

Table S1: Health domain categorization

Health Domain Category		
Sub-category	Source (Reference)	Elements
1. DESIGN		
Review methodology	PRISMA 2009 (Moher et al., 2009)	A standard methodological tool for the design and assessment of RCTs in systematic reviews
Experimental Type (Primary purpose of RCT)	(National Institute of Health, 2016, 2014)	[Pr]:Prevention
		[Scr]: Screening
		[Tr]:Treatment
		[Sup]:Supportive care
		[Hsr]:Health services research
		[D]:Diagnostic
		[Bs]:Basic Science
		[Oth]:Other
RCT type	(National Institute of Health, 2014)	Open
		Single blind
		Double blind
		Unclear
2. ANNOTATION		
Classification of diseases	In accordance with the medical terminology ICD-10 (WHO, 2010)	[A00-B99]:Certain infectious and parasitic diseases
		[C00-D49]:Neoplasms
		[E00-E89]:Endocrine, nutritional and metabolic diseases
		[F01-F99]:Mental, Behavioral and Neurodevelopmental disorders
		[I00-I99]:Diseases of the circulatory system
		[J00-J99]:Diseases of the respiratory system, and
		[Z00-Z99]:Factors influencing health status and contact with health services
		Other subjects with the following sub-categories i.e., Older adults, Reproductive Health and Childbirth, Screening for Partner Violence etc.
3. EVALUATION		
CONSORT statement and checklists	Trial evaluation based on (Begg et.al, 1996)	The CONSORT Statement comprises a 25-item checklist and a flow diagram. The checklist items focus on reporting how the trial was designed, analyzed, and interpreted; the flow diagram displays the progress of all participants through the trial.
Assessment of the quality of clinical trial by type	Bias evaluation (Higgins and Green, 2011).	Random sequence generation (selection bias)
		Allocation concealment (selection bias)
		Blinding of participants and personnel (performance bias)
		Blinding of outcome assessment (detection bias)
		Incomplete outcome data (attrition bias)
		Selective reporting (reporting bias)
		Other bias
Assessment of the quality of clinical trial by rating	Cochrane Risk of Bias Assessment Tool (Higgins and Green, 2011).	High Level
		Low Level
		Uncertain

Table S2: Health Information Technology categorization

Health Information Technology Category		
Sub-category	Source (Reference)	Elements (found in this study)
1. DEVELOPMENT		
Category of applied Information science	Reviewers' assessment of the applied HITs using the <i>MeSH</i> classification system (U.S. National Library of Medicine, 1999).	[L01.178.847.652]:Telemedicine (or Telehealth or eHealth))
		[L01.178.847.698]:Telephone including Cell phones (smart phones and text messaging)
		[L01.313.500.750]:Medical Informatics Applications including: Decision Making, Computer-Assisted, Information systems, Community Networks, Computerized Medical Records Systems
		[L01.224.230.110]:Computer Communication Networks including Internet
		[L01.224.900.910]:User-Computer Interface (or Virtual Systems)
2. FUNCTIONALITY		
Functional capabilities of HITs	Reviewers' assessment based on (Clancy and Clancy, 1999), (Chaudhry et al., 2006), (Centers for Medicare & Medicaid Services (CMS), 2010) and (Jones et al., 2014)	[CBA]: Computer based alerts and reminders systems
		[CPOE]:Computerized Provider Order entry
		[DSS]:Decision Support Systems
		[EHR]:Electronic Health Record based systems
		[OTHER]:Other or unable to classify technologies/systems
3. EVALUATION		
Standard evaluation report	CONSORT-EHEALTH Checklists (Eysenbach and CONSORT-EHEALTH Group, 2011)	A checklist for the design and assessment of <i>HITs</i> . https://www.jmir.org/ojs/public/journals/1/CONSORT-EHEALTH-v1-6.pdf
Dimension of impacts by type	Reviewers' assessment about the type of outcomes based on (Buntin et al., 2011),	Preventive care
		Adherence/ Attendance
		Efficiency
		Perceived ease of use/Usefulness
		Effectiveness
		Process of service delivery
		Safety/Privacy/Security
		Acceptability
		Cost effectiveness
		Appropriateness
Dimension of impacts by rating	Reviewers' assessment about the type of outcomes based on (Buntin et al., 2011)	Positive or mixed-positive
		Neutral or Not clear or Negative

Table S3: Studies/trials in respect to *RCT* type, Experimental type, functional capabilities of *HITs* and Categories of applied Information science

