Legend:
Conceptual model of engaging patient and
families in patient safety in the inpatient setting.

**Promoting Engagement by Patients and Families to Reduce Adverse Events
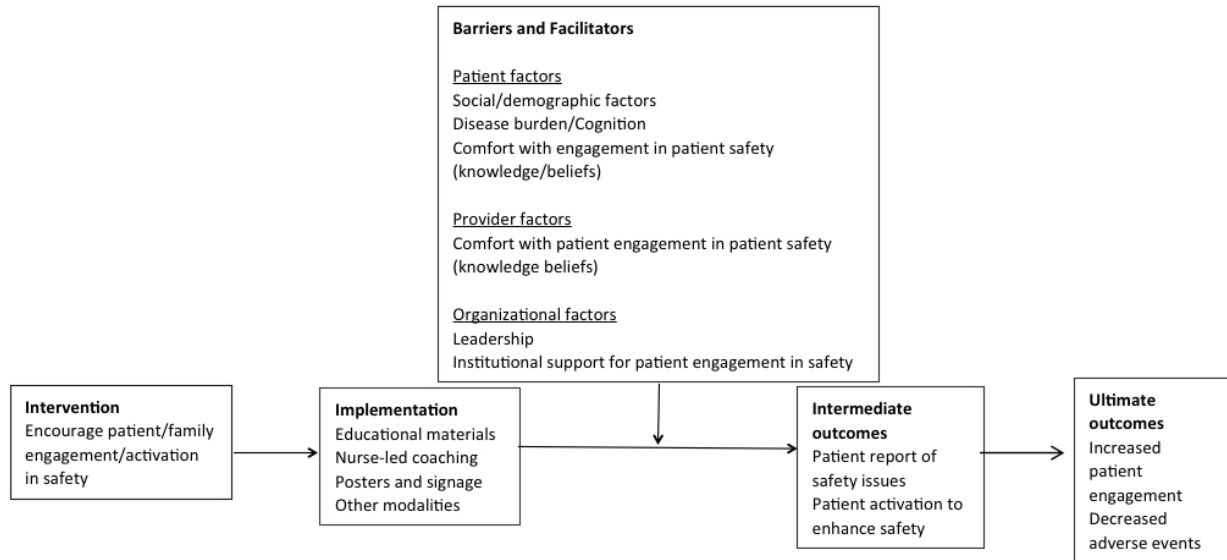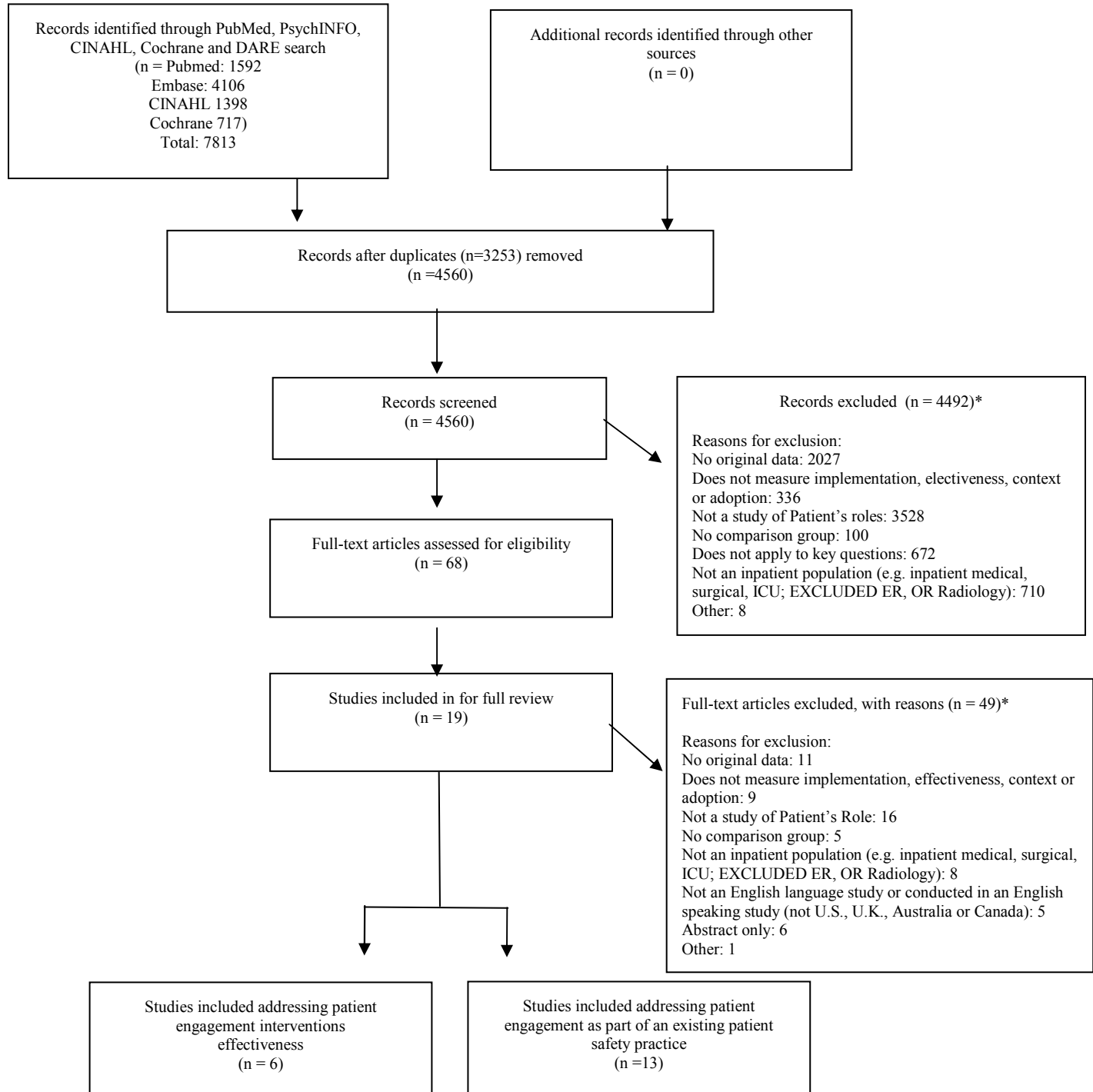Web Appendix**

