

Technologies to Enhance Patient Discharge from Hospital: A Systematic Scoping Review

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Background

- Patients are discharged from hospital every day
- One in five are readmitted within 30 days¹
- Key challenges are poor communication, inadequate discharge summaries, medication confusion, poor arrangements for homecare²
- Technologies could be used to enhance patient discharge³
- We conducted a systematic scoping review of the literature to inform the development of a new technology to enhance patient discharge from two wards in the Mid and South Essex NHS Foundation Trust

Review question

Which technologies are used to enhance patient discharge from hospital?

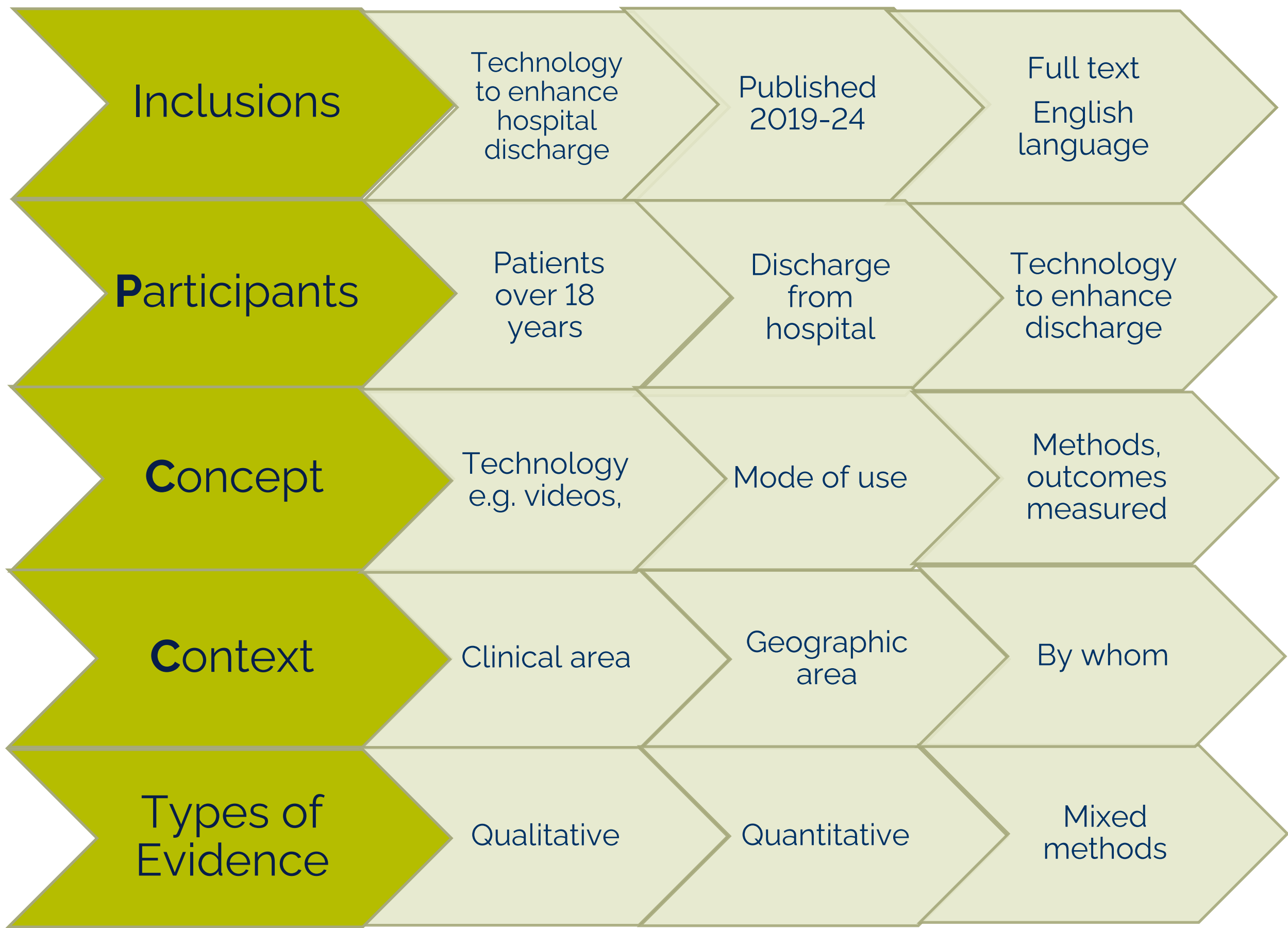
Sub questions:

- Where are they used?
- How are they used and evaluated?

Methods

We used Joanna Briggs Institute (JBI) guidance for conducting scoping reviews⁴

Figure 1. Applied JBI guidance



Identification of studies

We searched Embase, CINAHL, Medline & Cochrane library using:

(Podcast*, mobile app*, phone app*, video*, hyperlink*, website*, webpage*, electronic form*, eDischarge letter*, social media for*, webinar*, telehealth, telemedicine, text message*, WeChat, WhatsApp, mobile health app* technolog*, eHealth, mHealth, wearable device*, remote sensing, sms text message*, voice record*, mobile tablet*, webcast*) **AND** (Patient discharge **OR** discharge planning) **AND** (Hospital **OR** secondary care **OR** acute care) **AND** (Enhanc* **OR** improve*)

Selection of studies

One author (VB) screened all abstracts, and the full text of all papers accessed. 20% of included studies were independently screened by (NA)

Figure 2 Data extraction



Data Analysis

Counts and descriptions of technologies, evaluation methods, clinical and geographical settings and study findings were processed in Excel

Results

Figure 3 PRISMA diagram⁵

- 4 databases searched
- 1050 abstracts identified
- 52 papers included

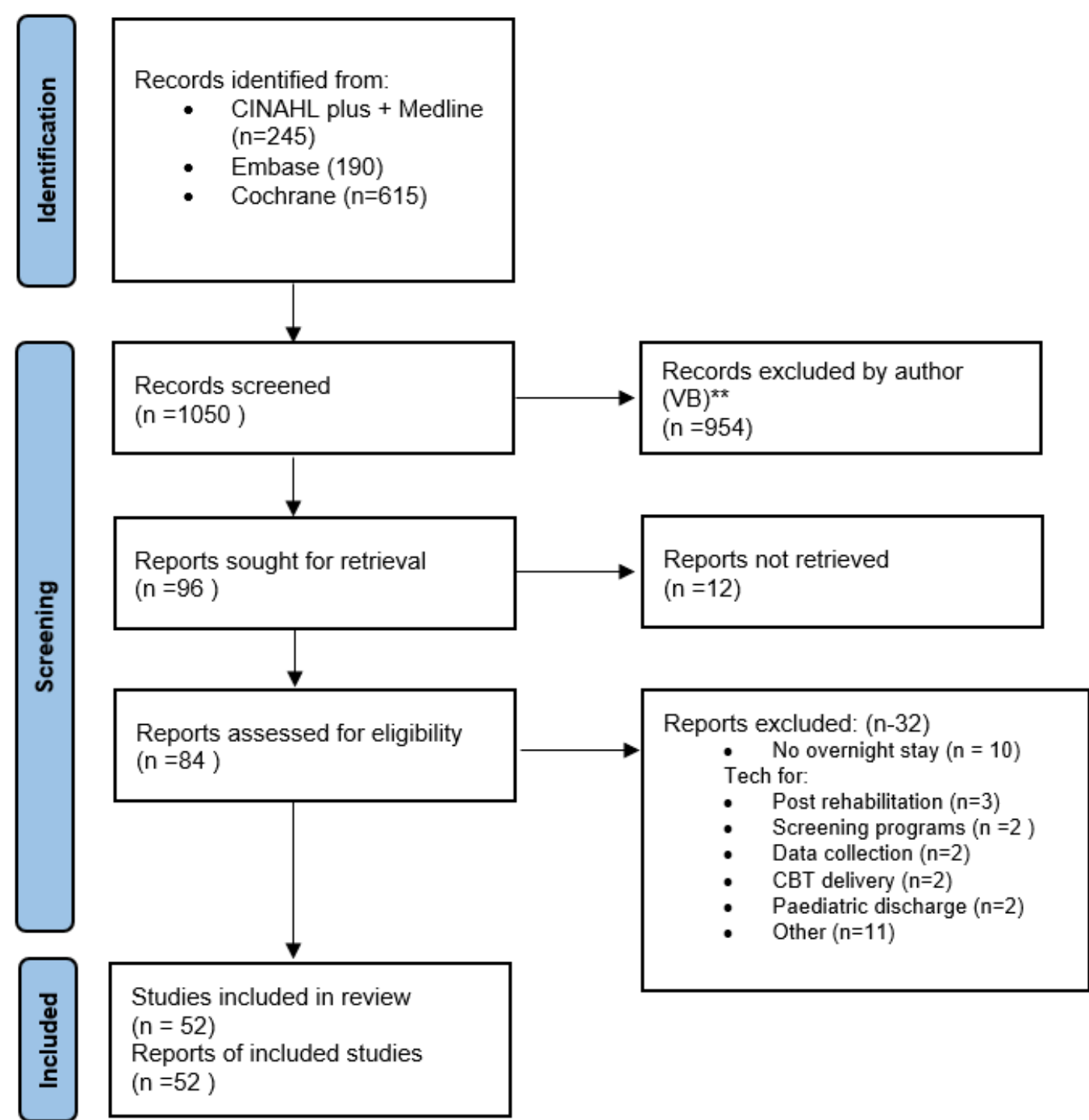
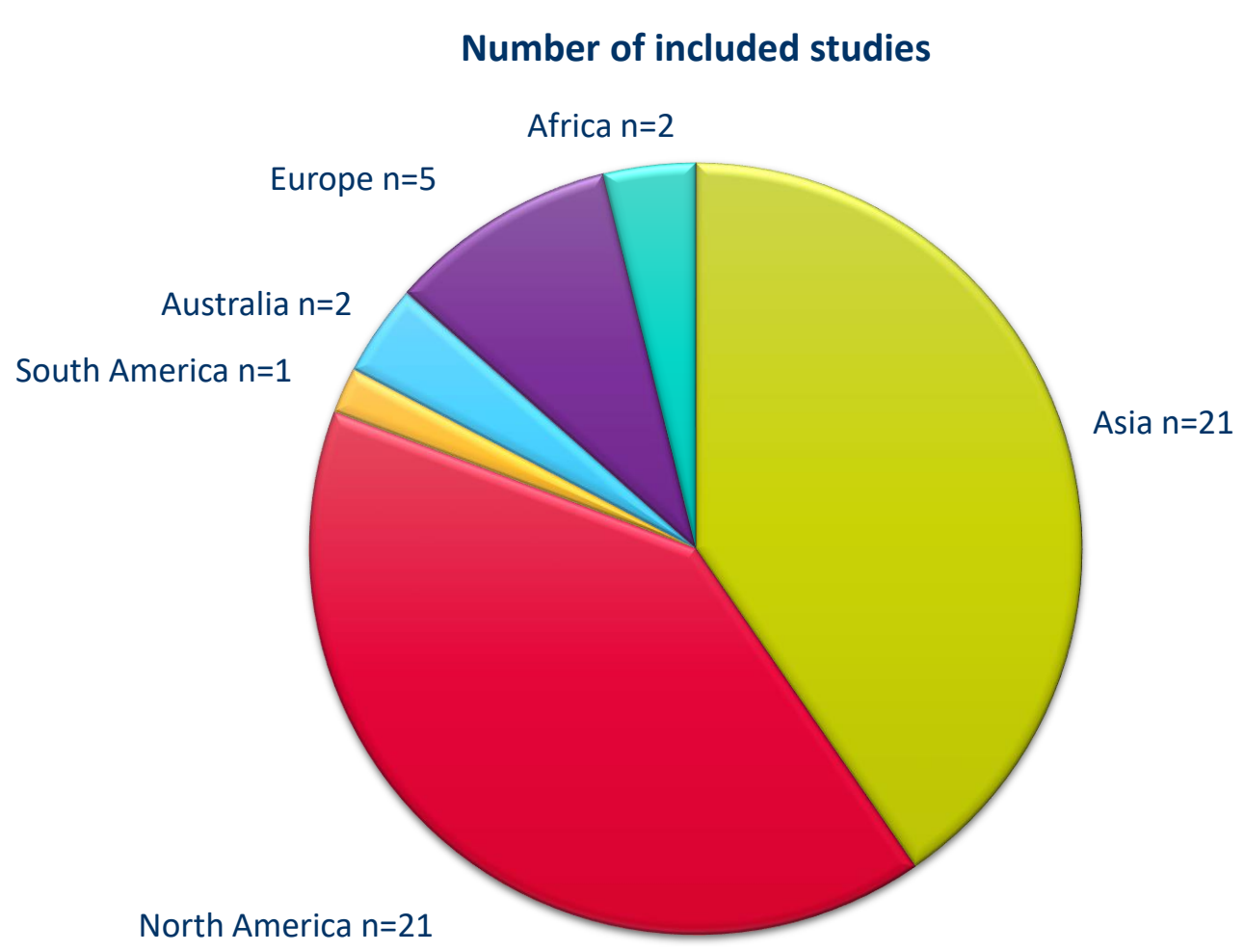


