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# Who Gets Stroke Rehabilitation? Utilization, Access, and Decision-Making

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# Introduction

Taking a health system lens and population perspective

- Other speakers will bring in clinical and lived perspectives

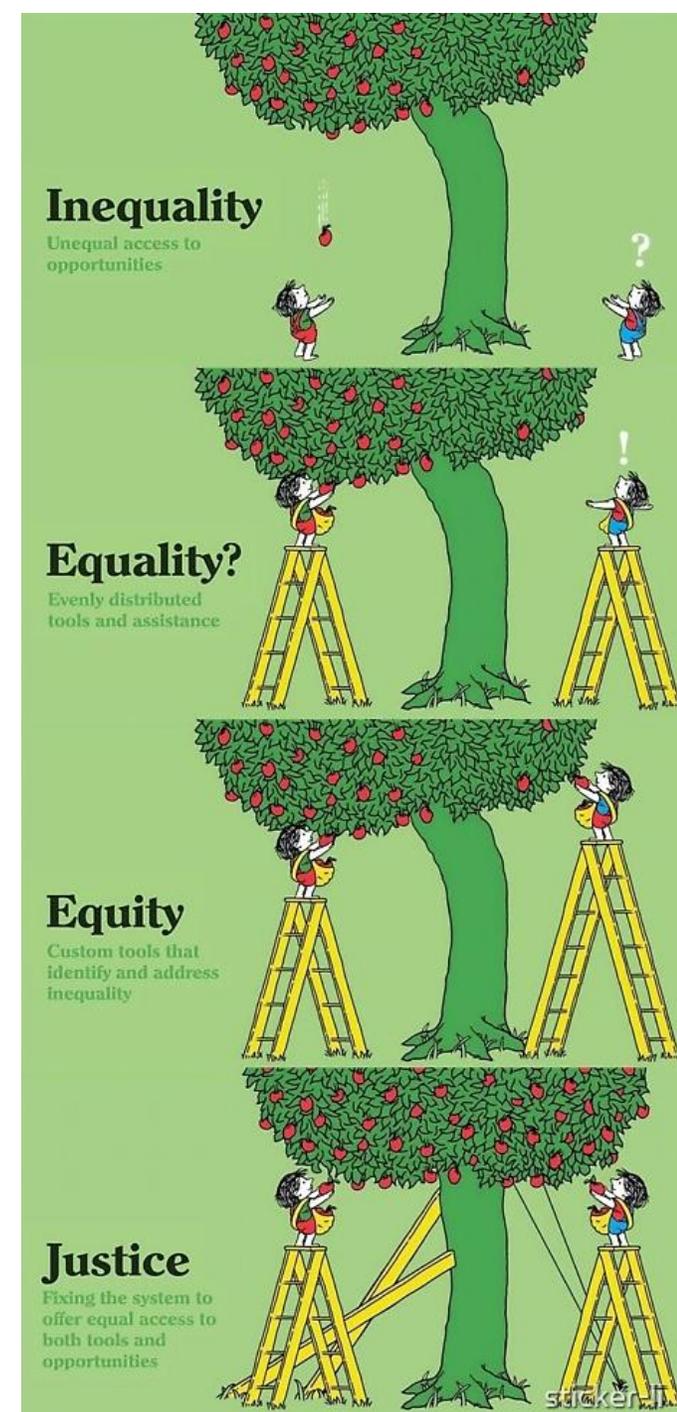
No conflicts of interest

- Physiotherapist in primary care
- Work with systematic reviews, guidelines and methods development



# Why is this important?

- Unmet needs are common after stroke
- Rehabilitation is key to mitigate disability and meet the needs after a stroke, both in the short- and longer term.
- Ideally, rehabilitation should be:
  - Utilized by people with the most needs
  - Delivered on equal terms irrespective of certain characteristics such as gender, age or living situation.
- If not reached, it can raise concerns related to **inequality** and **equity**
  - Equality relates to evenly distributed rehabilitation use
  - Equity relates to the absence of unfair and avoidable differences in rehabilitation use (and health)



# What are key interest-holders recommending?

WHO's Rehabilitation 2030 Initiative:

*“Priority area 5: Building comprehensive rehabilitation service delivery models that **progressively achieve equitable access to quality services....**”*

Stroke Association:

*“When stroke does strike, it **doesn't discriminate. But people, organisations, and systems do....We need to make changes in our own systems, processes and practices.**”*

Stroke Action Plan for Europe:

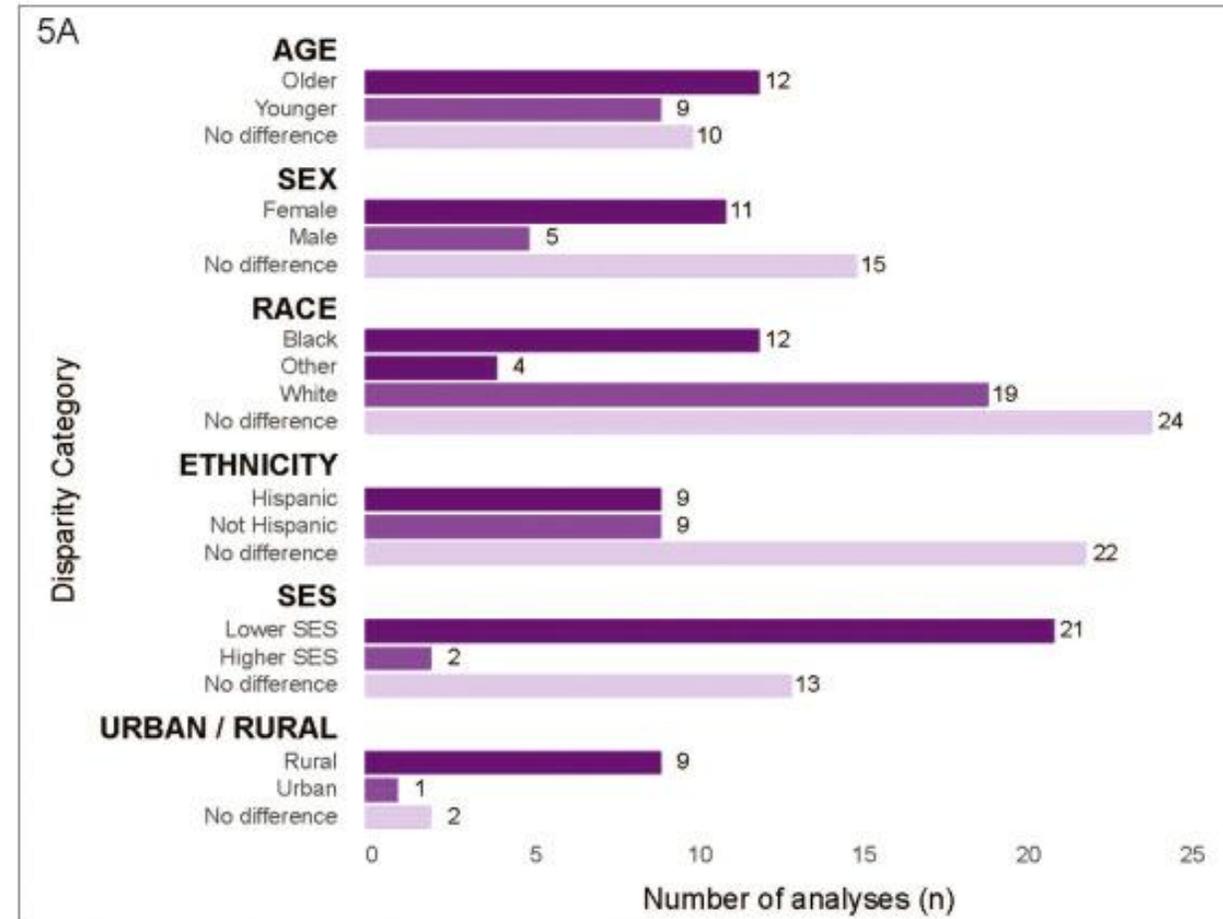
*“Implementing a national stroke plan.....should be adaptable to regional circumstances **to ensure equal access to stroke care, regardless of patient age, characteristics, region and time of hospitalisation**”.*

# What do we know?

Two reviews: In US 2025 (1), and Europe in 2023 (2)

- What and how equality are studied vary widely (methods, population, rehab setting, definitions, follow-up time etc)
- Large variability in findings about equality - who receives less rehabilitation
- Minority of studies include multiple rehabilitation settings
- Variability within geographic regions

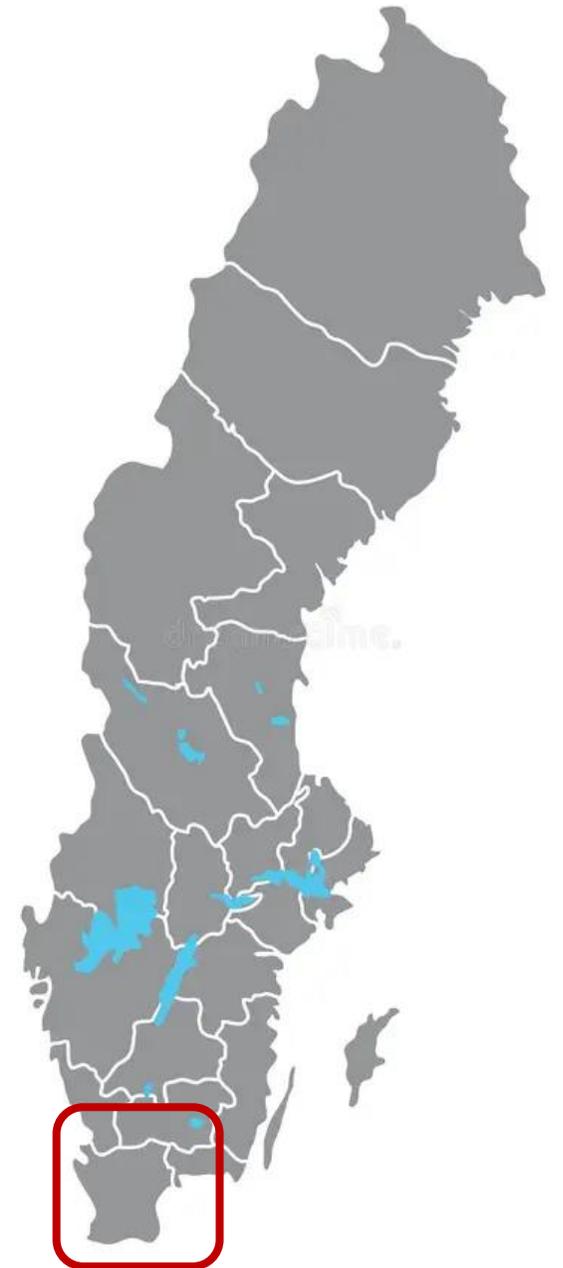
From *Freiburger et al, scoping review, US, 2025*





