# Patient Compliance in Home Based Self Care Telehealth Projects

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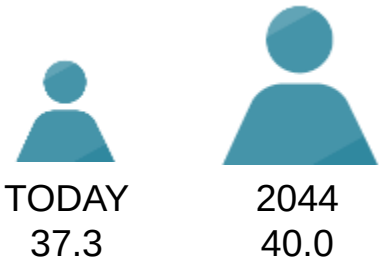
# Context

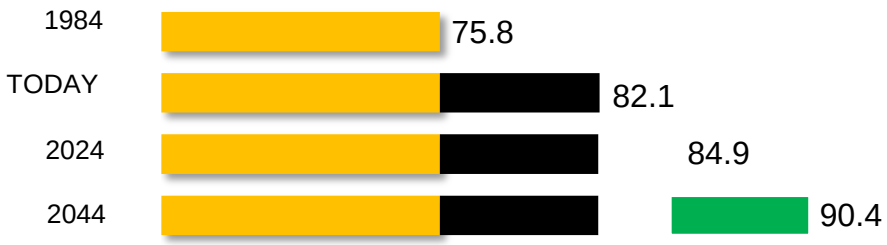
## GROWING DEMAND

### Growing Population Australian | 65+ Population

### Ageing Society Median Age



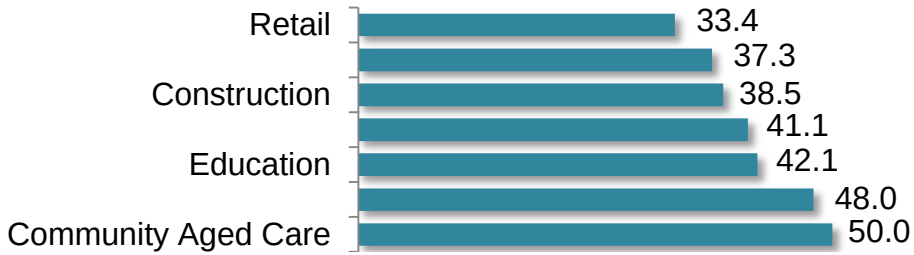

### Increased Longevity Life Expectancy At Birth




## DECREASING SUPPLY

### Declining Workforce Ratio of Workers: Retired Couple

### Ageing Workers Median Age In Workforce Sectors




### Mass Retirement and Recruitment Retiring Aged Care Workforce

**Half of the workforce will be of retirement age in 15 years**



Source: ABS, McCrindle

# Inter Generation Report Inputs For Health & Care

**Non-demographic** drivers:

- Higher incomes leads to increased demand for services
- Impact of health services wages growth on the price for services
- Increased burden of chronic disease and ageing population increasing demand for services

**Technological change:**

- Impacts both the price and the demand for services

Doing more with less is going to be the norm…….

# Major Challenges For The Health & Care Sector

How to more effectively and sustainably manage the ageing population, growing burden of chronic disease and rapidly increasing costs?

How to increase the economic participation and productivity of all Australians?

**But wait there is more .....**

*We are entering the Age of the Customer in Aged Care and Disability Support, and*

*The disruptors with business models built on innovation and empowered customers facilitated by technology are working to position for this new world.*

# Empowered Citizens Vital In A Sustainable Future

No matter how skilled our Health and Care Workforce or effective our Medications or Technology successful outcomes rely on citizens actively owning and participating in the management of their own health and wellness.

*"I visit my neurologist twice a year, for about 30 minutes. That is one hour per year. The rest of the year's 8,765 hours, I spend in self-care. Although my neurologist prescribes medication, I'm the one who makes sure I take it, eats healthily and stays physically active."*

*Sara Riggare (Parkinson's Sufferer since the age of 13)*

Empowered Citizens and Self Care is *…."activities individuals, families, and communities undertake with the intention of enhancing health, preventing disease, limiting illness, and restoring health. ..... They are undertaken by lay people on their own behalf, either separately or in participative collaboration with professionals."* *(World Health Organisation )*

