

Appendix 1: Search strategy

For each database, search terms were used for each of four key domains: low back pain; imaging; intervention; study design.

Terms within each domain were combined with 'or'.

The four key domains were combined with 'and'

MEDLINE Database

Search terms for low back pain:

exp Back Pain/

backache.ti,ab.

exp Low Back Pain/

(lumbar adj pain).ti,ab.

lumbago.ti,ab.

back disorder*.ti,ab.

exp Spine/

low back pain.mp.

lumbar.mp.

back pain.mp.

lumbosacral.mp.

spine.mp.

Spinal.mp.

Search terms for imaging:

diagnostic imaging/ or image interpretation, computer-assisted/ or magnetic resonance imaging/ or radiography/

CT.mp.

x-ray.mp. [mp=title, abstract, original title, name of substance word, subject heading word, keyword heading word, protocol supplementary concept, rare disease supplementary concept, unique identifier]

MRI.mp.

radiograph*.mp.

imaging.mp.

radiology.mp.

imaging utilization.mp.

diagnostic imaging.mp.

diagnostic x-ray.mp.

Magnetic resonance imaging.mp.

Computed tomography.mp.

Search terms for intervention:

exp *education,continuing/

(education* adj2 (program* or intervention* or meeting* or session* or strateg* or workshop* or visit*)).mp.

(behavior?r adj2 intervention*).mp.

pamphlets/

(leaflet* or booklet* or poster* or pamphlet*).mp.

((written or printed or oral) adj information).mp.

(information* adj2 campaign).mp.

(education* adj1 (method* or material*)).mp.

advance directives/
 outreach.mp.
 ((opinion or education* or influential) adj2 leader*).mp
 facilitator*.mp.
 academic detailing.mp.
 consensus conference*.mp.
 guideline adherence/
 practice guideline*.mp.
 (guideline? adj2 (introduce* or issu* or impact or effect* or disseminat* or distribut*)).mp.
 ((effect* or impact or evaluat* or introduce* or compare*) adj2 training program*).mp.
 reminder systems/
 reminder*.mp.
 (recall adj2 system*).mp.
 prompt*.mp.
 algorithm*.mp.
 feedback/ or feedback.mp.
 chart review*.mp.
 ((effect* or impact or records or chart*) adj2 audit).mp.
 compliance.mp.
 marketing.mp.
 ((standard or usual or routine or regular or traditional or conventional or pattern) adj2 care).mp.
 (program* adj2 (reduc* or increase* or decreas* or chang* or improve* or modify* or monitor* or care)).mp.
 (program* adj1 (health or care or intervention*)).mp.
 ((effect* or impact or evaluat* or introduce* or compare*) adj2 treatment program*).mp.
 ((effect* or impact or evaluat* or introduce* or compare*) adj2 care program*).mp.
 ((effect* or impact or evaluat* or introduce* or compare*) adj2 screening program*).mp.
 ((effect* or impact or evaluat* or introduce* or compara*) adj2 prevent* program*).mp.
 (computer* adj2 (dosage or dosing or diagnosis or therapy or decision*)).mp.
 ((introduce* or impact or effect* or implement* or computer*) adj2 protocol*).mp.
 ((effect* or impact or introduce*) adj2 (legislation or regulations or policy)).mp.
 appropriate*.mp.
 computer decision support.mp.
 general practitioner belief*.mp.
 primary prevention.mp.
 population-based.mp.
 media campaign.mp.
 continuing education.mp.
 guideline*.mp.
 computer-based guideline*.mp.
 clinical practice guideline*.mp.
 practice pattern feedback.mp.
 theory-informed.mp.
 guideline adherence.mp.
 utilization review.mp.

patient education.mp.

Implementation.mp.

intervention*.mp.

Search terms for study design:

clinical trial.pt.

comparative study.pt.

controlled clinical trial.pt.

randomized controlled trial.pt. and Clinical trial, all.pt

time series stud*.mp. or time series.mp

interrupted time series.mp.

before and after time series.mp.

matched controlled.mp.

cluster randomi?ed trial*.mp.

quasi-randomi?ed trial*.mp.

clinical trial/

controlled clinical trial/

randomized controlled trial/

Comparative Study/

Randomi?ed.ab.

quasi-experimental.mp.

Embase Database

Search terms for low back pain:

exp Back Pain/

backache.ti,ab.

exp Low Back Pain/

(lumbar adj pain).ti,ab.

lumbago.ti,ab.

back disorder*.ti,ab.

exp Spine/

low back pain.mp.

lumbar.mp.

back pain.mp.

lumbosacral.mp.

spine.mp.

Spinal.mp.

Search terms for imaging:

diagnostic imaging/ or image interpretation, computer-assisted/ or magnetic resonance imaging/ or radiography/

CT.mp.

x-ray.mp.

MRI.mp.

radiograph*.mp.

imaging.mp.

radiology.mp.

imaging utilization.mp.

diagnostic imaging.mp.

diagnostic x-ray.mp.

Magnetic resonance imaging.mp.

Computed tomography.mp.

