# What is the role of virtual community medicine for older people?
## Scoping Review and Clinic Data Analysis

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## WHY a scoping review?

- Broad research question
- Rapidly evolving and emerging research area
- Recent increase in the use of virtual technology due to the COVID-19 pandemic
- Mapping of wide range of intervention approaches and outcomes
- Identification of a focus for subsequent systematic review

## Background

➢ Increase in virtual consultations due to **COVID-19**.
➢ Minimise virus transmission in **clinically vulnerable older adults**.

This research **has two components**:
1) **Scoping review** (ongoing)
2) **Analysis of data** from a sample of virtual community medicine consultations for older patients

Preliminary findings:
➢ Virtual clinics associated with **fewer appointment cancellations** and **shorter waiting times** (Murphy et al., 2020).
➢ Virtual consultations may not benefit everyone.
➢ This review therefore aims to identify the key factors to consider for virtual consultations and map a broader range of clinical outcomes.

## Scoping review

➢ **PRISMA-P** and **PICO** framework
➢ **Four databases**: Medline, Embase, CINAHL and Psycinfo
➢ **Search terms combined**:
  1) **Virtual care** (31 terms)
  2) **Older people** (7 terms)

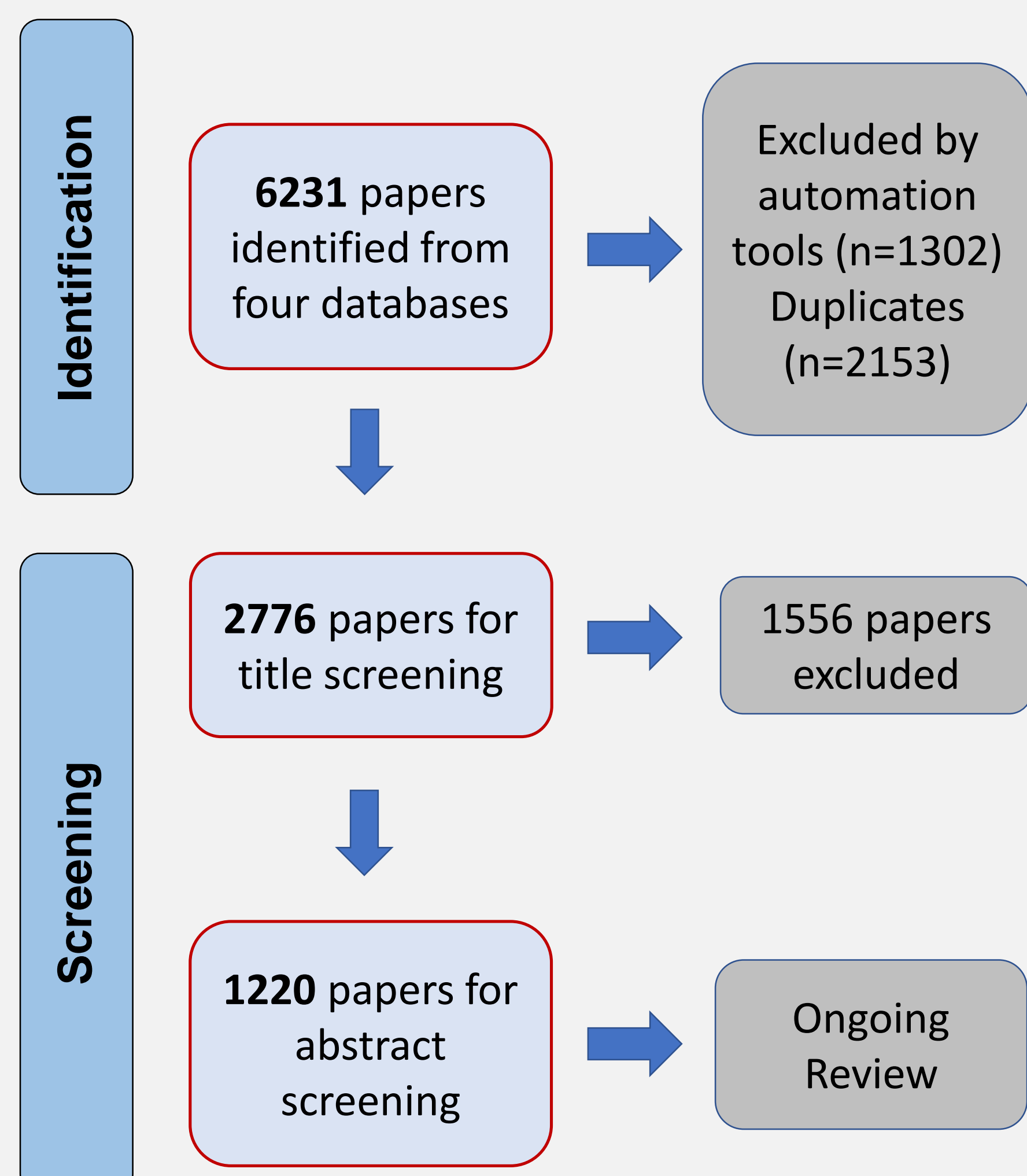| P | • Patients ≥ 65 years old at any geographical location |
| I | • Virtual community consultations |
| C | • Face-to-face consultations |
| O | • Clinical outcomes, factors affecting virtual consultation, satisfaction |