# The Self Care Alliance

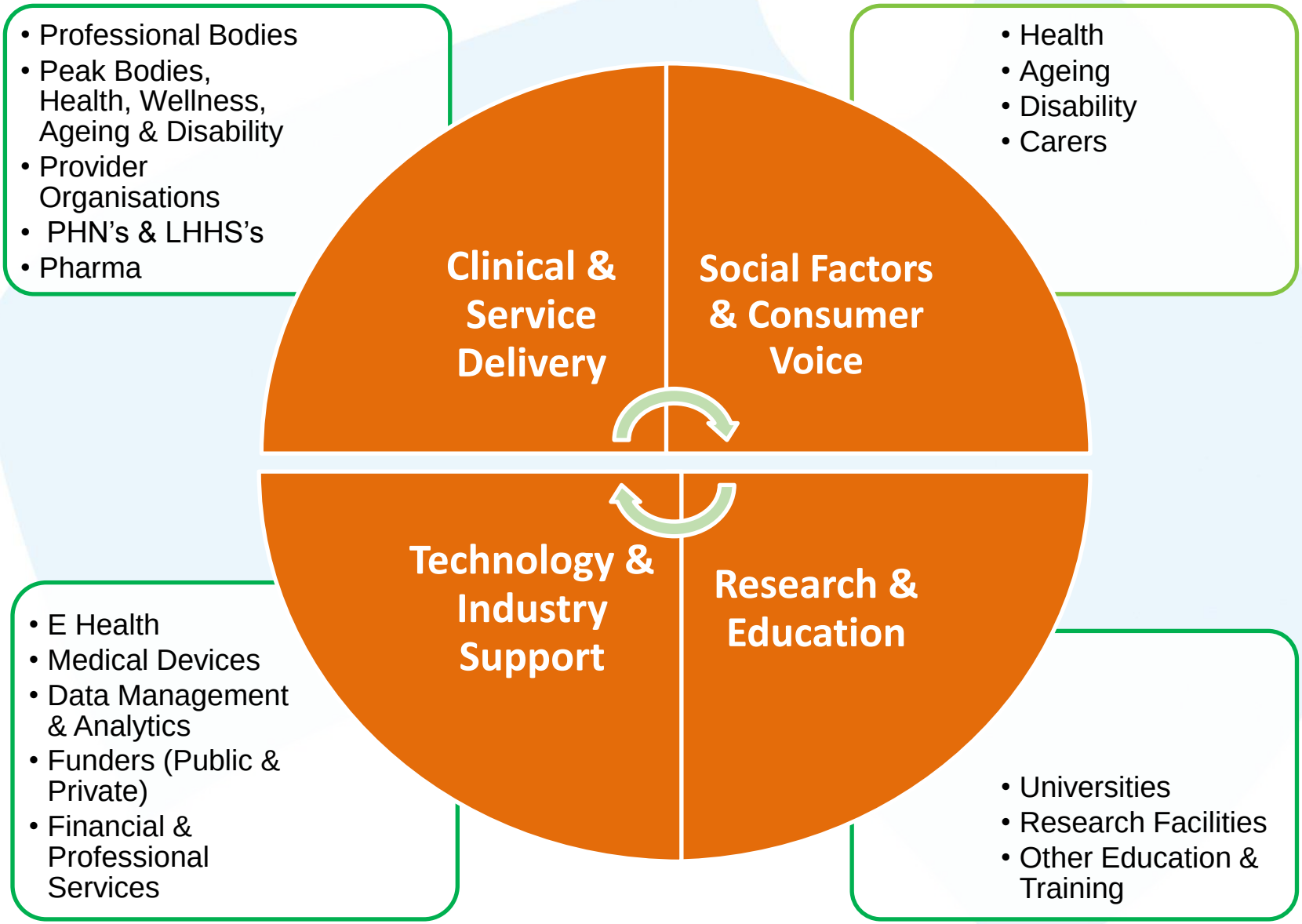
Drawn from all domains of the Health and Care Sector to achieve the adoption and implementation of self care as a core element of a sustainable National Health and Care Sector for Australia that delivers:

- Improved Health Outcomes for all Australians
- Appropriate and innovative solutions that meet the needs of the Australian Community in the 21st Century
- Increased economic participation and productivity by all Australians

Does this by:

- Providing a neutral space to pool knowledge and expertise
- Acting as Catalyst to initiate and foster dialogue and facilitate collaboration to develop policies and initiatives that support implementation of Self Care, and
- Acting as a repository of expert advice.