Search terms for intervention:

exp *education,continuing/

(education* adj2 (program* or intervention* or meeting* or session* or strateg* or workshop* or visit*)).mp.

(behavior adj2 intervention*).mp.

pamphlets/

(leaflet* or booklet* or poster* or pamphlet*).mp.

((written or printed or oral) adj information).mp.

(information* adj2 campaign).mp.

(education* adj1 (method* or material*)).mp.

advance directives/

outreach.mp.

((opinion or education* or influential) adj2 leader*).mp.

facilitator*.mp.

academic detailing.mp.

consensus conference*.mp.

guideline adherence/

practice guideline*.mp.

(guideline? adj2 (introduce* or issue* or impact or effect* or disseminat* or distribut*)).mp.

((effect* or impact or evaluat* or introduce* or compare*) adj2 training program*).mp.

reminder systems/

reminder*.mp.

(recall adj2 system*).mp.

prompt*.mp.

algorithm*.mp.

feedback/ or feedback.mp.

chart review*.mp.

((effect* or impact or records or chart*) adj2 audit).mp.

compliance.mp.

marketing.mp.

((standard or usual or routine or regular or traditional or conventional or pattern) adj2 care).mp.

(program* adj2 (reduc* or increase* or decreas* or chang* or improve* or modify* or monitor* or care)).mp.

(program* adj1 (health or care or intervention*)).mp.

((effect* or impact or evaluat* or introduce* or compare*) adj2 treatment program*).mp.

((effect* or impact or evaluat* or introduce* or compare*) adj2 care program*).mp.

((effect* or impact or evaluat* or introduce* or compare*) adj2 screening program*).mp.

((effect* or impact or evaluat* or introduce* or compara*) adj2 prevent* program*).mp.

(computer* adj2 (dosage or dosing or diagnosis or therapy or decision*)).mp.

((introduce* or impact or effect* or implement* or computer*) adj2 protocol*).mp.

((effect* or impact or introduce*) adj2 (legislation or regulations or policy)).mp.

appropriate*.mp.
 computer decision support.mp.
 general practitioner belief*.mp.
 primary prevention.mp.
 population-based.mp.
 media campaign.mp.
 continuing education.mp.
 guideline*.mp.
 computer-based guideline*.mp.
 clinical practice guideline*.mp.
 practice pattern feedback.mp.
 theory-informed.mp.
 guideline adherence.mp.
 utilization review.mp.
 patient education.mp.
 Implementation.mp.
 intervention*.mp.

Search terms for study design:

clinical trial.pt.
 comparative study.pt.
 controlled clinical trial.pt.
 (randomized controlled trial and Clinical trial, all).pt.
 (time series stud* or time series).mp.
 interrupted time series.mp.
 (before and after time series).mp.
 matched controlled.mp.
 cluster randomized trial*.mp.
 quasi-randomized trial*.mp.
 clinical trial/
 controlled clinical trial/
 randomized controlled trial/
 Comparative Study/
 Randomized.ab.
 quasi-experimental.mp.

CINAHL Database

Search terms for low back pain:

lumbar N2 vertebra
 (MH "Lumbar Vertebrae")
 "Spinal"
 "Spine"
 "Lumbosacral"
 "back pain"
 "Lumbar"

"low back pain"
 (MH "Spine+")
 "back disorder*"
 "lumbago"
 lumbar W1 pain
 lumbar N5 pain
 (MH "Low Back Pain")
 "backache"
 (MH "Back Pain+")

Search terms for imaging:

"Computed tomography"
 "Magnetic resonance imaging"
 "diagnostic x-ray"
 "diagnostic imag*"
 "imaging utilization"
 "Radiology"
 "Imaging"
 "radiograph*"
 "MRI"
 "x-ray"
 "CT"
 (MH "radiography")
 (MH "diagnostic imaging")
 (MH "magnetic resonance imaging")

Search terms for intervention:

"intervention*"
 "Implementation"
 "patient education"
 "utilization review"
 "guideline adherence"
 "theory-informed"
 "practice pattern feedback"
 "practice pattern feedback"
 "clinical practice guideline*"
 "computer-based guideline*"
 "guideline*"
 "continuing education"
 "media campaign"
 "population-based"
 "primary prevention"
 "general practitioner belief*"
 "computer decision support"
 "appropriate*"
 (("effect*" or "impact" or "introduce*") N2 ("legislation" or "regulations" or "policy"))

