

# **Cardiovascular Disease Self-management Apps: Barriers to Adoption**

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# Agenda

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- ▶ Problem: Cardiovascular Disease
- ▶ Solution: Self-Management Apps
- ▶ Why this Study?
- ▶ Method
- ▶ Results
- ▶ Ways Forward

# Problem: Cardiovascular Disease

## CVD morbidity and mortality



CVD is the number one cause of death globally, with an estimated

**17.7 million**

people having died from CVD conditions in 2015, representing 31% of all global deaths



It is also a leading cause of disability and death in the UK, affecting around

**7 million**

people and being responsible for one in four premature deaths in the UK



In 2015 CVD was responsible for **26%** of all deaths (129,147) in England

# Problem: Cardiovascular Disease

## The diagnosis and treatment gap

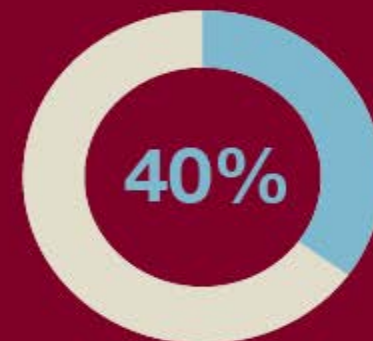
CVD prevention is being limited by the diagnosis and treatment gap for conditions including hypertension.



Hypertension in 2016 to 2017:

**8,028,077 adults**

Approximately 40% are not treated to the 140/90 target



There are also

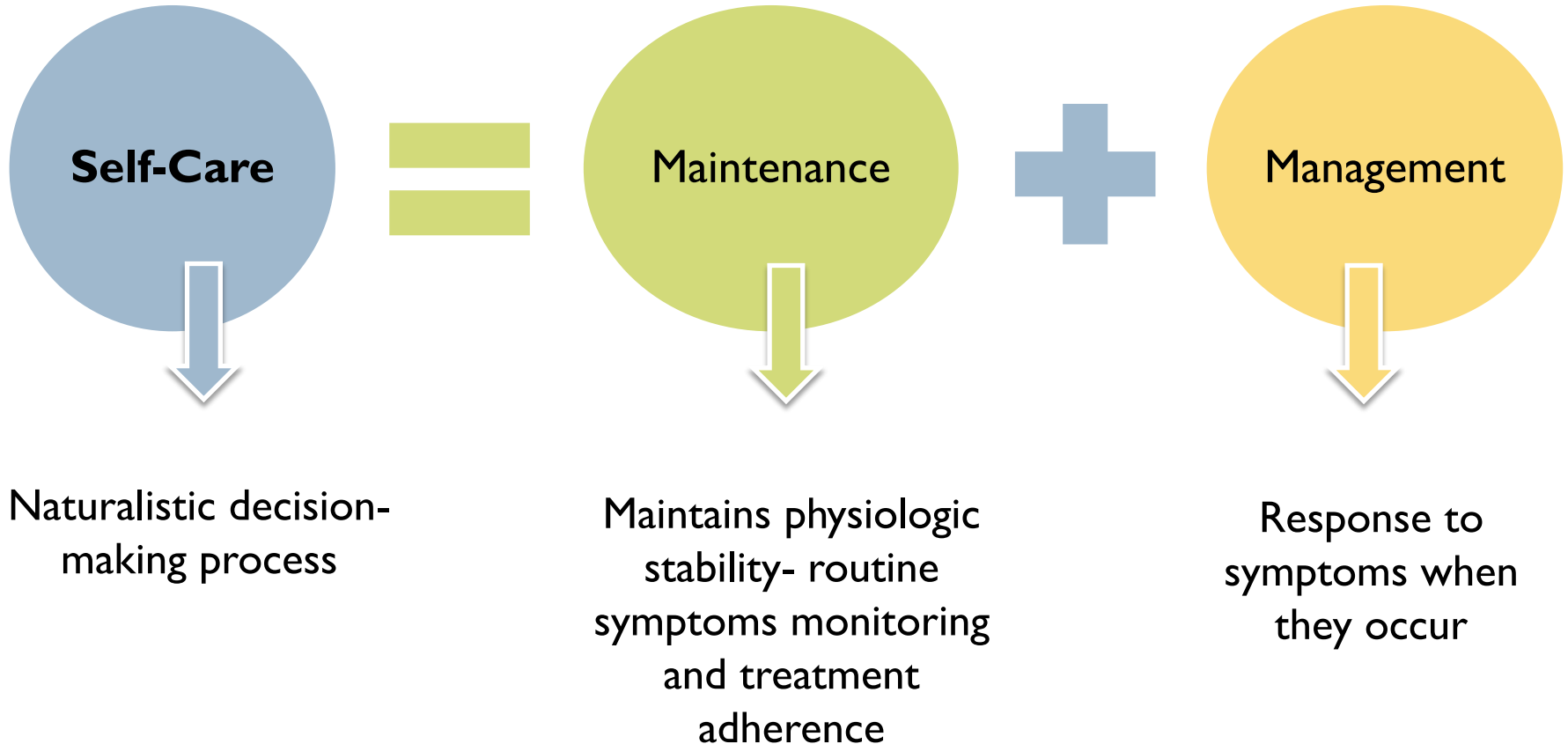
**5,520,000 adults**

with undiagnosed hypertension



# Solution: Self-Management

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(IDF, 2009)

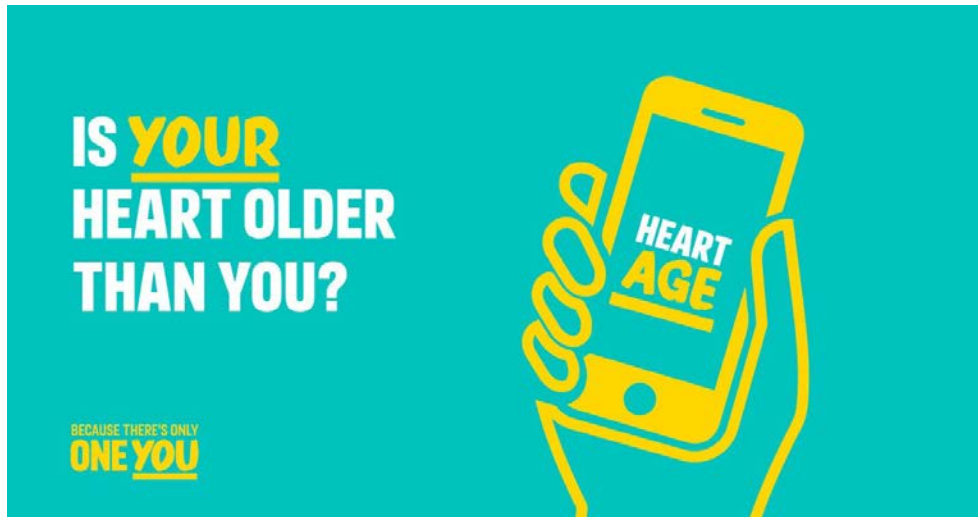
# Why Apps?

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86% <i>Q1 2016</i>	<b>88%</b> <i>Q1 2017</i>	Total household internet take-up
24.7m <i>end 2015</i>	<b>25.3m</b> <i>end 2016</i>	Number of fixed broadband connections
9.2m <i>end 2015</i>	<b>10.8m</b> <i>end 2016</i>	Number of superfast broadband connections
81% <i>Q1 2016</i>	<b>83%</b> <i>Q1 2017</i>	Proportion of adults with broadband (fixed and mobile)
38% <i>Q4 2015</i>	<b>44%</b> <i>Q4 2016</i>	Superfast broadband take-up (% of all connections)
28.9Mbit/s <i>Nov 2015</i>	<b>36.2Mbit/s</b> <i>Nov 2016</i>	Average actual fixed broadband speed
59% <i>Q1 2016</i>	<b>58%</b> <i>Q1 2017</i>	Proportion of homes with a tablet computer
66% <i>Q1 2016</i>	<b>66%</b> <i>Q1 2017</i>	Proportion of people who use their mobile phone to access the internet

# Solution: Self-Management Apps

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# Solution: Self-Management Apps

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- ▶ Improves symptoms management through self-management interventions (Whitehead & Seaton, 2016).
- ▶ Improve health outcomes among those living with LTC through enhanced symptom control (Whitehead & Seaton, 2016).
- ▶ Digital Health Interventions have a positive impact on risk factors of CVDs (Widmer et al., 2015).
- ▶ Effective tool to assist in managing some conditions (Wang et al., 2014).
- ▶ Effective in promote physical activity and healthy diet (Muller et al., 2016).