# Self Care Alliance Activity Domains



# Home Telehealth – Scope and Scale

- Providing health care services remotely in home settings
  - Observations and assessments by health care providers
  - Communications with care team members
  - Monitoring of vital signs and daily activities
  - Access to standalone and online self care products and services
- Numerous areas of health care can benefit
  - Aged independent living - “preventive lifestyle”
  - Chronic disease management – admissions reduction
  - Postop recovery and rehab – customised to individual
  - Disabled, mental, aged care – integrated services and portals

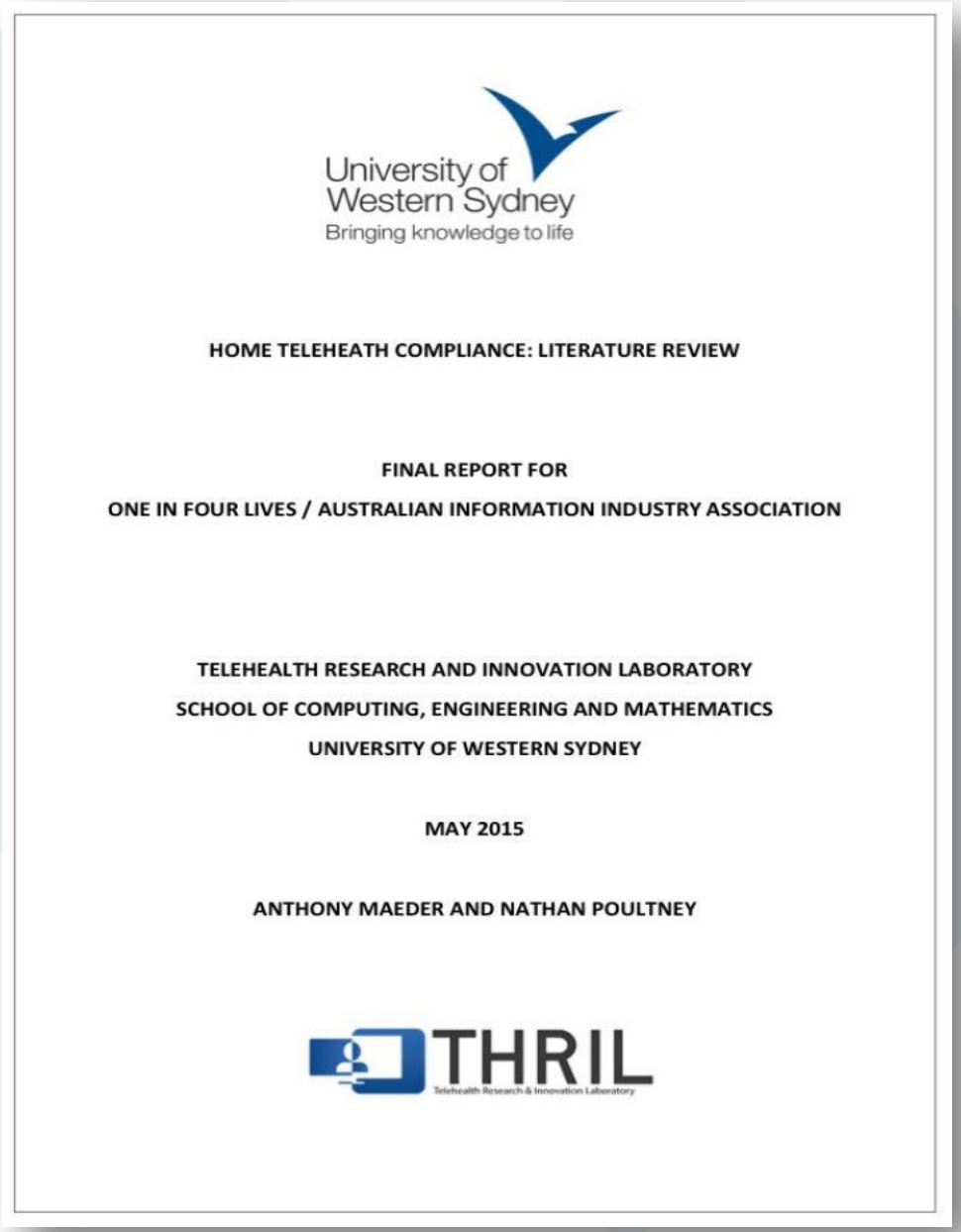
# Home Telehealth – Evidence Base

- Numerous trials globally, few at large scale
  - Veterans Administration (USA)
  - Whole System Demonstrator (UK)
  - National Broadband Network (AUS)
- Evidence of benefits quite diverse
  - Strong economic benefits
  - Weaker health benefits
  - Strong user satisfaction
- Health benefits may be impacted by usage patterns
- Few publications on details of patient compliance
- Does compliance vary for different health areas?