("introduce*" or "impact" or "effect*" or "implement*" or "computer*") N2 "protocol*")
 ("computer*" N2 ("dosage" or "dosing" or "diagnosis" or "therapy" or "decision*"))
 ("effect*" or "impact" or "evaluat*" or "introduce*" or "compara*") N2 "prevent* program*")
 ("effect*" or "impact" or "evaluat*" or "introduce*" or "compare*") N2 "screening program*")
 ("effect*" or "impact" or "evaluat*" or "introduce*" or "compare*") N2 "care program*")
 ("effect*" or "impact" or "evaluat*" or "introduce*" or "compare*") N2 "treatment program*")
 ("program*"N1 ("health" or "care" or "intervention*"))
 ("program*" N2 ("reduc*" or "increase*" or "decreas*" or "chang*" or "improve*" or "modify*" or
 "monitor*" or "care"))
 ("standard" or "usual" or "routine" or "regular" or "traditional" or "conventional" or "pattern") N2 "care")
 "Marketing"
 "compliance"
 ("effect*" or "impact" or "records" or "chart*") N2 "audit")
 "feedback*"
 "chart review*"
 "algorithm*"
 "prompt*"
 ("recall" N2 "system*")
 "reminder*"
 (MH *reminder systems*)
 ("effect*" or "impact" or "evaluat*" or "introduce*" or "compare*") N2 "training program*")
 ("guideline?"N2 ("introduce*" or "issu*" or "impact" or "effect*" or "disseminat*" or "distribut*"))
 "practice guideline*"
 (MH "guideline adherence")
 "consensus conference*"
 "academic detailing"
 "facilitator*"
 ("opinion" or "education*" or "influential") N2 "leader*")
 "Outreach"
 (MH "advance directives")
 ("education*" N1 ("method*" or "material*"))
 ("information*" N2 "campaign")
 ("written" or "printed" or "oral") N1 "information")
 ("leaflet*" or "booklet*" or "poster*" or "pamphlet*")
 (MH "pamphlets")
 ("behavio?r*" N2 "intervention*")
 ("education*" N2 ("program*" or "intervention*" or "meeting*" or "session*" or "strateg*" or "workshop*"
 or "visit*"))
 (MH "education,continuing")
 (MH "education,continuing")
Search terms for study design:
 follow-up stud*
 (MH "Evaluation Research+")
 (MH "Prospective Studies+ ")
 random*

(MH "Comparative Studies")
 "randomi*ed controlled trial"
 "randomi*ed controlled trial"
 "controlled clinical trial"
 (MH "Clinical Trials+")
 "quasi-randomi?ed trial*"
 "cluster randomi?ed trial*"
 "matched controlled"
 "before and after time series"
 "interrupted time series"
 "time series stud*" or "time series"
 "randomi?ed controlled trial*" and "Clinical trial"
 "controlled clinical trial"
 "comparative study"
 clinical W3 trial

Cochrane CENTRAL Database

Search terms for low back pain:

MeSH descriptor: [Back Pain] explode all trees
 backache
 MeSH descriptor: [Low Back Pain] explode all trees
 lumbar next pain
 Lumbago
 back disorder*
 MeSH descriptor: [Spine] explode all trees
 low back pain
 lumbar
 back near pain
 lumbosacral
 spine
 Spinal
 lumbar near vertebra*

Search terms for imaging:

MeSH descriptor: [Diagnostic Imaging] explode all trees
 MeSH descriptor: [Magnetic Resonance Imaging] explode all trees
 MeSH descriptor: [Radiography] explode all trees
 CT
 x-ray
 MRI
 radiograph*
 imaging
 radiology
 imaging utili?ation
 diagnostic imaging

diagnostic x-ray

Magnetic resonance imaging

Computed tomography

Search terms for intervention:

MeSH descriptor: [Education, Continuing] explode all trees

(education* near (program* or intervention* or meeting* or session* or strateg* or workshop* or visit*))

(behavior?r near intervention*)

MeSH descriptor: [Pamphlets] explode all trees

(leaflet* or booklet* or poster* or pamphlet*)

((written or printed or oral) next information)

(information* near campaign)

(education* next (method* or material*))

MeSH descriptor: [Advance Directives] explode all trees

outreach

((opinion or education* or influential) near leader*)

facilitator*

academic detailing

consensus conference*

MeSH descriptor: [Guideline Adherence] explode all trees

practice guideline*

(guideline? near (introduce* or issu* or impact or effect* or disseminat* or distribut*))

((effect* or impact or evaluat* or introduce* or compare*) near training program*)

MeSH descriptor: [Reminder Systems] explode all trees

reminder*

(recall near system*)

prompt*

algorithm*

MeSH descriptor: [Feedback] explode all trees

feedback

chart review*

((effect* or impact or records or chart*) near audit)

compliance

marketing

((standard or usual or routine or regular or traditional or conventional or pattern) near care)

(program* near (reduc* or increase* or decreas* or chang* or improve* or modify* or monitor* or care))

(program* next (health or care or intervention*))

((effect* or impact or evaluat* or introduce* or compare*) near treatment program*)

((effect* or impact or evaluat* or introduce* or compare*) next care program*)

((effect* or impact or evaluat* or introduce* or compare*) near screening program*)

((effect* or impact or evaluat* or introduce* or compara*) near prevent* program*)

(computer* near (dosage or dosing or diagnosis or therapy or decision*))

((introduce* or impact or effect* or implement* or computer*) near protocol*)

((effect* or impact or introduce*) near (legislation or regulations or policy))

appropriate*

computer decision support
general practitioner belief*
primary prevention
population-based
media campaign
continuing education
guideline*
computer-based guideline*
clinical practice guideline*
practice pattern feedback
theory-informed
guideline adherence
utilization review
patient education
Implementation
intervention*

Search terms for study design:

Search terms for study design not used for Central due to the nature of the database