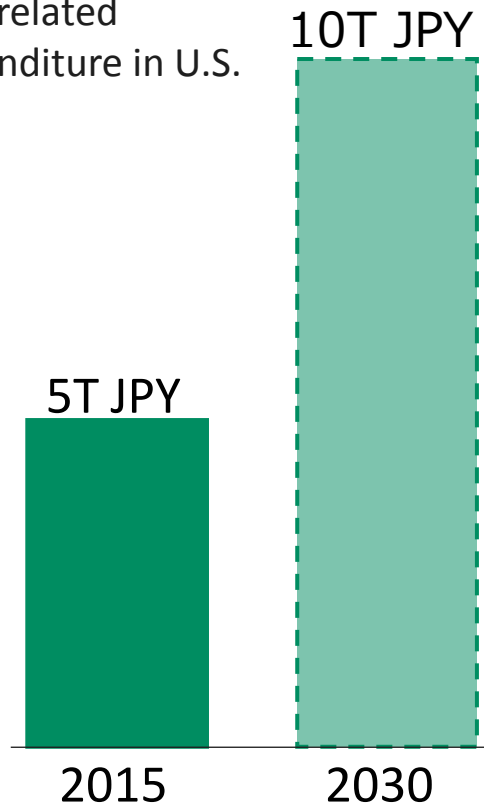
# Repeated Emergency Hospitalization in CHF

Expenditure doubles with aging of society

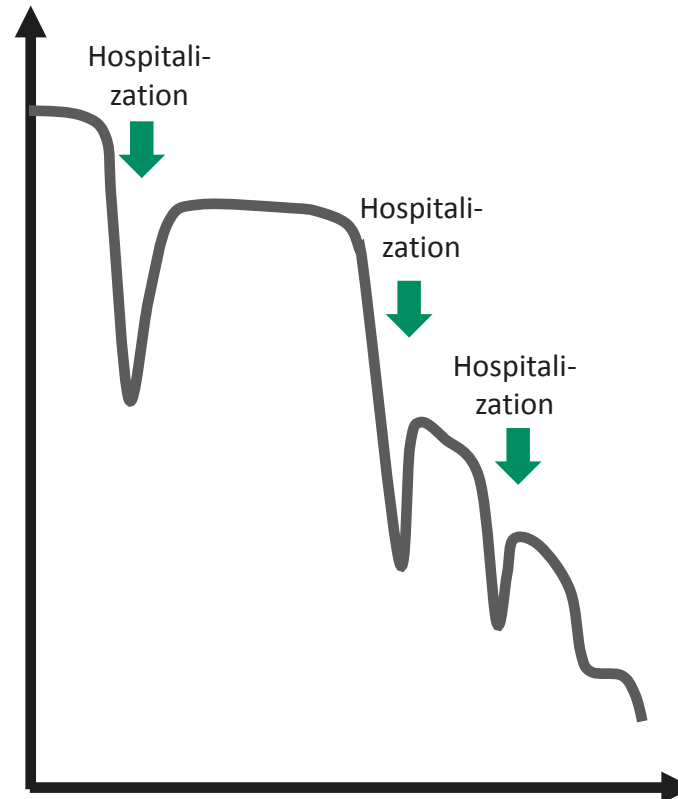
Unpredictable acute exacerbation

Hidden costs

CHF-related expenditure in U.S.