✓ This article holds the characteristic of the specific column

» This article refers to the same trial as the one mentioned in the article above

Studies	Duration (Year(s))	Registration (Year)	RCT type					Population	Experimental Type					Functional capabilities of HITs					Category of applied Information science				
			Open Label	Single blind	Double blind	Not blinded	Unclear		Prevention	Screening	Treatment	Supportive care	Health services research	CBA	CPOE	DSS	EHR	Other	L01.224.230.110	L01.178.847.652	L01.178.847.698	L01.224.900.910	L01.313.500.750
A00-B99: Certain infectious and parasitic diseases Infections (5 studies /5 trials)																							
(Stein et al., 2011)	1	2010			✓			400					✓					✓					✓
(Pop-Eleches et al., 2011)	1	2010	✓					720				✓		✓							✓		
(Bigna et al., 2014)	1	2013			✓			224			✓			✓							✓		
(Mbuagbaw et al., 2013)	3	2010			✓			198			✓			✓							✓		
(Ybarra et al., 2015)	6	2009	✓					374	✓									✓	✓				
Avg of duration/Total	2.4	-	2	0	3	0	0	1916	1	0	2	1	1	3	0	0	0	2	1	0	3	0	1
C00-D49: Neoplasms (4 studies /4 trials)																							
(Miller Jr et al., 2011)	4	2007		✓				350					✓	✓					✓				
(Meropol et al., 2013)	8	2005					✓	720			✓					✓			✓				
(Lana et al., 2014)	5	2009					✓	3000	✓					✓					✓				
(Kearney et al., 2009)	4	2005					✓	150		✓				✓							✓		
Avg of duration/Total	5.25	-	0	1	0	0	3	4220	1	1	1	0	1	3	0	1	0	0	3	0	1	0	0

E00-E89: Endocrine, nutritional and metabolic diseases (7 studies /7 trials)																							
(van Wyk et al., 2008)	2	2006	✓					88001			✓			✓		✓	✓					✓	
(Arora et al., 2012)	1	2011	✓					200					✓	✓						✓			
(Goodarzi et al., 2012)	1	2011				✓		100			✓			✓						✓			
(Ramirez et al., 2016)	3	2013	✓					1485		✓						✓				✓			
(Buckingham et al., 2015)	2	2013	✓					120	✓							✓						✓	
(Bartholomew et al., 2015)	2	2013	✓					100			✓							✓	✓	✓	✓		
(Kropff et al., 2015)	1	2014	✓					36			✓			✓								✓	
Avg of duration/Total	1.71	-	6	0	0	1	0	90042	1	1	4	0	1	4	0	3	0	1	1	1	4	0	3
F01-F99: Mental, Behavioral and Neurodevelopmental disorders (18 studies /18 trials)																							
(Rindal et al., 2013)	1	2012	✓					548					✓			✓	✓					✓	
(Espeland et al., 2013) (2 trials)	5	2008		✓				100	✓									✓				✓	
	3	2010		✓				1600	✓									✓				✓	
(Garrido et al., 2013)	1	2012		✓				135			✓							✓				✓	
(Tamblyn et al., 2012)	3	2009		✓				4800			✓			✓			✓					✓	
(Kay-Lambkin et al., 2011)	4	2007			✓			100			✓							✓				✓	
(Linder et al., 2009)	3	2006					✓	4314			✓			✓			✓					✓	
(Van Voorhees et al., 2013)	4	2009		✓				110				✓						✓	✓				
(Hedman et al., 2011)	2	2009	✓					80			✓							✓	✓				
(Hedman et al., 2013)	4	>>	>>					>>			>>							>>	>>				
(Proudfoot et al., 2013)	3	2010			✓			2000				✓		✓					✓	✓	✓		
(Whittaker et al., 2011)	5	2006			✓			1300			✓			✓							✓		
(Whittaker et al., 2012)	2	2009			✓			790	✓					✓							✓		
(Gajecki et al., 2014)	0	2013		✓				4408			✓			✓						✓	✓		
(Reid et al., 2011)	3	2008			✓			200	✓									✓			✓		
(Crombie et al., 2013)	3	2010					✓	50			✓			✓							✓		
(Watts et al., 2013)	2	2011	✓					126			✓			✓				✓			✓		
(Tulbure et al., 2015)	3	2012	✓					96			✓							✓	✓				
(McClure et al., 2016)	2	2014			✓			70			✓			✓							✓		
Avg of duration/Total	2.72	-	4	6	6	0	2	20827	4	0	11	2	1	8	1	1	3	9	4	2	8	0	7