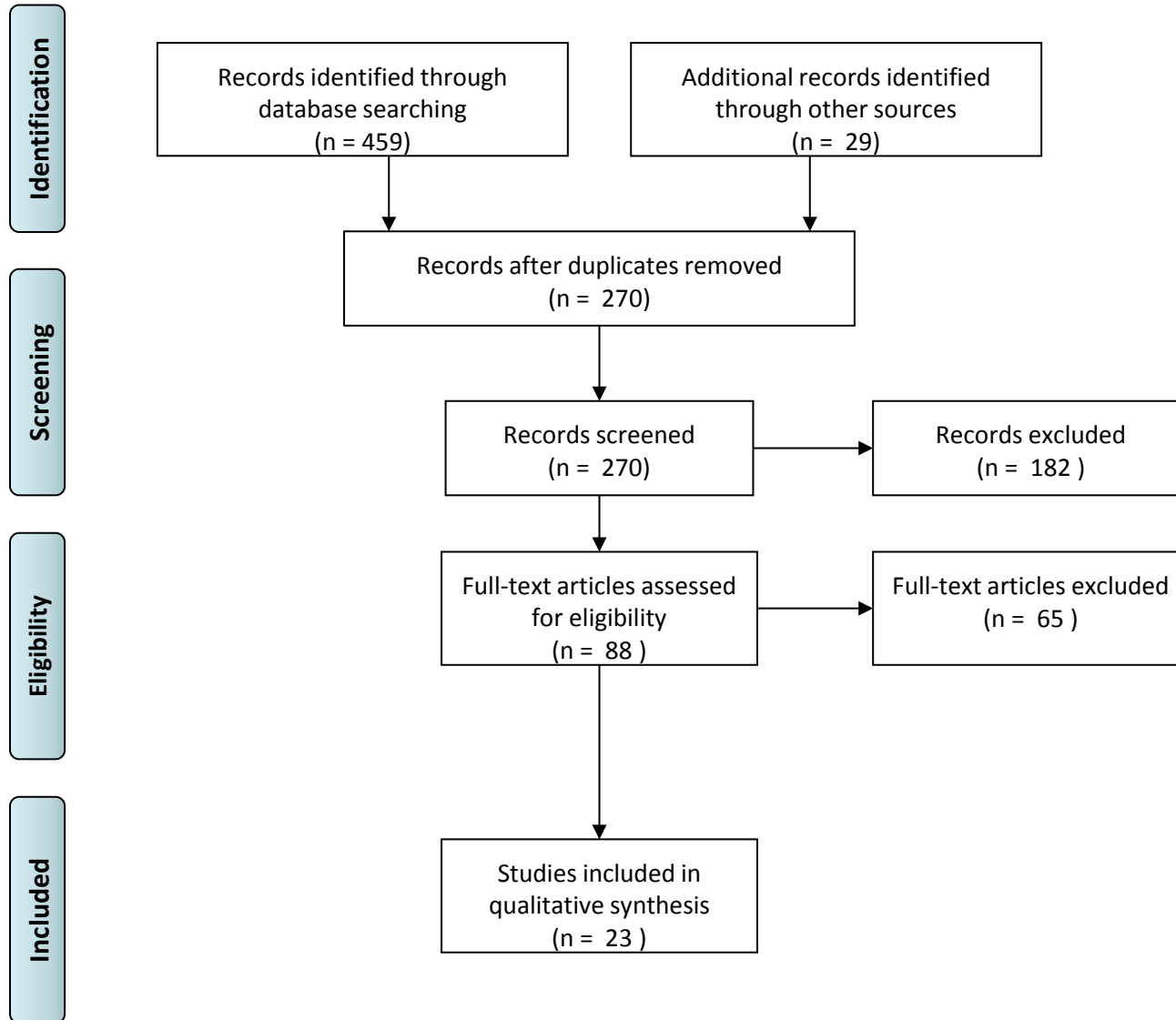
# Why this Study?

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- ▶ Why the low uptake of self-management apps?
- ▶ What are the barriers preventing the use of self-management apps?