Cardiac function

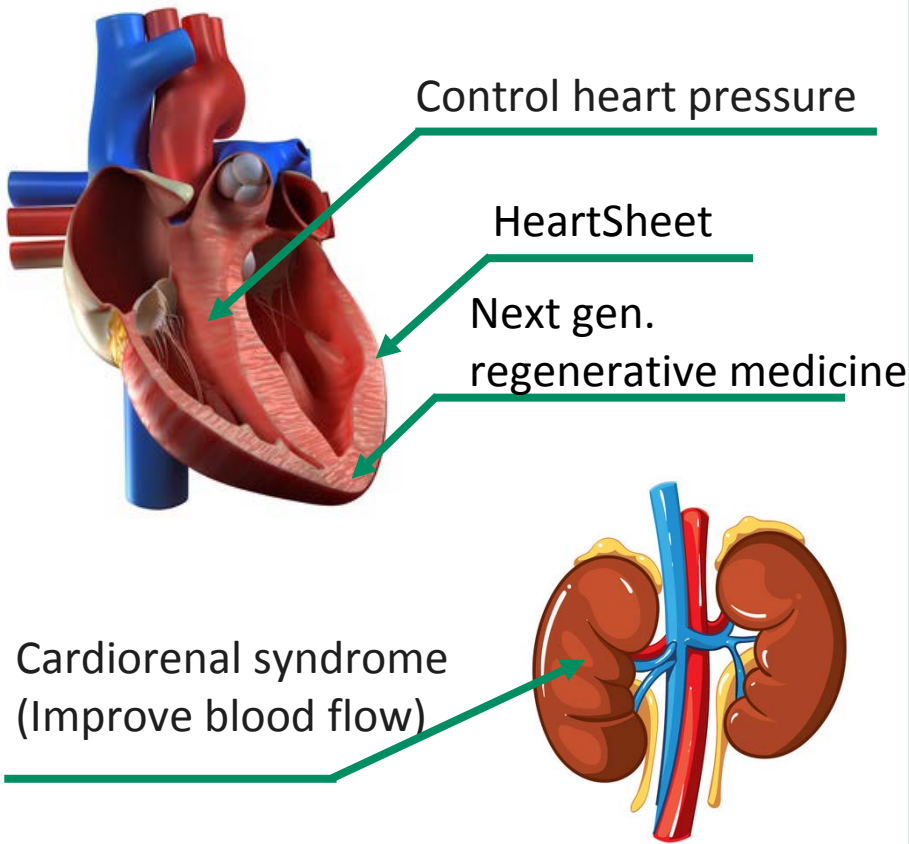


- Emergency hospitalization
- Declining operation rate in ICU

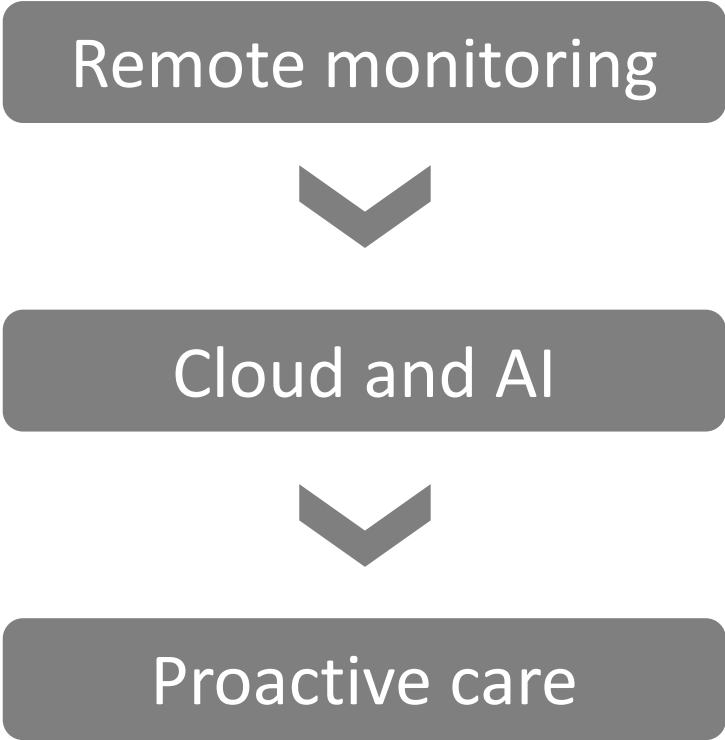
Reference: AHA

# Improvements after Heart Failure and Detection of Acute Worsening

## Improve condition from heart failure



## Early detection of acute worsening





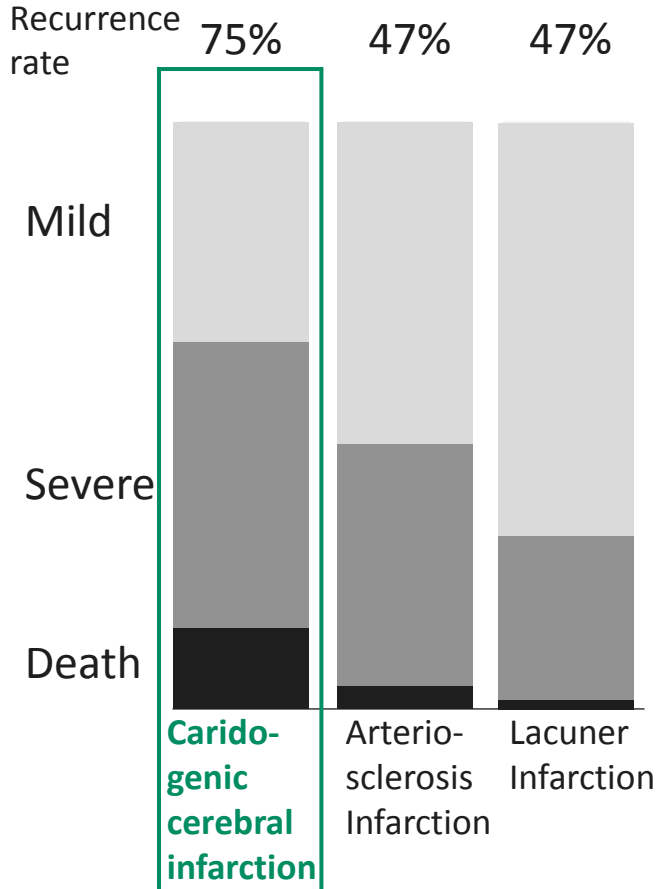
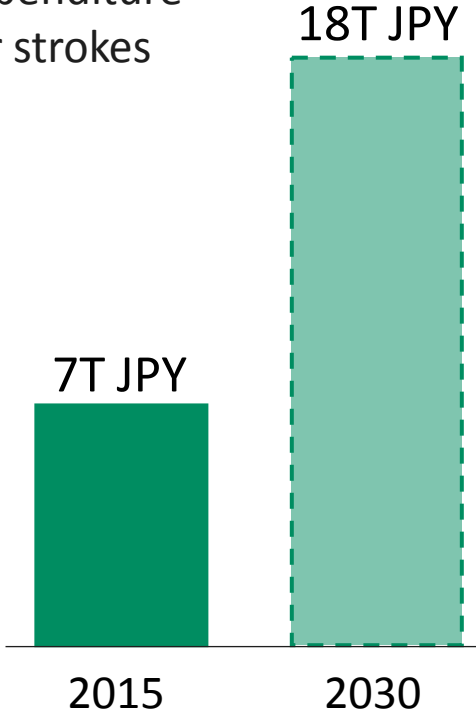