➢ **Exclusion Criteria**:
- Published >10 years ago
- Non-English
- Non-human
- No data on virtual consultation method
- Inpatient services only
- Intervention NOT for patients (i.e. carers only)

### PRISMA Flowchart

**Identification**

**6231** papers identified from four databases → Excluded by automation tools (n=1302) Duplicates (n=2153)

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**Screening**

**2776** papers for title screening → 1556 papers excluded

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**1220** papers for abstract screening → Ongoing Review

## Virtual clinic data analysis

### Categorisation of data

| Personal | Clinic efficiency | Outcomes |
| --- | --- | --- |
| • Age | • Waiting time | • Hospital admission |
| • Gender | • Time for clinic letter to be sent to GP | • Investigation |
| • Postcode | | • Onward referral |
| • Deprivation | | |

**Medical Records**
- Past medical conditions
- Drug history
- Frailty category
- Diagnosis
- Reasons for referral

➢ **Sample of 100 new** virtual community medicine **consultations from April 2020 to March 2021** in Litherland, Liverpool.
➢ **Convenience sampling of 8-10 patients per month** (EMIS records).
➢ Analysis on **IBM SPSS** software (version 27).

## Virtual clinic data results

Table I: Demographic and medical characteristics (n=100)

| | |
| --- | --- |
| Gender distribution | Female: 43 Male: 57 |
| Mean age | 81.04 |
| Mean waiting time | 8.9 days — Min: 0 days Max: 34 days |
| Mean time for clinic letter to get to the GP | 1.6 days — Min: 0 days Max: 12 days |
| Mean IMD score | 25.10 (quintile group 4) |
| Mean no. of medications | 8.16 |
| Mean no. of past medical conditions | 3.19 |
| Most common referral reason | Neurology problems |

