

Supplementary Data

SEARCH STRATEGY

Search conducted via PubMed on January 26, 2012 and updated on February 25, 2013. The core yield for concepts combining primary care + remote monitoring + activities of daily living was $n = 384$ using the Ovid Medline database without revisions for the interval 1996 to the third week of January 2012:

- 1 exp Primary Healthcare/ (48087)
- 2 exp general practice/ (31331)
- 3 exp general practitioners/ (634)
- 4 exp physicians, family/ (8555)
- 5 exp ambulatory care/ (19605)
- 6 1 or 2 or 3 or 4 or 5 (99392)
- 7 ((primar\$ or ambulator\$ or general\$) adj3 (care or caring or cares or practic\$)).mp. (104223)
- 8 exp Nurse Practitioners/ (9119)
- 9 exp Physician Assistants/ (1608)
- 10 8 or 9 (10265)
- 11 7 and 10 (2423)
- 12 6 or 11 (99860)
- 13 exp Telecommunications/ (34604)
- 14 exp Computer Communication Networks/ (47222)
- 15 ((remot\$ or distanc\$) adj5 (monitor\$ or sens\$ or track\$ or check\$)).mp. (3595)
- 16 (mobil\$ adj3 (comput\$ or techno\$ or health\$)).mp. [mp=title, abstract, original title, name of substance word, subject heading word, protocol supplementary concept, rare disease supplementary concept, unique identifier] (2360)
- 17 (m-health or mhealth or e-health or ehealth or ((digital\$ or pervas\$) adj2 health\$)).mp. [mp=title, abstract, original title, name of substance word, subject heading word, protocol supplementary concept, rare disease supplementary concept, unique identifier] (1253)
- 18 (smart home\$ or smart hous\$ or gerontech\$).mp. [mp=title, abstract, original title, name of substance word, subject heading word, protocol supplementary concept, rare disease supplementary concept, unique identifier] (124)
- 19 13 or 14 or 15 or 16 or 17 or 18 (82003)
- 20 12 and 19 (2782)
- 21 limit 20 to (english language and yr="2000 -Current") (2142)
- 22 exp Monitoring, Physiologic/ (71181)
- 23 exp "Activities of Daily Living"/ (30891)
- 24 exp Psychological Tests/ (97095)
- 25 exp Home Care Services/ (18632)
- 26 monitor\$.mp. (348647)
- 27 surveil\$.mp. (84072)
- 28 exp "Quality of Life"/ (80973)

- 29 22 or 23 or 24 or 25 or 26 or 27 or 28 (636659)
- 30 21 and 29 (322)
- 31 62 additional citations from update search

Search for specialized databases and gray literature (IEEE Xplore and Compendex) conducted March 2, 2012 and updated on February 25, 2013. IEEE Xplore is a scholarly research database that indexes, abstracts, and provides full-text for articles on computer science, electrical engineering, and electronics. The database mainly covers material from the Institute of Electrical and Electronics Engineers (IEEE) and the Institution of Engineering and Technology. Compendex, the computerized version of the Engineering Index, is a comprehensive engineering bibliographic database that providing international coverage of the literature of the engineering field, including civil and structural engineering, computer and electrical engineering, energy technology, materials science and metallurgy, bioengineering, air and water pollution, chemical engineering, and solid waste and hazardous waste management. Citations are drawn from 5,000 international sources including journals, conferences, and trade publications.

The following strategies were used in the corresponding databases to retrieve the records in these databases:

- IEEE Xplore

((("primary care" OR "general practice" OR "family practice" OR "family physician" OR "family physicians" OR "ambulatory care")) OR (((("m-health" or mhealth or "e-health" or ehealth or "smart home" or "smart homes" or "smart house" or "smart houses" or gerontech*)))

The resulting yield was 293 citations.

- Compendex

((({primary care} OR {general practice} OR {family medicine} OR {family physician}) WN ALL) AND ((patient* NEAR/5 monitor* OR \$patient NEAR/5 surveil* OR \$home NEAR/5 monitor* OR \$home NEAR/5 surveil* OR remote* NEAR/5 monitor*) WN ALL)) AND (1969-2012 WN YR) OR ((({primary care} OR {general practice} OR {family medicine} OR {family physician}) WN ALL) AND ((\$m-health OR \$mhealth OR \$e-health OR \$ehealth OR \$smart \$home OR \$smart \$homes OR \$smart \$house OR \$smart \$houses OR gerontech*) WN ALL)) AND (1969-2012 WN YR))

The resulting yield was 262 citations.

Note that numbers reported for Medline, IEEE Xplore, and Compendex reflect yields before removal of duplicate publications.

INCLUSION/EXCLUSION CRITERIA

1. Is the full text of the article in English?
Yes Proceed to #2
No Code X1. STOP
2. Is the article a primary study that presents findings based on original data collection or a systematic review of primary studies?
Yes Proceed to #3
No Code X2. Go to #6
3. Does the article involve remote health monitoring technologies as described below?
Yes Proceed to #4
No Code X3. Go to #5
4. Does the article report on the utility, acceptability, or feasibility of remote health monitoring technologies?
Yes Proceed to #5
No Code X4. Go to #6
5. Does the study population include primary care clinicians or administrators/staff members?
Yes, primary care clinicians Code I/P. STOP
Yes, administrators/staff members Code I/A. STOP
No Code X5. Go to #6
6. Is the article possibly useful for background/discussion? Add code B. STOP

Population. Primary care clinicians (physicians [e.g., MD/DO], nurse practitioners, physician assistants), administrators, and clinic staff that provide medical care in an outpatient setting.

Intervention. Remote health monitoring—any technology that enables the monitoring, evaluation, and management of an individual through a remote interface (such as vital signs, heart rate, blood glucose levels, medication management, mental health, or physical and cognitive fitness) and then transmits the information to a healthcare provider for clinical review, care management, and patient education.

Exclusions. Monitoring of vital signs (e.g., blood pressure, weight) and bringing these data on paper to the primary care clinic are excluded. Information must be transferred electronically to the health professional via download from a device, telephonically, via the Web, or on a smartphone.

Control. Usual care.

Outcomes:

1. *Perceived utility:* Usefulness of the technology in general.
2. *Perceived acceptability:* If the technology would work in a primary care setting.
3. *Perceived feasibility:* What it would take to implement technology into routine care.

Timing. No restrictions.

Setting:

- Inclusion: outpatient settings (e.g., home, assisted living, adult foster care, nursing home, “independent living,” rehab centers)
- Exclusion: hospital, skilled nursing facilities