# The Review

Project sponsored by “One in Four Lives” on behalf of the Self Care Alliance to review compliance

http://c.ymcdn.com/sites/www.aiia.com.au/resource/resmgr/Docs/AIIA_Final_Report_20150522.pdf



University of Western Sydney
Bringing knowledge to life

HOME TELEHEATH COMPLIANCE: LITERATURE REVIEW

FINAL REPORT FOR

ONE IN FOUR LIVES / AUSTRALIAN INFORMATION INDUSTRY ASSOCIATION

TELEHEALTH RESEARCH AND INNOVATION LABORATORY

SCHOOL OF COMPUTING, ENGINEERING AND MATHEMATICS

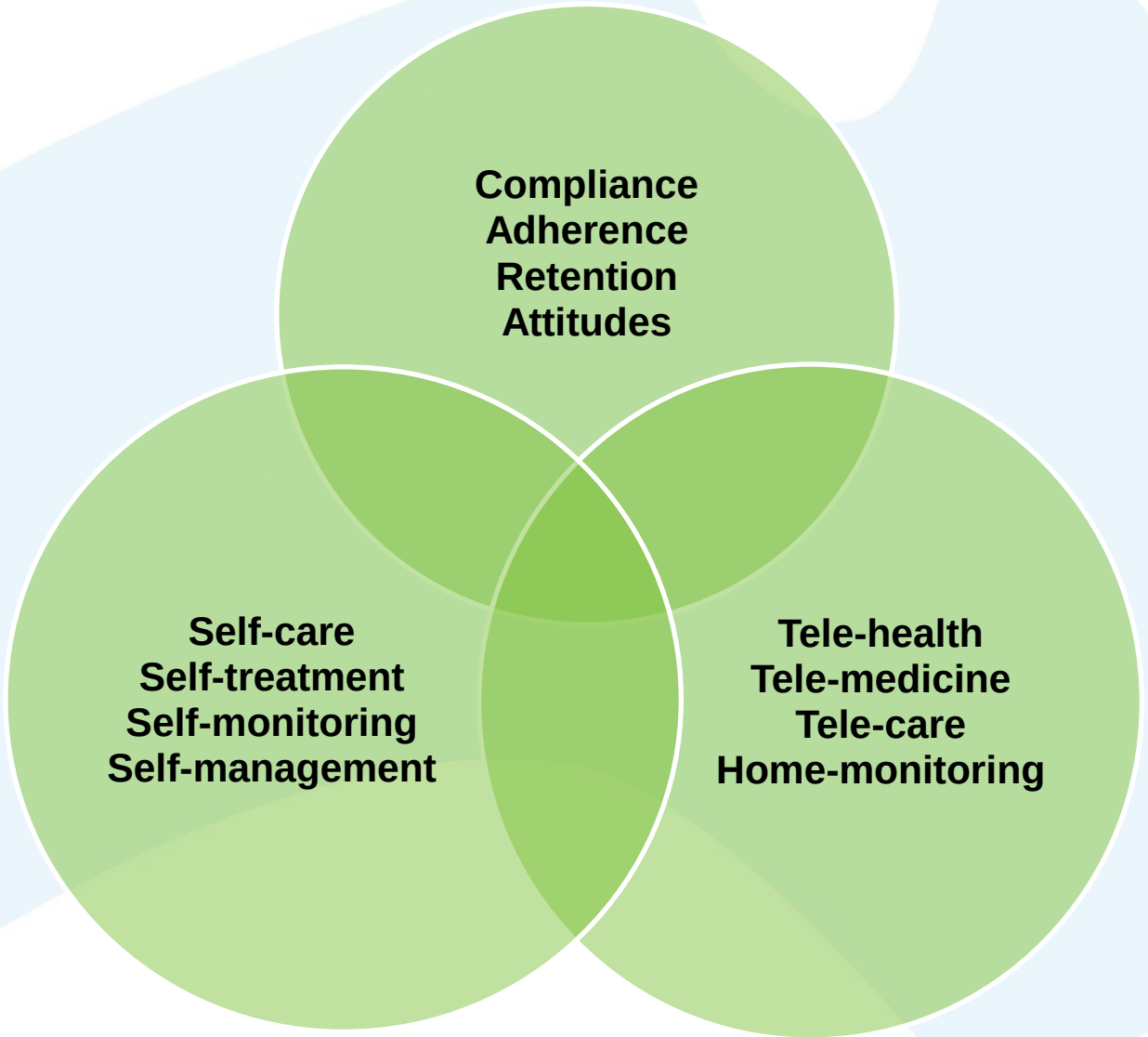
UNIVERSITY OF WESTERN SYDNEY

MAY 2015

ANTHONY MAEDER AND NATHAN POULTNEY

THRIL
Telehealth Research & Innovation Laboratory

# Review of Knowledge Space



# Review Search Methodology

- Sources PubMed, Google Scholar and Scopus (from 1990)
- Defined final set of search terms iteratively from samples
- Over 10,000 papers identified as potentially of interest
- Filtered by high relevance, citation rates, and recentness
- 160 potential papers, reduced to 72 (title/keyword/abstract)
- Classes: High (40), Medium (18) and Low (14) relevance

# Review Findings - Clinical Scope

| Clinical Area | Prominence |
|---|---|
| Blood Pressure Monitoring | *** |
| Heart Failure / Stroke Monitoring | *** |
| Diabetes | *** |
| Asthma | ** |
| Chronic Obstructive Pulmonary Disease | ** |
| Activity Monitoring of Daily Living | ** |
| Lung Functional / Respiratory Disease | ** |
| Well Being | * |
| Cystic Fibrosis | * |

# Review Findings - Study Scope

| Type of Study Methodology | |
|---|---|
| Randomised Control Trial | Case Study |
| Systematic Review | Randomised Survey |
| Feasibility Study | Literature Review |
| Pilot Study | Field Trial |
| Prospective Study | Qualitative Study / Evaluation |
| Outcome Pilot | Mixed Methods Study |
| Cross-functional Survey | Longitudinal Study |

# Overall Observations

- Studies mostly <12 months, biased to >50yo males (2/3)
- Sample sizes vary greatly, from 10’s to 1000’s
- Participation and compliance falls over time, faster at start
- Typical compliance level <<50% by end of trial
- Misunderstandings common (trial expectations, technology)

# Example 1

**Randomised Control Trial  with120 Participants – Smartphone based home care model for cardiac rehabilitation**

- Intervention group had a significantly higher uptake (80%) in comparison to the traditional, centre-based program (62%).