### Analysis:

#### Clinic's efficiency
- The **average waiting time meets the self-imposed standard** (14 days) but not the letter sending time (24 hours).
- Most patients live in L30 and the clinic is based in L21. Virtual approach may have **saved travelling time and cost** for both patients and clinicians.
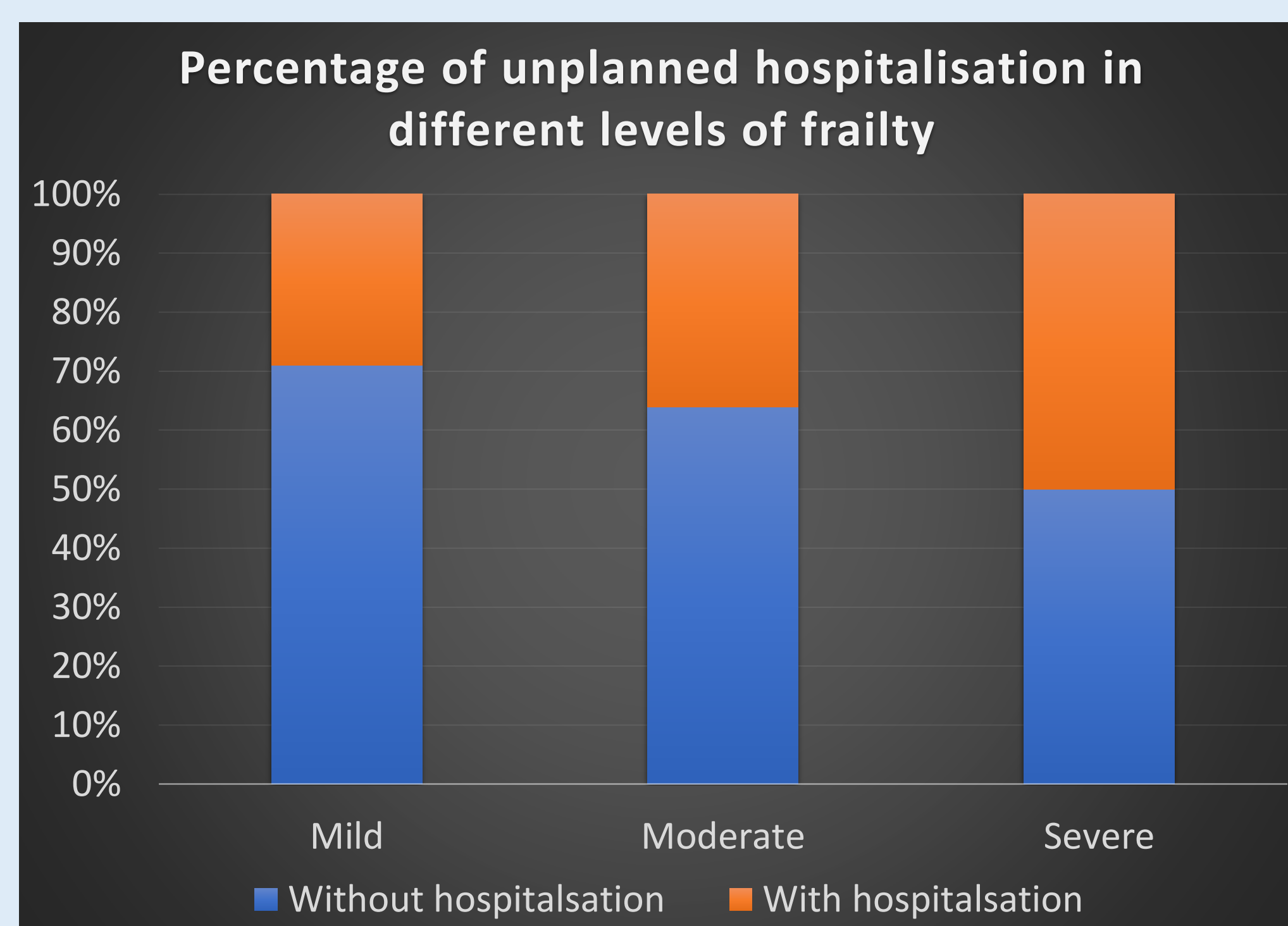
#### Deprivation
- Average IMD score is within the **quintile group 4.**
- Comparing to the report by Liverpool Council (2019), the IMD score of the patients in this clinic is **similar to the Northwest area** and **lower than the Liverpool City Region**.
- Patients are **living in more deprived areas when compared nationally.**
- **Higher proportion of patients from more deprived areas** waited **over 2 weeks to be seen** than that of the those in less deprived areas.

#### Polypharmacy issues
- **80%** of patients had **polypharmacy** (≥ 5 medications)
- **More than half of the patients** that are over 65 **take more than 8 medications- a fivefold increase** of what NHS Digital – Health Survey for England (2016) suggested.