Figure 1. Conceptual Model

Barriers and Facilitators

Patient factors
Social/demographic factors
Disease burden/Cognition
Comfort with engagement in patient safety
(knowledge/beliefs)

Provider factors
Comfort with patient engagement in patient safety
(knowledge beliefs)

Organizational factors
Leadership
Institutional support for patient engagement in safety

Intervention
Encourage patient/family
engagement/activation
in safety

Implementation
Educational materials
Nurse-led coaching
Posters and signage
Other modalities

**Intermediate
outcomes**
Patient report of
safety issues
Patient activation to
enhance safety

**Ultimate
outcomes**
Increased
patient
engagement
Decreased
adverse events

Figure 2. Flow chart for study inclusion.

Records identified through PubMed, PsychINFO, CINAHL, Cochrane and DARE search
(n = Pubmed: 1592
Embase: 4106
CINAHL 1398
Cochrane 717)
Total: 7813

Additional records identified through other sources
(n = 0)

Records after duplicates (n=3253) removed
(n =4560)

Records screened
(n = 4560)

Records excluded (n = 4492)*

Reasons for exclusion:
No original data: 2027
Does not measure implementation, electiveness, context or adoption: 336
Not a study of Patient's roles: 3528
No comparison group: 100
Does not apply to key questions: 672
Not an inpatient population (e.g. inpatient medical, surgical, ICU; EXCLUDED ER, OR Radiology): 710
Other: 8

Full-text articles assessed for eligibility
(n = 68)

Studies included in for full review
(n = 19)

Full-text articles excluded, with reasons (n = 49)*

Reasons for exclusion:
No original data: 11
Does not measure implementation, effectiveness, context or adoption: 9
Not a study of Patient's Role: 16
No comparison group: 5
Not an inpatient population (e.g. inpatient medical, surgical, ICU; EXCLUDED ER, OR Radiology): 8
Not an English language study or conducted in an English speaking study (not U.S., U.K., Australia or Canada): 5
Abstract only: 6
Other: 1

Studies included addressing patient engagement interventions effectiveness
(n = 6)

Studies included addressing patient engagement as part of an existing patient safety practice
(n =13)

*The total number of reasons for exclusion is higher than the total number excluded since the both reviewers did not have to cite the same reason for excluding the record or article.

Search Strategy

PUBMED:
DATABASE SEARCHED & TIME PERIOD COVERED:
PubMed – 2000-11/3/2011
SEARCH STRATEGY:
"adverse events" OR "Iatrogenic Disease/prevention and control" OR "Medical Errors/prevention and control" OR "medication errors/prevention and control" OR "Medical Errors/adverse effects" OR "Safety Management" OR "Cross Infection/prevention and control" OR "infection control"
AND
"Physician-Patient Relations" OR "Nurse-Patient Relations" OR "Patient Participation" OR "Patient Education as Topic" OR "Patient-Centered Care" OR "patient reporting" OR "patient-empowering" OR "patient empowerment" OR "patient partnership" OR "patient activation" or "patient self-effectiveness" or "patient involvement"
NUMBER OF RESULTS: 1499
===
DATABASE SEARCHED & TIME PERIOD COVERED:
PubMed – 10/1/2011-11/3/2012
SEARCH STRATEGY:
"Physician-Patient Relations" OR "Nurse-Patient Relations" OR "Patient Participation" OR "Patient Education as Topic" OR "Patient-Centered Care" OR "patient reporting" OR "patient-empowering" OR "patient empowerment" OR "patient partnership" OR "patient activation" or "patient self-effectiveness" or "patient involvement"
AND
adverse events" OR "Iatrogenic Disease/prevention and control" OR "Medical Errors/prevention and control" OR "medication errors/prevention and control" OR "Medical Errors/adverse effects" OR "Safety Management" OR "Cross Infection/prevention and control" OR "infection control"
NUMBER OF RESULTS: 93
===
DATABASE SEARCHED & TIME PERIOD COVERED:
PubMed – 10/1/2011-11/3/2012