# Cardiogenic Cerebral Infarction



# Cardiogenic Cerebral Infarction Tends to Have Severe Outcomes

Expenditure increases with aging of society      Severe and repetitive      Hidden costs

US health expenditure for strokes



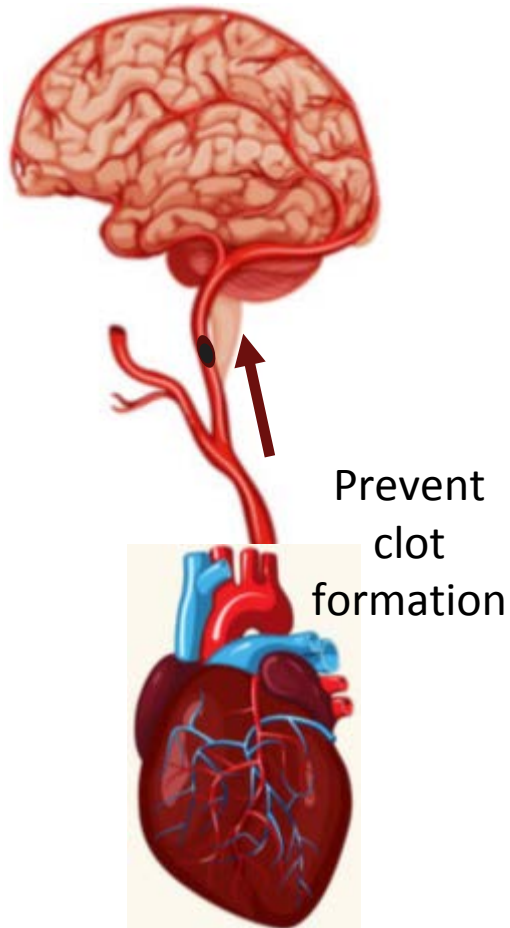
- Decline in QOL
- Care burden for family members
- Economic loss from restricted activity

Reference: AHA

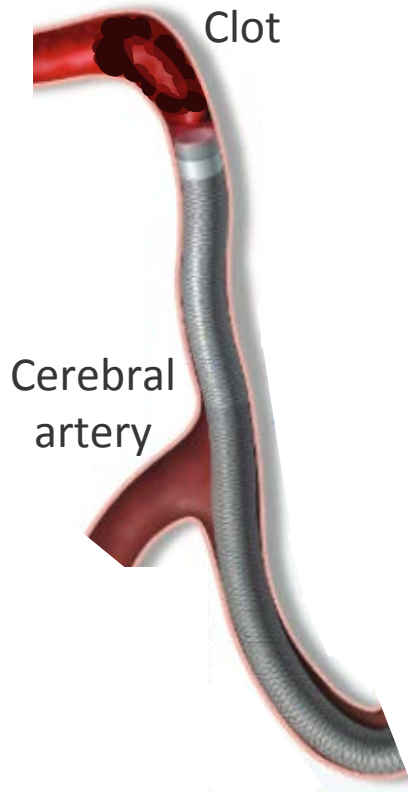
Okumura et. al., Jpn J. Electrocardiology 2011;31:292, Hisayama Town Rsearch