I00-I99: Diseases of the circulatory system (6 studies /5 trials)																							
(Pfaeffli et al., 2012)	2	2010			✓			170				✓		✓				✓		✓			
(Antypas and Wangberg, 2014)	4	2010			✓			255				✓		✓				✓		✓			
(Stoddart et al., 2013)	5	2008					✓	400		✓				✓		✓			✓				
(McKinstry et al., 2013)	»	»					»	»		»				»		»			»				
(Fjeldsoe et al., 2012)	1	2011					✓	400				✓		✓				✓		✓	✓		
(Kizony et al., 2013)	1	2012		✓				24			✓							✓		✓			
Avg of duration/Total	2.60	-	0	1	2	0	2	1249	0	1	1	3	0	4	0	1	0	1	3	2	3	1	0
J00-J99: Diseases of the respiratory system (3 studies /2 trials)																							
(Ryan et al., 2012)	5	2007		✓				312				✓						✓		✓			
(Malhotra et al., 2012)	»	»		»				»				»						»		»			
(Meltzer, Kelley and Hovell, 2008)	2	2006	✓					12			✓			✓				✓			✓		
Avg of duration/Total	3.50	-	1	1	0	0	0	324	0	0	1	1	0	1	0	0	0	2	0	1	1	0	0
Z00-Z99: Factors influencing health status and contact with health services (8 studies /7 trials)																							
(Suhling et al., 2014)	3	2011	✓					62				✓						✓					✓
(Turner-McGrievy and Tate, 2011)	1	2010	✓					104			✓			✓					✓		✓	✓	
(Turner-McGrievy and Tate, 2013)	3	»	»					»			»			»					»		»	»	
(Short et al., 2014)	3	2011			✓			504					✓	✓					✓		✓		
(Batch et al., 2014)	4	2010			✓			300			✓			✓							✓		
(Norman et al., 2013)	6	2007	✓					60			✓										✓		
(Albrecht et al., 2013)	0	2013		✓				10					✓					✓			✓		
(King et al., 2013)	3	2010		✓				40	✓					✓								✓	
Avg of duration/Total	2.86	-	3	1	2	0	0	1040	0	0	3	1	2	3	0	0	0	2	2	0	5	1	1

Other subjects (Older adults, Reproductive Health and Childbirth, Screening for Partner Violence) (4 studies /3 trials)																							
(Ahmad et al., 2009)	4	2005	√					280		√							√					√	
(Terrell et al., 2009)	3	2006			√			954			√			√								√	
(Lund et al., 2014a)	1	2013	√					2550					√				√			√			
(Lund et al., 2014b)	»	»	»					»					»				»						
Avg of duration/Total	2.67	-	2	0	1	0	0	3784	0	1	1	0	1	0	1	0	0	2	0	0	1	0	2
Number of trials	-	-	18	11	14	1	7	-	8	4	24	8	7	27	2	6	4	19	14	6	26	3	14
Number of trials with positive outcome summary			12	7	8	1	3		6	4	14	2	5	14	1	6	2	13	9	4	13	1	9
Percentage of total	-	-	35.3%	21.6%	27.5%	2.0%	13.7%		15.7%	7.8%	47.1%	15.7%	13.7%	52.9%	3.9%	11.8%	7.8%	37.3%	27.5%	11.8%	51.0%	5.9%	27.5%
Percentage with positive outcome summary			66.7%	63.6%	57.1 %	100 %	42.9%		75%	100%	58.3%	25%	71.4%	51.9%	50%	100%	50%	68.4%	64.3%	66.7%	50%	33.3%	64.3%
Summary of trials:																					51		

Table S4: Primary outcomes and several dimensions of study/trial impacts by type and rating

- ✓ This article holds the characteristic of the specific column
- » This article refers to the same trial as the one mentioned in the article above
- + The use of *HITs* has *Positive* or *Mixed* (at least one positive and one neutral or negative) influence on the results (impacts)
- The use of *HITs* has *Neutral* or *Negative* influence on the results (impacts)