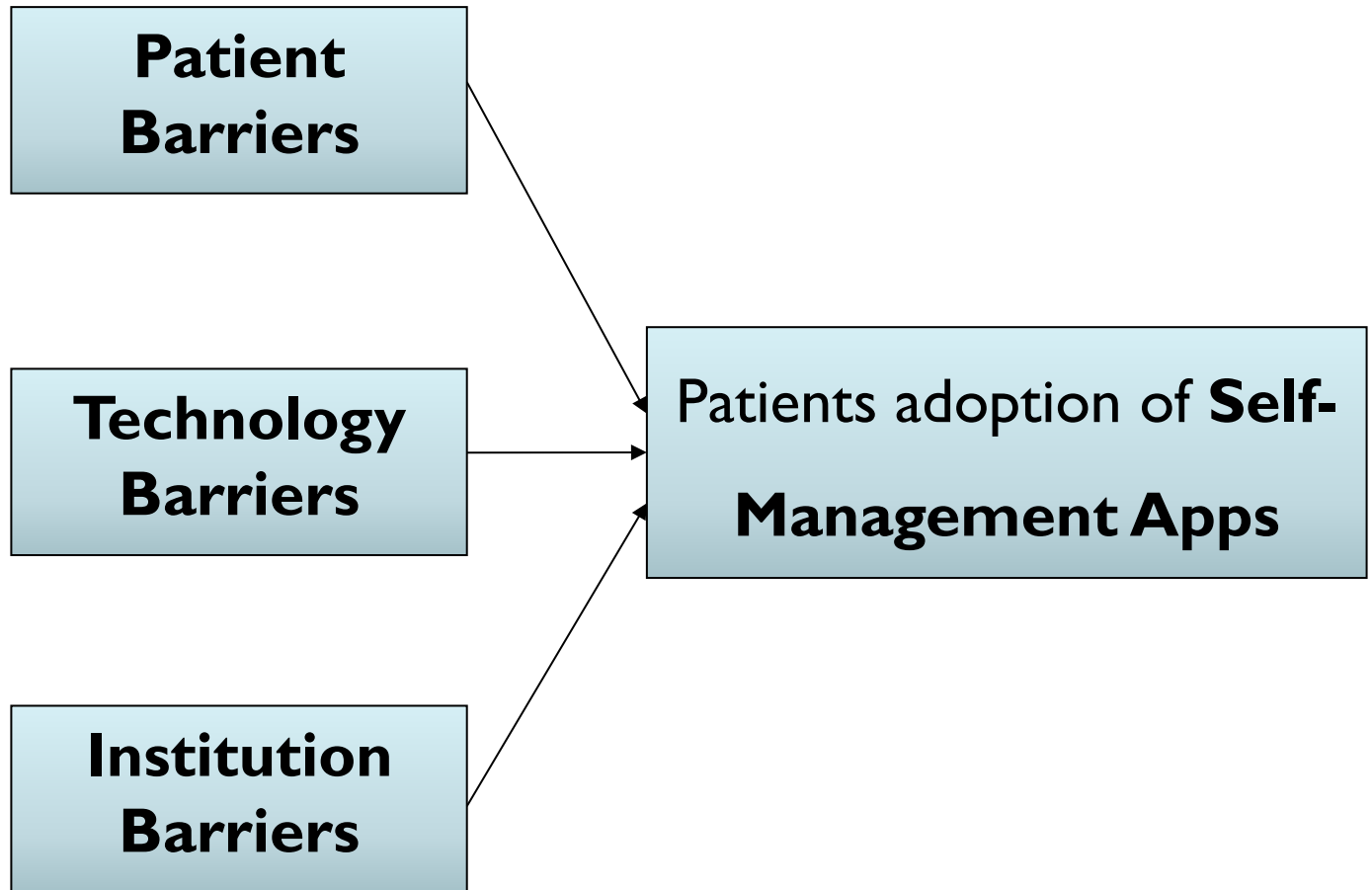
# Method

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# Results

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# Results

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## **Patient Barriers**

- Health and technology illiteracy
- Lack of motivation and awareness
- Busy lifestyle
- Satisfaction with traditional ways
- Lack of internet access and cost
- Lack of support
- Confidentiality issues

**Patient Adoption of Self-  
Management Apps**

# Results

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- Poor quality information or interaction
- Poorly design interfaces
- Complex functions

## **Technology Barriers**

- Lack of functionalities valued by patients
- Lack of customization to patients preference
- Data security and confidentiality

Patient Adoption of **Self-  
Management Apps**

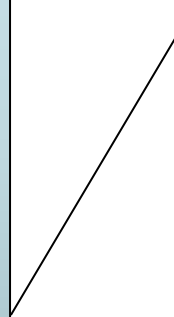
# Results

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- Slow decision-making process and logistic procedure
- Low staff capacity
- Lack availability of resources
- Absence of institutional support
- Low integration into workflow
- Work- related stress
- Insufficient training/ skills/ knowledge
- Lack of clinical endorsement

## **Institution Barriers**

**Patient Adoption of Self-  
Management Apps**



# Way Forward

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- ▶ **How to overcome these barriers?**
  - ▶ Patient
  - ▶ Technology
  - ▶ Institution



# Q&A Session



# References

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