# How did we explore this?

- People with a first time stroke in Southern Sweden
  - Riksstroke data, 3 month follow-up and population register data
- Rehabilitation use over two years
  - Health medical records register
    - team, physiotherapist and occupational therapist consultations
    - inpatient-, outpatient-clinics and private- and regional primary-care
- Not able to include rehabilitation delivered by municipalities
  - Not including people that municipalities care for



# Who did we include?

- 3034 were community-dwelling people with a first-time stroke
- Rehabilitation utilization during 2018-2019
- Avoid impact on rehabilitation during the pandemic
- A total of 41,224 rehabilitation consultations were recorded over two years

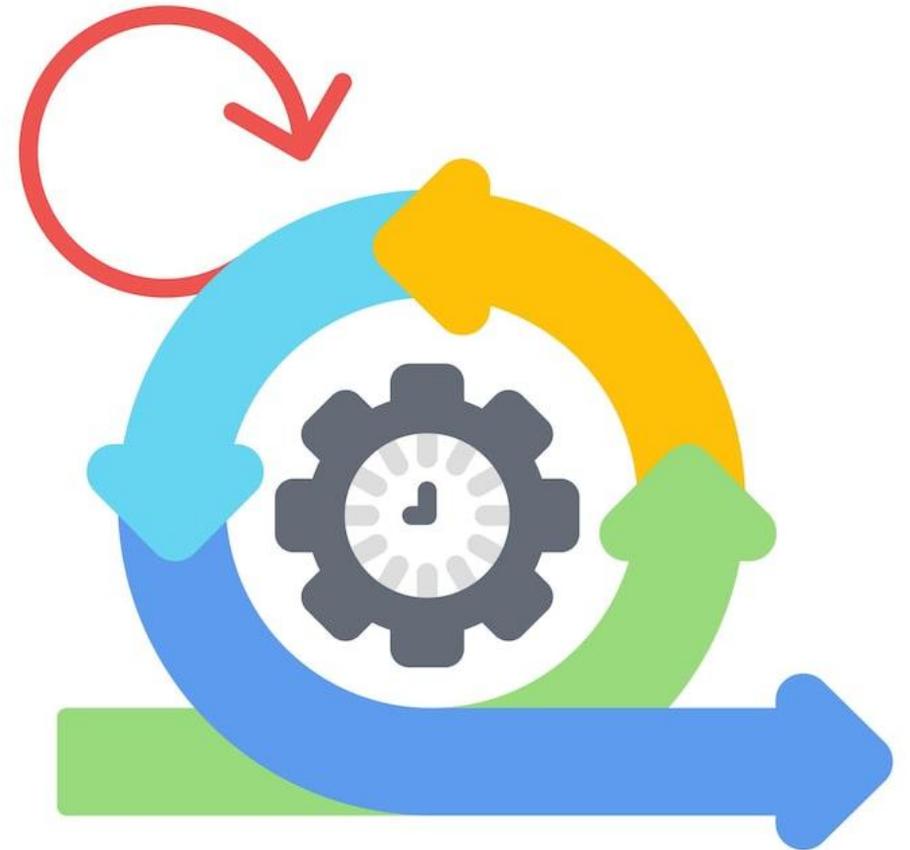


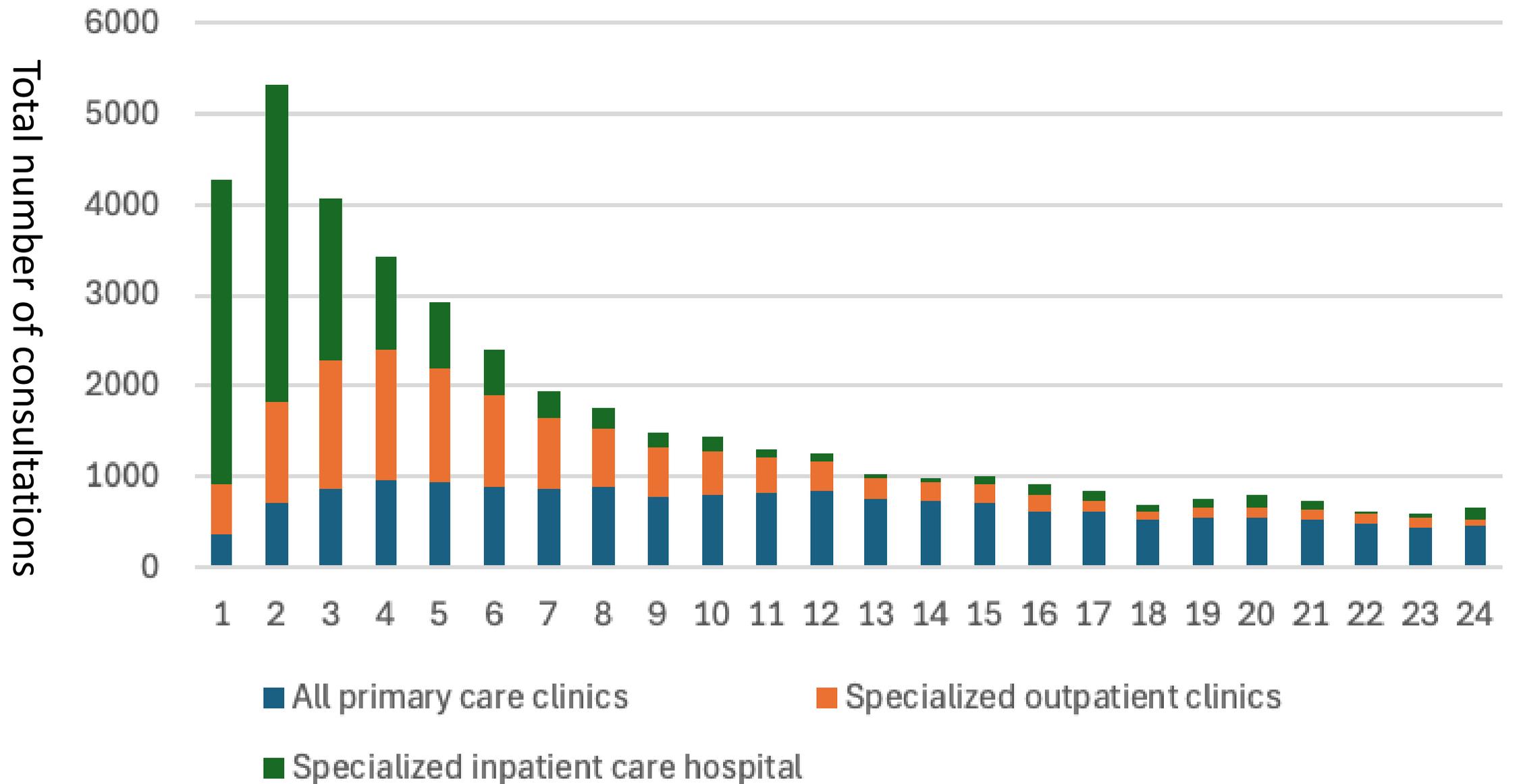
# When is rehabilitation delivered?

**Less than half** of the stroke population received any rehabilitation

- 42% first three months after discharge
- 42% between month 4 to 12
- 32% between month 13 and 24
  
- 33% of all consultations occurred the first three months

**1/5th** of the people after stroke utilize 90% of all rehabilitation.





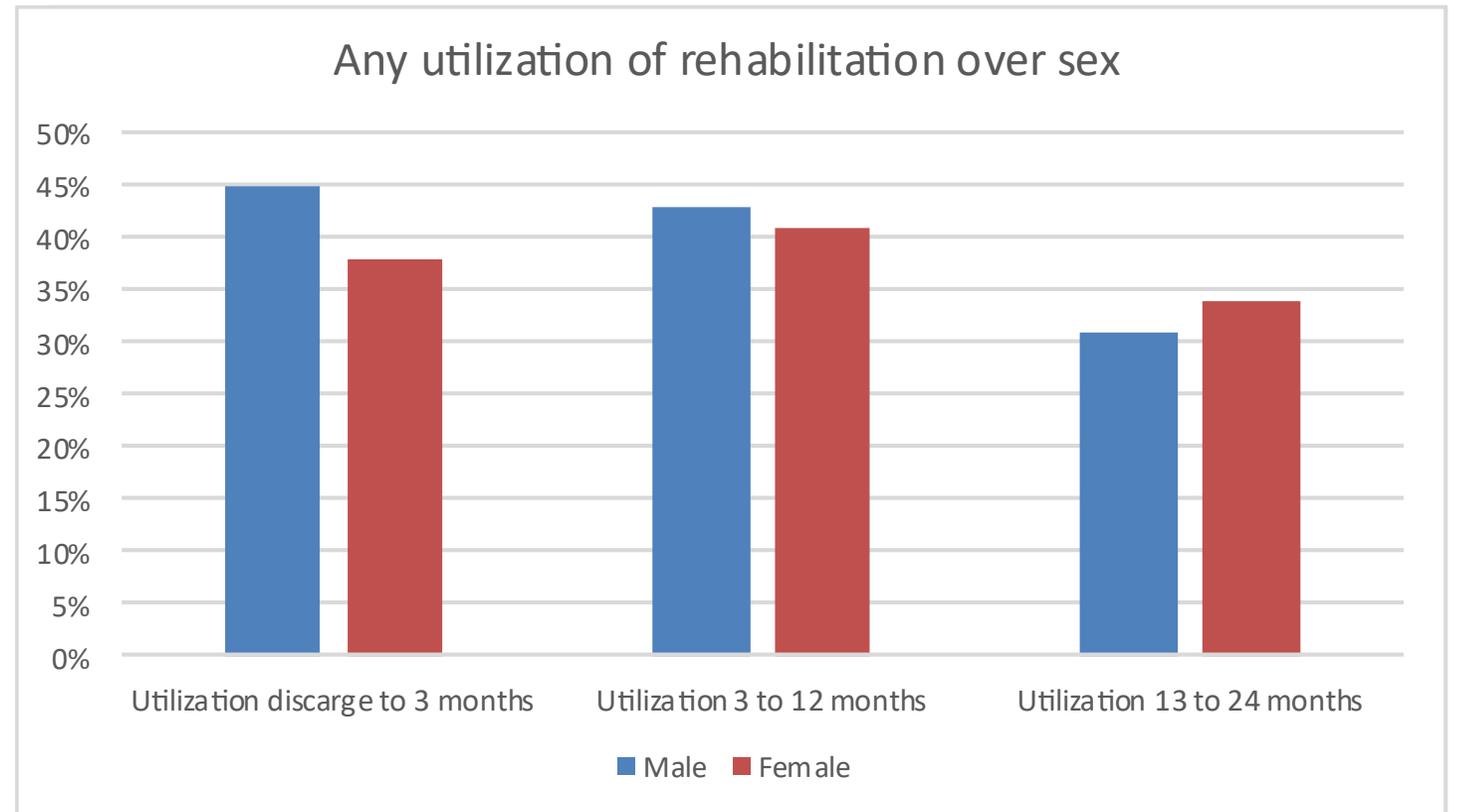
# Who receives the rehabilitation?