Figure 4 Where technologies are used Geographically



Clinically

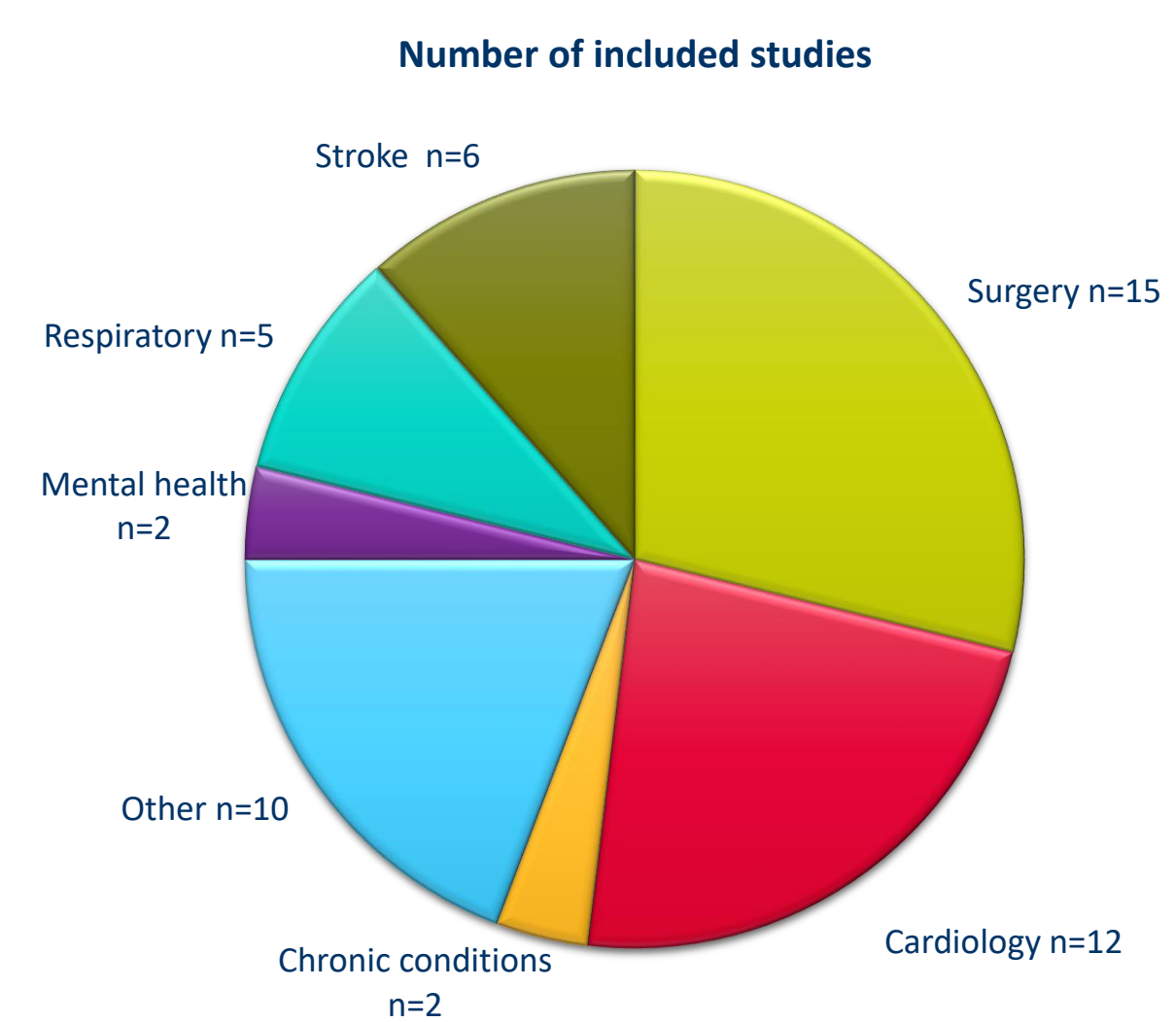


Table 1 Types of technologies identified

Type of technology	No of papers	Example of technology
Apps	19	APP "Recovery Record" with: self-monitoring, positive reinforcement, meal planner, reminders, coping strategies, motivational slogans, link to clinician. Neumayr (2019) Germany
Videos	3	Education video delivered via tablet and secure password protected internet link. Provided with a COPD discharge bundle from specialist respiratory AHP. Barker (2020) UK
Telephone calls	9	Telephone follow-up for person centered care (PCC) plan. First call 1–4 weeks after discharge. RN listens, asks questions identifies pt potential for self-care. Wallstrom (2020) Sweden
Websites	4	Web-based education: (1) post general surgery warning signs; (2) everyday care instructions; (3) a video on surgical wound care and signs of wound complications (Kang 2022) Australia
SMS Texts	3	Automated 1-way SMS text messages about follow-up care, self-management, healthy living and readmission. Delivered at a time specified by patient. Ross (2020) Canada
Wearable technologies	2	Wearable device to detect & alert patients to hypoxia post operatively. Monitoring continued in hospital for select number of days post op and after discharge. Li (2023) USA
Compact Discs	1	Interactive multimedia content for renal transplant patients: education on renal function and problems with guided multiple-choice questions. Mansouri (2020) Iran
Combined technologies	11	Smartphone, BP monitor, medication dispenser, and necklace emergency call button linked to a nurse-led 24/hr. call center. Reminders to check signs and take meds. Laing (2020) Taiwan

How technologies were evaluated

Technologies were evaluated in RCTs (n=41), QI projects (n=3), Qualitative studies (n=1), Mixed methods (n=2) & Observational studies (n=5)

Conclusion

Technologies to enhance patient discharge from hospital are used and evaluated across clinical areas worldwide. Few studies have examined user experience. Addressing this gap is important to maximise the potential benefits of the use of technologies for patients and staff.

References

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