Graph I: Unplanned hospital admissions according to frailty

**Percentage of unplanned hospitalisation in different levels of frailty**

(Bar chart: Mild, Moderate, Severe — Without hospitalisation / With hospitalisation)

#### Hospital admissions post virtual consultation
- **Frailty**: 50% of patients with severe frailty compared to only 29% of patients with mild frailty experienced unplanned hospitalization.
- **Age**: Increase from 20% to 41% in patients aged >80 years.
- **Polypharmacy**: Increase from 18% to 66% in patients with polypharmacy.
- **Deprivation**: Patients with **unplanned hospitalisation lived in areas with a higher IMD score** than those who were not hospitalised.

## Discussion

Deprivation:
- **Costs** of accessing the internet and purchasing a digital device can be a **burden for patients** (Fang et al., 2018).
- A possible cause of extended clinic waiting time.
- Devices may need to be provided to the patients

Education Level:
- **Technology literacy** may **hinder patients to use digital devices.**
- **Educational support** may be needed.

Virtual consultation modalities:
- Presence of **carers' support** may affect patients' preference on using a video-based or telephone-based assessment (Liu et al., 2021).

Risk versus benefit:
- Those with **higher degrees of frailty and complexity** tend to be at much **higher risk of hospital attendance** despite virtual interventions.
- Living in a **more deprived area may also be associated with higher hospital admission rates.**
- Social determinants of health and wellbeing cannot be omitted.
- Health and social care could provide **additional means of monitoring these higher risk individuals** continuously (e.g., self/remote monitoring).

### Limitations

Sample size:
▪ 314 new patients were seen in total during the time stated. 100 patients were included in this sample.

No comparison data:
▪ Absence of data when clinic runs face-to-face.
▪ Remaining uncertainty on whether patient outcomes have improved or worsened due to the new approach.

Limited breadth of data:
▪ Unable to determine how the clinic **benefits from a virtual approach.**

### Recommendations for further service evaluation

Data from the clinic:
I. **Clinician's experience** of virtual approach
II. Evolution of **diagnosis certainty** level
III. Any appointment duration difference

Data from patients:
I. Patients' **satisfaction** on virtual consultation
II. Patients' **education level** and **technology literacy**
III. Virtual **modality preference** (video/telephone)
IV. Role of **family/carer support**

## Conclusions

- Data and papers from the review suggested that factors such as **age, frailty level, social economic status and technology literacy** should be considered when deciding if a virtual approach will benefit patients.
- **Additional data and comparison data is required** in order to **fully evaluate the impact** of virtual consultations in older patients.

## References:

Fang, M., Siden, E., Korol, A., Demestihas, M., Sixsmith, J. and Sixsmith, A., 2018. A scoping review exploration of the intended and unintended consequences of eHealth on older people: A health equity impact assessment. *Human Technology*, pp.297-323.

NHS Digital. 2016. *Health Survey for England, 2016 - NHS Digital*. [online] Available at: <https://digital.nhs.uk/data-and-information/publications/statistical/health-survey-for-england/health-survey-for-england-2016> [Accessed 5 August 2021].

Liu, L., Goodarzi, Z., Jones, A., Posno, R., Straus, S. and Watt, J., 2021. Factors associated with virtual care access in older adults: a cross-sectional study. *Age and Ageing*,.

Murphy, R., Dennehy, K., Costello, M., Murphy, E., Judge, C., O'Donnell, M. and Canavan, M., 2020. Virtual geriatric clinics and the COVID-19 catalyst: a rapid review. *Age and Ageing*, 49(6), pp.907-914.

Liverpool.gov.uk. 2019. *The Index of Multiple Deprivation 2019 - A Liverpool analysis*. [online] Available at: <https://liverpool.gov.uk/media/1359213/imd-2019-liverpool-analysis-main-report.pdf> [Accessed 12 August 2021].