"RELATED ARTICLE" SEARCHES ON THE FOLLOWING ARTICLES:
J Patient Saf. 2012 Dec;8(4):182-8.
Patient Involvement in Patient Safety: The Health-Care Professional's Perspective.
Davis RE, Sevdalis N, Vincent CA.

Soc Sci Med. 2012 Jul;75(2):257-63. Epub 2012 Apr 13.
Patients' willingness and ability to participate actively in the reduction of clinical errors: a systematic literature review.
Doherty C, Stavropoulou C.
NUMBER OF COMBINED RESULTS AFTER REMOVING DUPLICATES: 43
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CINAHL

DATABASE SEARCHED & TIME PERIOD COVERED:
CINAHL – 2000-10/24/2011
SEARCH STRATEGY:
(TI (Physician n3 Patient n3 relation*) OR (Nurse n3 Patient n3 relation*) OR Patient n3 Participat* OR Patient n3 Education OR "Patient-Centered Care" OR "patient reporting" OR patient n2 empower* OR patient n3 partner* OR "patient activation" OR "patient self-effectiveness" OR patient n3 involv*
OR AB (Physician n3 Patient n3 relation*) OR (Nurse n3 Patient n3 relation*) OR Patient n3 Participat* OR Patient n3 Education OR "Patient-Centered Care" OR "patient reporting" OR patient n2 empower* OR patient n3 partner* OR "patient activation" OR "patient self-effectiveness" OR patient n3 involv*
OR MW (Physician n3 Patient n3 relation*) OR (Nurse n3 Patient n3 relation*) OR Patient n3 Participat* OR Patient n3 Education OR "Patient-Centered Care" OR "patient reporting" OR patient n2 empower* OR patient n3 partner* OR "patient activation" OR "patient self-effectiveness" OR patient n3 involv*)
AND
'adverse events' OR 'iatrogenic disease' OR 'medical errors' OR 'medication errors' OR 'medication error' OR 'medical error' OR ('cross infection' AND prevent*) OR 'safety management' OR 'infection control'
===
NUMBER OF RESULTS: 1283
DATABASE SEARCHED & TIME PERIOD COVERED:
CINAHL – 10/1/2011-10/31/2012
SEARCH STRATEGY:

TI OR MW OR AB((Physician n3 Patient n3 relation*) OR (Nurse n3 Patient n3 relation*) OR Patient n3 Participat* OR Patient n3 Education OR "Patient-Centered Care" OR "patient reporting" OR patient n2 empower* OR patient n3 partner* OR "patient activation" OR "patient self-effectiveness" OR patient n3 involv*)
AND
'adverse events' OR 'iatrogenic disease' OR 'medical errors' OR 'medication errors' OR 'medication error' OR 'medical error' OR ('cross infection' AND prevent*) OR 'safety management' OR 'infection control'
NUMBER OF RESULTS: 115
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EMBASE
DATABASE SEARCHED & TIME PERIOD COVERED:
Embase – 2000-10/27/2011

SEARCH STRATEGY:
'physician-patient relations' OR 'nurse-patient relations' OR 'patient participation' OR 'patient education' OR 'patient-centered care' OR 'patient reporting' OR 'patient-empowering' OR 'patient empowerment' OR 'patient partnership' OR 'patient activation' OR 'patient self-effectiveness' OR 'patient involvement' OR 'doctor patient relation'
AND
'adverse events' OR 'iatrogenic disease' OR 'medical errors' OR 'medication errors' OR 'medication error' OR 'medical error' OR 'cross infection' AND prevent* OR 'safety management' OR 'infection control'

NUMBER OF RESULTS: 2869
===
DATABASE SEARCHED & TIME PERIOD COVERED:
Embase – 10/1/2011-10/31/2012

SEARCH STRATEGY:

'physician-patient relations'/exp OR 'physician-patient relations' OR 'nurse-patient relations'/exp OR 'nurse-patient relations' OR 'patient participation'/exp OR 'patient participation' OR 'patient education'/exp OR 'patient education' OR 'patient reporting' OR 'patient-empowering' OR 'patient empowerment' OR 'patient partnership' OR 'patient activation' OR 'patient self-effectiveness' OR 'patient involvement'/exp OR 'patient involvement' OR 'doctor patient relation'/exp OR 'doctor patient relation'
AND
'adverse events' OR 'iatrogenic disease'/exp OR 'iatrogenic disease' OR 'medical errors'/exp OR 'medical errors' OR 'medication errors'/exp OR 'medication errors' OR 'medication error'/exp OR 'medication error' OR 'medical error'/exp OR 'medical error' OR ('cross infection'/exp OR 'cross infection' AND prevent*) OR 'safety management'/exp OR 'safety management' OR 'infection control'/exp OR 'infection control'
OR
('patient centered' AND care) OR 'patient centered care'
AND
'adverse events' OR 'iatrogenic disease'/exp OR 'iatrogenic disease' OR 'medical errors'/exp OR 'medical errors' OR 'medication errors'/exp OR 'medication errors' OR 'medication error'/exp OR 'medication error' OR 'medical error'/exp OR 'medical error' OR ('cross infection'/exp OR 'cross infection' AND prevent*) OR 'safety management'/exp OR 'safety management' OR 'infection control'/exp OR 'infection control'

NUMBER OF RESULTS: 1,237

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DATABASE SEARCHED & TIME PERIOD COVERED:
Cochrane Databases– 2000-11/9/2011

SEARCH STRATEGY:
"'physician-patient relations' OR 'nurse-patient relations' OR 'patient participation' OR 'patient education' OR 'patient-centered care' OR 'patient reporting' OR 'patient-empowering' OR 'patient empowerment' OR 'patient partnership' OR 'patient activation' OR 'patient self-effectiveness' OR 'patient involvement' OR 'doctor patient relation' OR "physician-patient relation" in Title, Abstract or Keywords
AND
adverse OR iatrogenic OR error* OR harm* OR safe* OR (infection* AND prevent*) OR (infection* AND control*) in Title, Abstract or Keywords

NUMBER OF RESULTS: 7 (Cochrane Reviews [1]   Other Reviews [0] | Clinical Trials [5] | Methods Studies [1] | Technology Assessments [0] | Economic Evaluations [0]   Cochrane Groups [0])

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DATABASE SEARCHED & TIME PERIOD COVERED:
Cochrane Databases– 2000-11/9/2011

SEARCH STRATEGY:
MeSH descriptor Physician-Patient Relations, this term only OR MeSH descriptor Patient Education as Topic, this term only OR MeSH descriptor Patient Participation explode all trees
AND

MeSH descriptor Safety Management, this term only OR drug toxicity OR MeSH descriptor Medical Errors explode all trees OR MeSH descriptor Infection explode all trees with qualifier: PC (Prevention & Control)

NUMBER OF RESULTS: 81 (Cochrane Reviews [5] | Other Reviews [4] | Clinical Trials [71] | Methods Studies [0] | Technology Assessments [0] | Economic Evaluations [1] | Cochrane Groups [0])
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DATABASE SEARCHED & TIME PERIOD COVERED:
Cochrane Databases – 10/1/2011-10/31/2012

SEARCH STRATEGY:
'physician-patient relations' or 'nurse-patient relations' or 'patient participation' or 'patient education' or 'patient-centered care' or 'patient reporting' or 'patient-empowering' or 'patient empowerment' or 'patient partnership' or 'patient activation' or 'patient self-effectiveness' or 'patient involvement' or 'doctor patient relation' or 'physician-patient relation':ti,ab,kw
AND
adverse or iatrogenic or error* or harm* or safe* or (infection* and prevent*) or (infection* and control*):ti,ab,kw

NUMBER OF RESULTS: 1,636
  Cochrane Reviews (636)
  Other Reviews (2)
  Trials (968)
  Methods Studies (25)
  Technology Assessments (2)
  Economic Evaluations (3)

Patient and Family Engagement: Methods

PICOTS

Elements	
Population	Patients in inpatient healthcare settings (adult and pediatric) and their family members
Intervention	Any intervention to encourage patient and/or family involvement in safety, including reporting adverse outcomes or errors
Comparator	Usual practice
Outcomes	Effectiveness of the intervention
Timing	Before and after the intervention
Settings	Hospitals

Inclusion/exclusion criteria:
- Only English-language studies from the US, UK, Canada, and Australia were included in the present review, due to potentially significantly different cultural issues in patient engagement in their health care outside of these countries, as well as potential differences in tools for promoting engagement.
-Included studies were required to focus on hospital care settings (e.g., intensive care units) – patient engagement in safety in the home setting would be difficult to differentiate from patient self-management of their medications and care, when providers are not present.
-Only systematic reviews focusing on effectiveness and prospective, controlled studies were included.