Studies	Measures of the primary outcomes	Impact by type											Outcome summary (Total estimation for the trial)
		Preventive care	Adherence/Attendance	Efficiency	Perceived ease of use/Usefulness	Effectiveness	Process of service delivery/ Performance	Safety/Privacy/Security	Acceptability	Cost effectiveness	Appropriateness	Satisfaction	
A00-B99: Certain infectious and parasitic diseases Infections (5 studies /5 trials)													
(Stein et al., 2011)	The proportion of subjects with treatment failure or relapse					✓	✓	✓	✓		✓		--
(Pop-Eleches et al., 2011)	MEMS Adherence		✓										--
(Bigna et al., 2014)	Efficacy; Efficiency			✓		✓				✓			--
(Mbuagbaw et al., 2013)	Adherence		✓	✓		✓				✓		✓	--
(Ybarra et al., 2015)	The frequency of unprotected sex	✓											+
Total of this category		1	2	2	0	3	1	1	1	2	1	1	1 +

C00-D49: Neoplasms (4 studies /4 trials)													
(Miller Jr et al., 2011)	Receipt of colorectal cancer screening		✓			✓							+
(Meropol et al., 2013)	Assess content of consultation by applying a coding scheme to transcripts and design yes/no questions; Satisfaction with patient-physician communication by Medical Interview Satisfaction Survey and Face Valid Survey; Assess decisional conflict by Decisional Conflict Scale; Expectations regarding potential benefits and adverse reactions associated with treatment options by Treatment Options Expectations Scale					✓						✓	+
(Lana et al., 2014)	Global cancer behavioral risk indicator	✓				✓							--
(Kearney et al., 2009)	Changes in chemotherapy toxicity as a result of use of the mobile phone system and supporting information technology (IT) infrastructure					✓							+
Total of this category		1	1	0	0	3	0	0	0	0	0	1	3 +
E00-E89: Endocrine, nutritional and metabolic diseases (7 studies /7 trials)													
(van Wyk et al., 2008)	The percentage of correctly screened patients using anonymous patient record data; The percentage of correctly treated patients using anonymous patient record data.					✓	✓						+
(Arora et al., 2012)	Hemoglobin A1C at 6 months					✓	✓						+
(Goodarzi et al., 2012)	HgA1C;Attitude;Blood lipids; Fasting Blood Sugar; Knowledge; Practice; Self-efficacy					✓							+
(Ramirez et al., 2016)	Change from baseline in depression outcome at 6-months				✓	✓		✓	✓				+
(Buckingham et al., 2015)	Comparison of intervention nights and control nights in which hypoglycemia occurred	✓				✓							+
(Bartholomew et al., 2015)	Compliance with home blood glucose reporting				✓	✓						✓	+
(Kropff et al., 2015)	Percent time spent in target range (3.9-10.0 mmol/L or 70-180 mg/dL) during each study period					✓		✓	✓				+
Total of this category		1	0	0	2	7	2	2	2	0	0	1	7 +

F01-F99: Mental, Behavioral and Neurodevelopmental disorders (18 studies /18 trials)

(Rindal et al., 2013)	Patient report of dental providers delivery of: Screening for tobacco Discussion of specific strategies to assist the patient with quitting smoking Referral to a Quit line (toll free number for comprehensive tobacco cessation support)					✓	✓						+
(Espeland et al., 2013) (2 trials)	Composite of six executive functioning and four episodic memory measures that have been previously validated. Major mobility disability, defined as incapacity to walk 400 m.	✓				✓			✓				--
													+
(Garrido et al., 2013)	Change in neurocognitive outcomes					✓							+
(Tamblyn et al., 2012)	Rate of potentially inappropriate psychotropic medication					✓							--
(Kay-Lambkin et al., 2011)	Reduction in depression scores as measured by the Beck Depression Inventory II		✓			✓			✓				+
(Linder et al., 2009)	The proportion of documented smokers who made contact with a smoking cessation counselor.					✓							--
(Van Voorhees et al., 2013)	Percentage visiting the Internet site		✓										+
(Hedman et al., 2011)	Health Anxiety Inventory					✓							+
(Hedman et al., 2013)	>>					>>			✓				>>
(Proudfoot et al., 2013)	Mean Depression Anxiety Stress Scales (DASS) score					✓							+
(Whittaker et al., 2011)	Continuous abstinence				✓	✓	✓						--
(Whittaker et al., 2012)	Change in depressive symptoms as measured by the Child Depression Rating Scale-Revised (CDRS-R)	✓				✓			✓				+
(Gajecki et al., 2014)	Alcohol Use Disorders Identification Test (AUDIT);Change in estimated Blood Alcohol Concentration (eBAC)					✓							--
(Reid et al., 2011)	Depressive symptoms	✓				✓							+
(Crombie et al.,	The change in frequency of heavy drinking					✓							--