# Incidence Prevention and Reduced Damage from Aftereffects

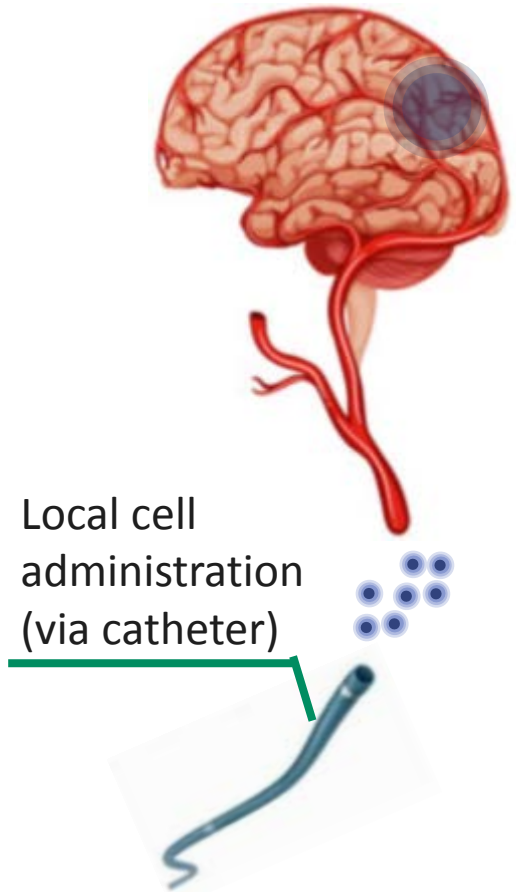
## Incident prevention



## Clot retrieval



## Reduced damage



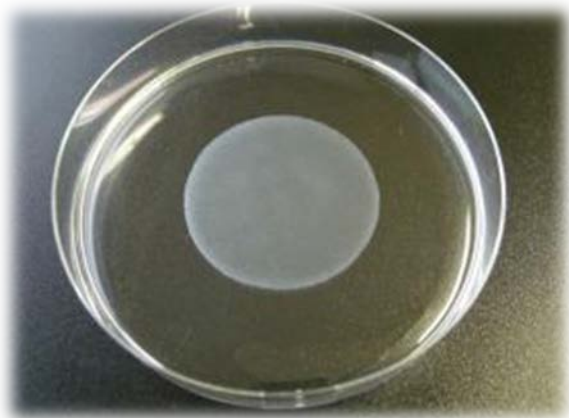


# Regenerative Medicine

# Evolution of Regenerative Medicine toward Commercialization

## HeartSheet

- Official approval
- Expanded indications



## Commercialization

- Allogenic cells
- High volume production



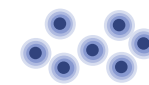
## Expansion to other diseases

### Candidate diseases

- Diabetic nephropathy
- Peripheral artery disease
- Stroke

⋮

i.e., local administration  
through renal artery



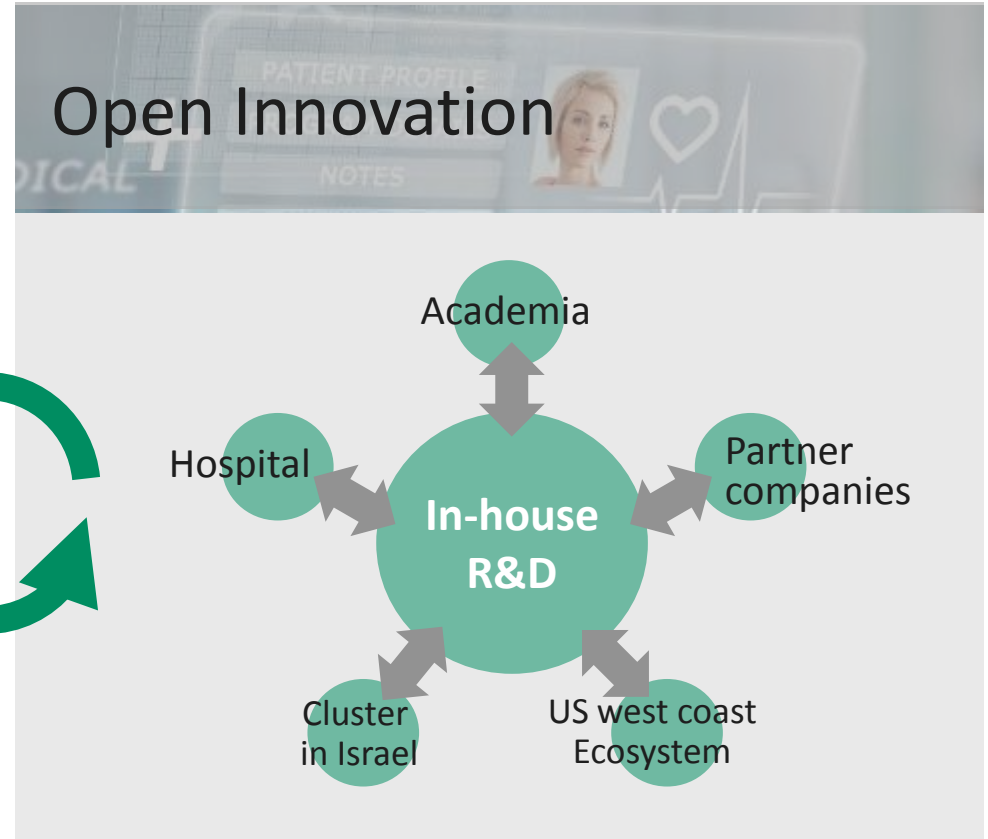
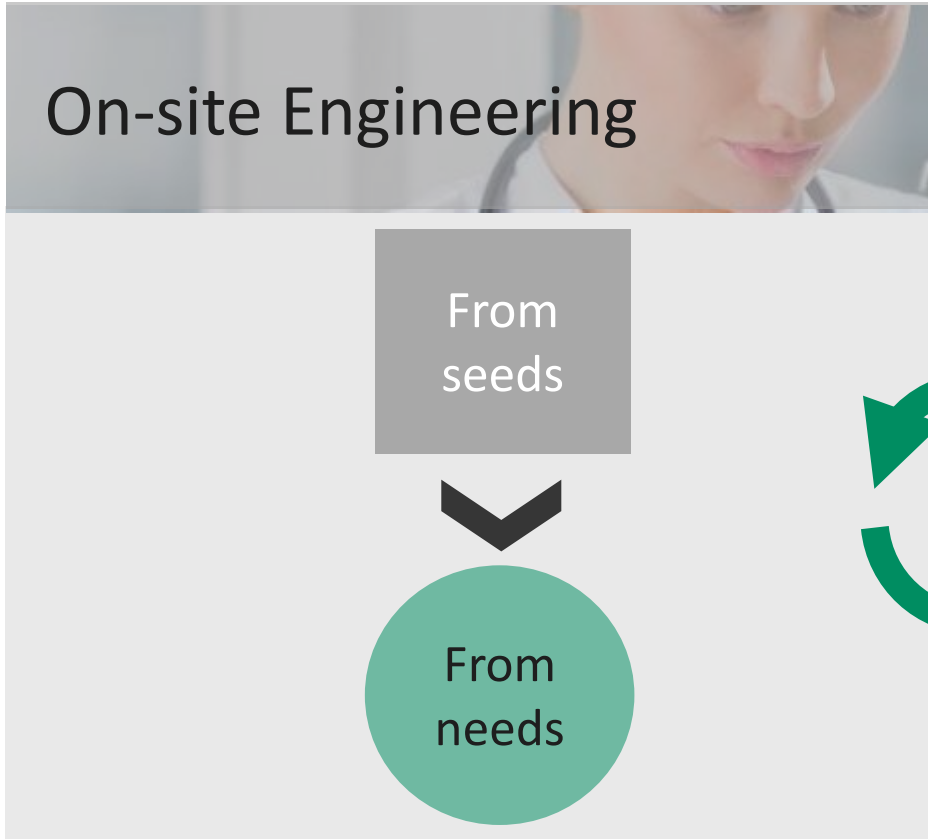
Cells





# Transforming Engineering

# Collaborative Effort in On-site Engineering and Open Innovation



New method for value creation



Incubator



# Innovating at the Speed of Life

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## Accelerate R&D through Active Investment

- R&D expense Double digits growth
- Engineers Increase 40% from current (1,200)
- Active external investment



Contribute to future of healthcare with significant social impact





# Disclaimer

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The information that Terumo discloses and the forward-looking statements including financial projections are based upon our assumptions using information available to us at the time and are not intended to be guarantees of future events or performance. Accordingly, it should be noted that actual results may differ from those forecasts or projections due to various factors. Factors affecting actual results include, but are not limited to, changes in economic conditions surrounding Terumo, fluctuations of foreign exchange rates, and state of the competition.

The market share information in this presentation is partly derived from our own independent research.