- People living alone receives rehabilitation less often



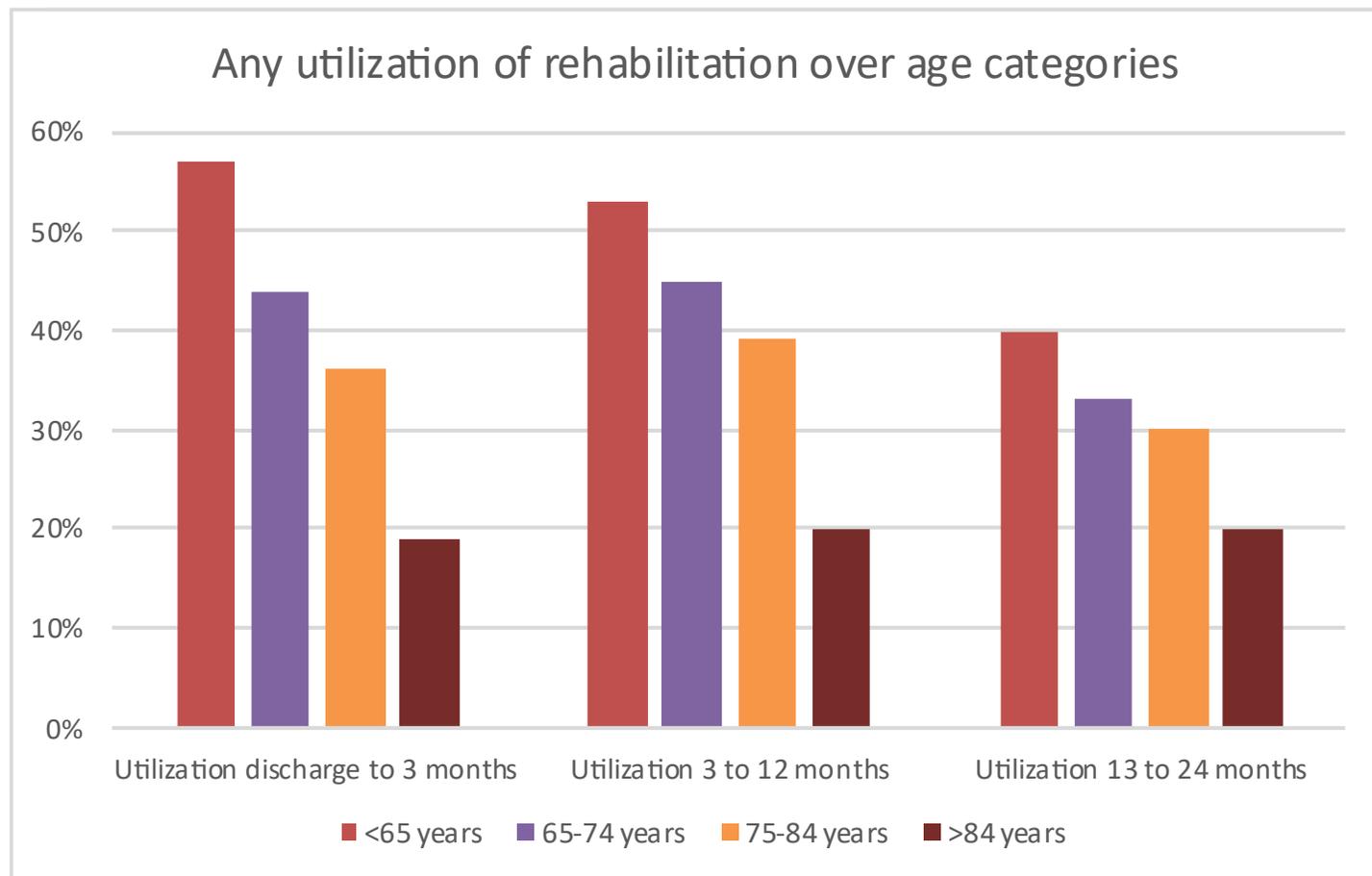
# Who receives the rehabilitation?