2013)													
(Watts et al., 2013)	Patient Health Questionnaire-9 (PHQ-9) which is a 9 item depression scale.					✓							+
(Tulbure et al., 2015)	Leibowitz Social Anxiety Scale - Self Report (LSAS-SR); Social Phobia Inventory (SPIN)		✓			✓						✓	+
(McClure et al., 2016)	Point prevalence abstinence		✓			✓			✓				+
Total of this category		3	4	0	1	16	2	0	4	1	0	1	12 +
<i>J00-J99: Diseases of the circulatory system (6 studies /5 trials)</i>													
(Pfaeffli et al., 2012)	Change in maximal oxygen uptake (VO2max) from baseline to 24 weeks.					✓	✓		✓				--
(Antypas and Wangberg, 2014)	Duration and Intensity of Physical Activity				✓	✓							--
(Stoddart et al., 2013)	Average daytime systolic blood pressure at 6 months measured by ambulatory monitoring.					✓				✓			+
(McKinstry et al., 2013)	»					»							»
(Fjeldsoe et al., 2012)	Moderate to vigorous physical activity					✓							--
(Kizony et al., 2013)	Chedoke Arm and Hand Activity Inventory (CAHAI-7)					✓							+
Total of this category		0	0	0	1	5	1	0	1	1	0	0	2 +
<i>J00-J99: Diseases of the respiratory system (3 studies /2 trials)</i>													
(Ryan et al., 2012)	Change in asthma control between baseline and six months as measured by ACQ					✓				✓			--
(Malhotra et al., 2012)	»					»							»
(Meltzer, Kelley and Hovell, 2008)	To determine subject preference of a traditional paper symptom diary vs. the VOCEL® Mobile Diary		✓		✓	✓		✓					--
Total of this category		0	1	0	1	1	0	1	0	0	0	0	0

Z00-Z99: Factors influencing health status and contact with health services (8 studies /7 trials)													
(Suhling et al., 2014)	Improvement of percentage of calcineurin inhibitor trough levels (Delta %) in target range 6 months after patient education compared to 6 months before patient education		✓			✓				✓		✓	--
(Turner-McGrievy and Tate, 2011)	Weight loss					✓							--
(Turner-McGrievy and Tate, 2013)	>>					>>							>>
(Short et al., 2014)	Physical Activity Questionnaire; Nutrition/Food Questionnaire; Physical Activity Literacy; Questionnaire; Nutrition Literacy Questionnaire				✓	✓							+
(Batch et al., 2014)	Change in body weight					✓							+
(Norman et al., 2013)	The Primary Outcome Will be the Effect of the mDIET System in Comparison to a Control Group on BMI Among Overweight Men and Women.					✓							--
(Albrecht et al., 2013)	Learning efficiency before and after the learning phase measured with a 10-item SC-test			✓							✓		+
(King et al., 2013)	Community Healthy Activities Model Program for Seniors (CHAMPS) Questionnaire; steps per day measured by accelerometer	✓			✓	✓		✓			✓		+
Total of this category		1	1	1	2	6	0	1	0	1	2	1	4 +

Other subjects (Older adults, Reproductive Health and Childbirth, Screening for Partner Violence) (4 studies /3 trials)													
(Ahmad et al., 2009)	Discussion-opportunity about risk of partner abuse during physician-patient medical encounter (audiotaped data); Detection of partner abuse during physician-patient medical encounter (audio taped data)					√		√					+
(Terrell et al., 2009)	Proportion of ED patients aged 65 and older who receive a potentially inappropriate medication						√						+
(Lund et al., 2014a)	Skilled delivery attendance		√			√							--
(Lund et al., 2014b)	»		»			»							»
Total of this category		0	1	0	0	2	1	1	0	0	0	0	2 +
													Total estimation
Number of trials that examined this impact		7	10	3	7	45	7	6	8	6	3	5	31 +
Number wherein the examined impact contribute to positive outcome summary		6	5	1	4	26	4	4	6	1	2	3	
Rate wherein the examined impact contribute to positive outcome summary		85.7%	50.0%	33.3%	57.1%	57.8%	57.1%	66.7%	75.0%	16.7%	66.7%	60.0%	60.8%+