

APPENDIX A. SEARCH STRATEGY

Search conducted in MEDLINE® via PubMed® on 12/9/2011

Concept	Search#	Search String	Citations
Non-Professional caregivers	#60	((“Family”[Mesh]) OR “Caregivers”[Mesh]) OR “Home Nursing”[Mesh]	220979
	#77	((caregiv*[Title/Abstract]) OR “care giving”[Title/Abstract]) OR “care giver”[Title/Abstract]) OR caregivers[Title/Abstract]	28393
	#78	(#77) OR #60	235910
Mobile apps	#80	((“Computers, Handheld”[Mesh]) OR “Cellular Phone”[Mesh]) OR “wireless technology”[Mesh]	4152
	#81	iPad OR handheld OR interactive OR mobile computing OR smart phone* OR mobile phone* OR mobile technolog* OR m-health OR internet based OR personal digital assistant* OR online OR sms OR iphone OR android OR text messag* OR tablet computer OR informatics application OR app	100411
	#82	(#81) OR #80	101517
Union of concepts	#83	(#82) AND #78	2147

Search for specialized databases and grey literature conducted 12/9/2011 and 4/30/2012

Specialized Databases and Grey literature sources searched		
Database	Search	Hits
AMIA Proceedings http://proceedings.amia.org Searched 12/9/2011	“caregiv*”	268
IEEE Xplore http://ieeexplore.ieee.org Searched 12/9/2011	“caregiv*”	266
Healthcare Information & management Systems (HiMSS) conferences and website http://www.himss.org/ASP/index.asp Searched 4/30/2012	“caregiver” OR “caregiving”	2
Med 2.0 (abstracts from 2008 – 2012) http://www.medicine20congress.com/ocs/index.php/med/med2012 Searched 4/30/2012	“caregiver” OR “caregiving”	2
Health 2.0 (abstracts from 2007 – 2011) http://www.health2con.com/conferences/ Searched 4/30/2012	“caregiver” OR “caregiving”	No results

APPENDIX B. 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 evaluate the effectiveness of a targeted consumer health information technology (CHIT) intervention listed below in the PICOTS?	
	Yes.....	Proceed to #4
	No.....	Code X3 . Go to #5
4.	Does the study population include non-professional, human/non-robot caregivers of patients with chronic illness or disability, or are caregiver-centered outcomes reported as a primary outcome?	
	Yes, adult patients	Code I3/A . STOP
	Yes, child patients	Code I3/C . STOP
	No.....	Code X4 . Go to #6
5.	Is the article a primary study or systematic review evaluating the effects of telephony, interactive voice response, or telehealth interventions?	
	Yes.....	Code I5 . STOP
	No.....	Code X5 . Go to #6
6.	Is the article possibly useful for background/discussion?	Code B . STOP

PICOTS:

Population: Non-professional, non-robot caregivers of adult patients with chronic illnesses, and/or parents of children with healthcare needs.

Intervention: Self-directed mobile applications for use on smart phones, personal digital assistants (PDAs) and tablet computers, including: interactive or individually tailored web-based interventions, decision aids, and risk assessment software; chat and online support groups; secure messaging; or other portable or home-based interactive information tools whose purpose is to facilitate communication, coordination, or tailored education in order to support the emotional, spiritual, organizational, management, and healthcare needs of non-professional caregivers of patients with chronic illnesses or health risk factors. Non-interactive educational media (e.g., E-pamphlet) that provide information only are excluded.

We excluded studies focused on telephony, interactive-voice-response, synchronous telehealth interventions, and fixed home-monitoring technologies such as smart-homes, vitals-monitoring, GPS and other location-monitoring, and monitoring for patient falls.

Control: Usual care (use of paper forms and educational materials, in-person visits).

Outcomes:

- 1) *Caregiver-centered outcomes*: caregiver satisfaction, caregiver burnout, caregiver access, caregiver quality of life scores, caregiver depression/anxiety scores.
- 2) *Patient-centered outcomes*: patient satisfaction, patient activation, functional status, quality of life; quality of patient-caregiver relationship.
- 3) *Process measures*: clinician satisfaction; caregiver perceptions of mobile technologies; usage, usability, and barriers to usage of technologies/tools/applications; communication with healthcare providers.
- 4) *Utilization outcomes*: hospitalizations, ER visits, outpatient/PCP visits.

Timing: No restrictions.

Setting: Outpatient (home, assisted living, adult foster care), excluding skilled nursing facilities.