- People living alone receives rehabilitation less often
- Women receives rehabilitation less often year 1



# Who receives the rehabilitation?

- People living alone receives rehabilitation less often
- Women receives rehabilitation less often year 1
- Older people receive rehabilitation much less often

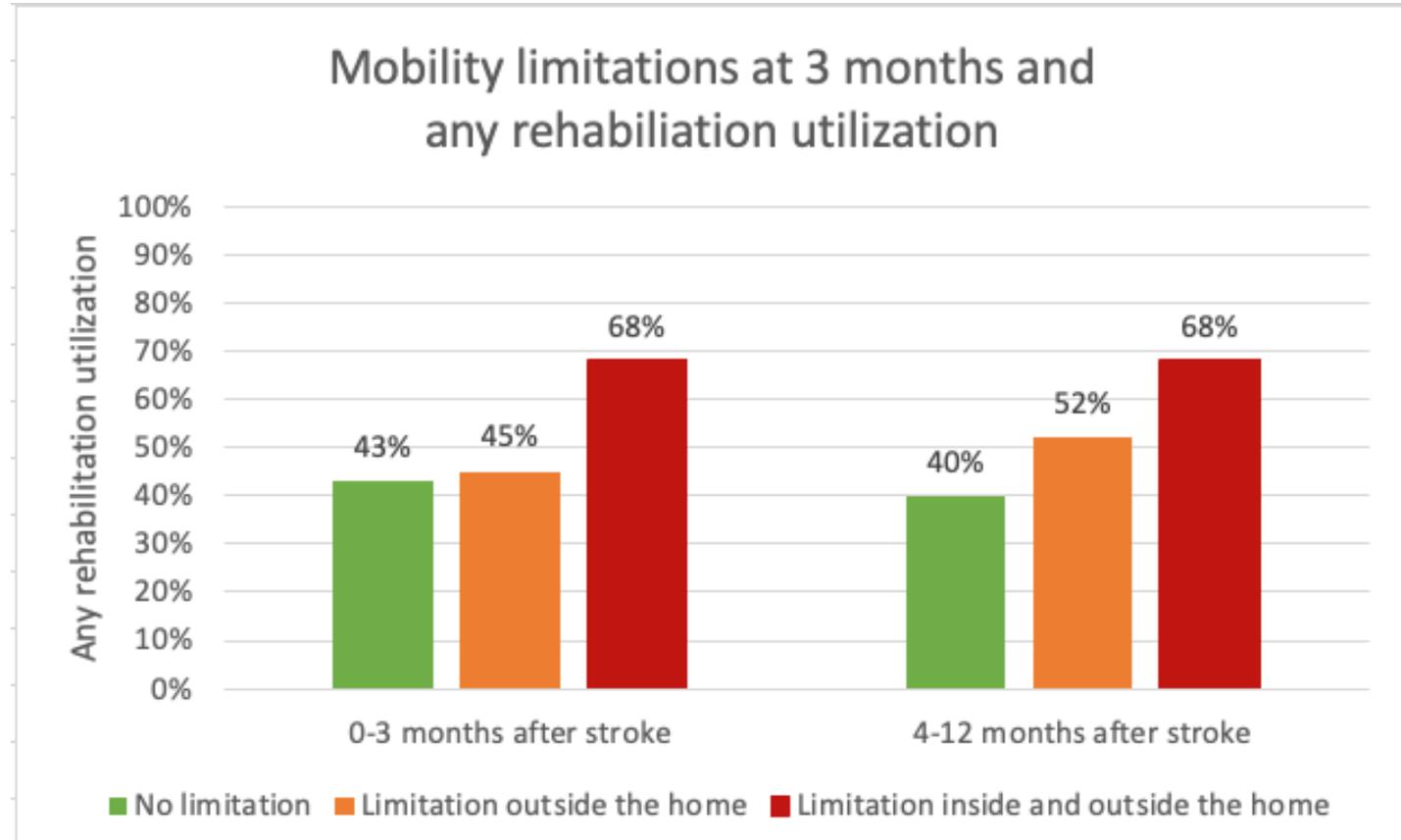


# Do we reach people with the most needs?

## PRELIMINARY DATA

### People with mobility limitations at 3 months

- People with more mobility limitations receive rehabilitation more often
- 3-5 out of 10 do not receive any rehab