- Adherence in the intervention group was also significantly higher with 94% compared to 68%
- The same was also true with the completion rate within the intervention group; 80% compared to 47%.

Varnfield, M., Karunanithi, M., Lee, C., Honeyman, E., Arnold, D., Ding, H., Smith, C. and Walters, D. (2014). Smartphone-based home care model improved use of cardiac rehabilitation in postmyocardial infarction patients: results from a randomised controlled trial. Heart, 100(22), pp.1770-1779

# Example 2

**125 test patients, 250 control patients –**
**NBN CSIRO trial of a home monitoring device for chronic disease**

- Participants' satisfaction, usability, acceptance, workload, anxiety and strain are factors associated with compliance or non-compliance. Entry and exit questionnaires utilised.

- Clinical benefits were the focus of the report's findings however they indirectly imply a "high level of acceptance by patients and their carers".

Celler, B., Sparks, R., Nepal, S., Alem, L., Varnfield, M., Li, J., Jang-Jaccard, J., McBride, S. and Jayasena, R. (2014). Design of a multi-site multi-state clinical trial of home monitoring of chronic disease in the community in Australia. BMC Public Health, 14(1270)

# Factors Influencing Compliance

- Education and coaching of patients raises compliance
- Elderly and chronic patients more compliant
- Confusion with processes and low technology literacy
- Empowerment through independence and motivation

# Opportunities for Future Work

- Building the evidence base as insufficient evidence exists in the scientific literature for informing most compliance considerations
- Addressing attrition and declining compliance level proactively and early in future trials
- Establishing associations between compliance patterns and outcomes (clinical and economic)
- Understanding the importance of education, training, attitude and interaction in the delivery of home telehealth

# Summary

*Empowered Citizens and effective Self Care supported by appropriate Technology are not the whole answer but they are fundamental pillars for successful mid to long term reform and a sustainable Health and Care Sector.*

**.... So if you would like to join the conversation, please contact us.**

Self Care Alliance www.SelfCareAlliance.org.au

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