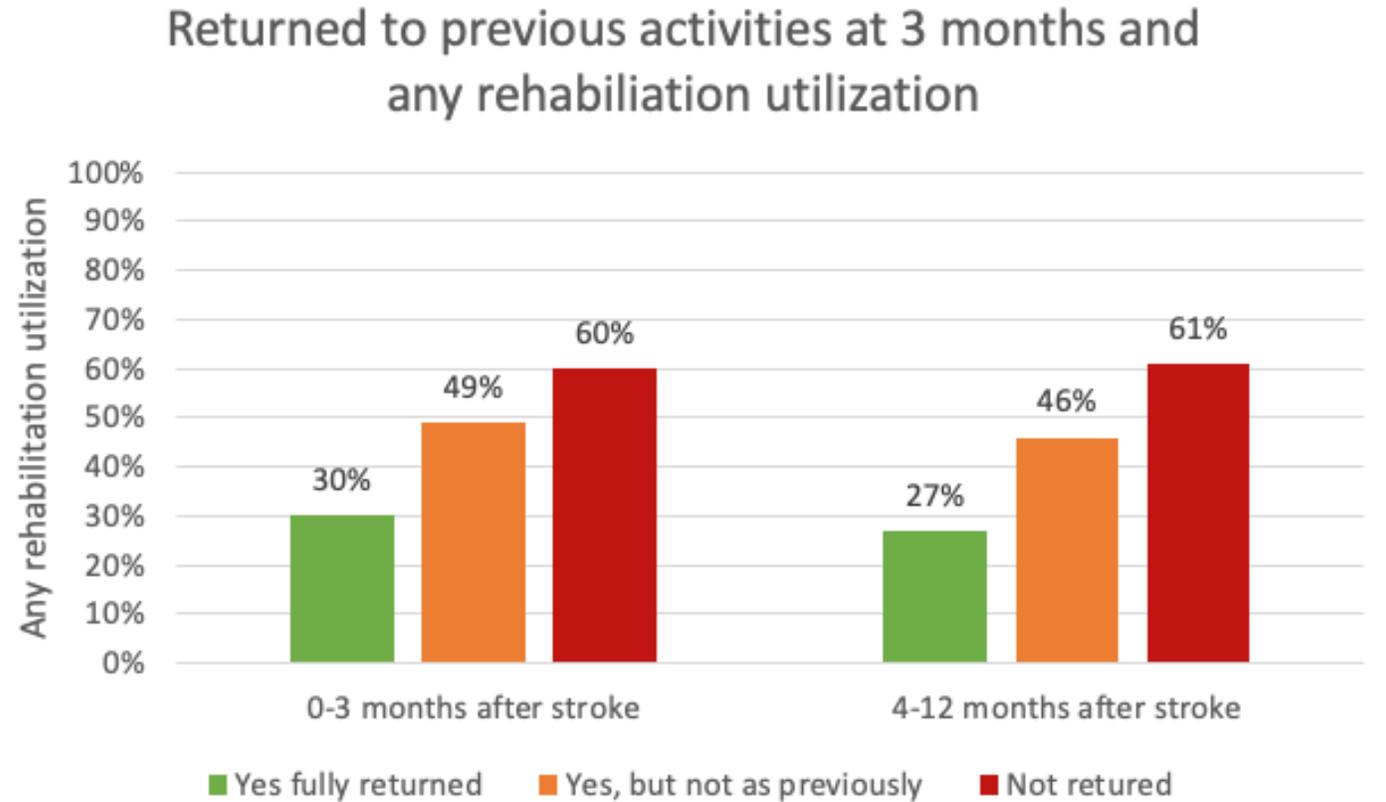


# Do we reach people with the most needs?

## PRELIMINARY DATA

People with activity restrictions at 3 months

- People with more activity restrictions receive rehabilitation more often
- 4-5 out of 10 do not receive any rehab



# Do we reach people with the most needs?

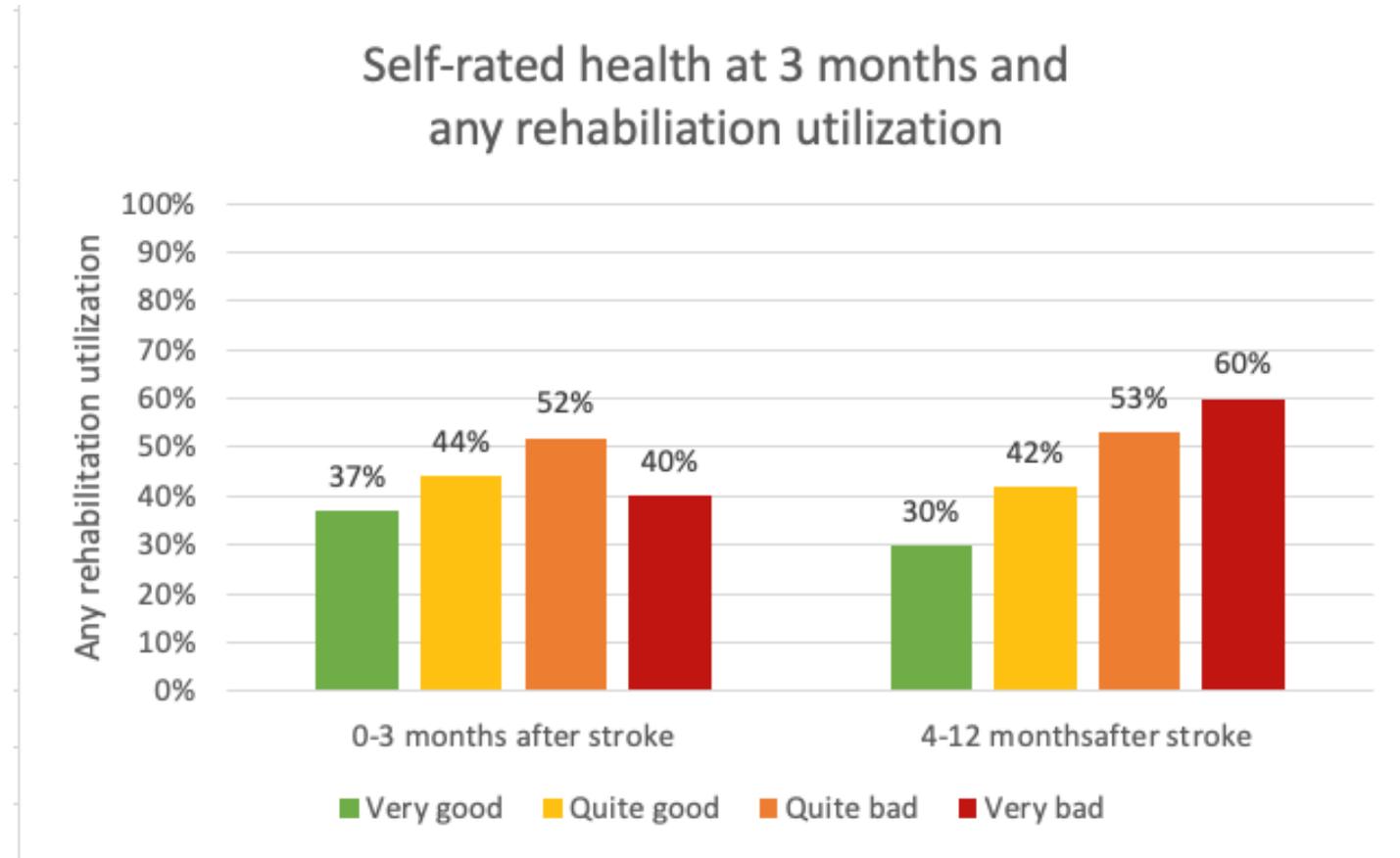
## PRELIMINARY DATA

People with impact on self-rated health

- People with worse self-rated health receive rehabilitation more often
- 4-6 out of 10 do not receive any rehab

People who have no problems with mobility, activity and health:

- still receive many rehabilitation consultations
- while people who have more needs do not



# Considerations for decision-making?

- Bring equality and equity into decision-making support tools, like guidelines
- Guideline recommendations can unintentionally create health inequity and inequality
- **GRADE Evidence-to-Decision framework (3)**
  - Support decision makers to make the best possible decisions, or guide decisions made by others.

(3) Alonso-Coello P et al, GRADE Evidence to Decision (EtD) frameworks: a systematic and transparent approach to making well informed healthcare choices. 1: Introduction. BMJ. 2016

1	<b>Problem</b> ⓘ Is the problem a priority?
2	<b>Desirable Effects</b> ⓘ How substantial are the desirable anticipated effects?
3	<b>Undesirable Effects</b> ⓘ How substantial are the undesirable anticipated effects?
4	<b>Certainty of evidence</b> ⓘ What is the overall certainty of the evidence of effects?
5	<b>Values</b> ⓘ Is there important uncertainty about or variability in how much people value the main outcomes?
6	<b>Balance of effects</b> ⓘ Does the balance between desirable and undesirable effects favor the intervention or the comparison?
7	<b>Resources required</b> ⓘ
8	<b>Certainty of evidence of required resources</b> ⓘ What is the certainty of the evidence of resource requirements (costs)?
9	<b>Cost effectiveness</b> ⓘ Does the cost-effectiveness of the intervention favor the intervention or the comparison?
10	<b>Equity</b> ⓘ What would be the impact on health equity?
11	<b>Acceptability</b> ⓘ Is the intervention acceptable to key interest-holders?
12	<b>Feasibility</b> ⓘ Is the intervention feasible to implement?

# Integrate into GRADE Evidence-to-Decision

Criteria	Question and Judgments	Equity consideration
Problem and priority	Is the health problem or population a priority?	Guidelines can miss or disproportionately target certain groups
Benefits and harms	How substantial are the desirable and undesirable anticipated effects?	Benefits and harms may differ across groups
Certainty of the evidence	What is the overall certainty of the evidence of effects?	Body of evidence may not apply to certain groups
Outcome importance	Is there important uncertainty about or variability in how much people value the outcomes?	Disadvantaged populations may value the main outcomes differently
Balance of effects	Does the balance between desirable and undesirable effects favour the intervention or the comparison?	Informed by three previous criteria
Resource use	How large are the resource requirements (costs)?	Resource requirements vary by setting and groups
Equity	What would be the impact on health equity?	Differential reach or effects on disadvantaged populations
Acceptability	Is the intervention acceptable to key stakeholders?	Differences in acceptability between groups
Feasibility	Is the intervention feasible to implement?	Differences in feasibility of carrying out intervention between groups

# What's next?

## Summary:

- Most people after stroke do not receive any rehabilitation
- Differences between populations
- People with more needs more often meet a rehabilitation professional, but a large proportion does not

## Further work needed:

- More research likely to improve the picture
- How can we reach the right people with rehabilitation, without unwarranted discrepancies?
  - Local settings?
  - Regional settings?
  - National settings?



# Thank you

- To all for listening
- To contributors
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