iPCHS/Arthritis Research UK Primary Care Centre
Systematic Review Protocol & Support Template

This template is primarily intended to help you plan your review in a systematic way. A copy of this completed form will be available via the intranet to help others carrying out reviews in the future and to avoid duplicating work already undertaken in the Centre. Keeping a record of all the reviews will also assist in planning the work of the Centre and ensuring adequate methodological support. Not all the information will be relevant to every review and items should be adapted to fit the type of review that is being undertaken.
The template has been updated to include all the items from the PRISMA-P checklist (http://www.prisma-statement.org/Extensions/Protocols.aspx). All systematic reviews should be registered with PROSPERO database (http://www.crd.york.ac.uk/PROSPERO/) unless the review is methodological.

Title of the review	Back-UP EU2020 Evidence Synthesis: WP 4
First reviewer	**Gemma Mansell**
Other reviewers (with role/contribution in the review)	**Nadia Corp** (information specialist – search strategy development, identification of databases, data extraction and critical appraisal) **Jonathan Hill** (clinical trials specialist – third reviewer of full texts) **Gwenllian Wynne-Jones** (epidemiologist – data extraction and critical appraisal) **Daniëlle van der Windt** (epidemiologist – second reviewer of abstracts/full texts) **Cliona McRobert** (physiotherapist – data extraction)
Clinical Portfolio Group	Clinical epidemiology
Funding source	Horizon 2020 – Framework Programme for Research and Innovation DLV-777090 (European Commission)
PROSPERO registration number	

Amendments to the protocol	

1. Background to review

Brief introduction to the subject of the review, including rationale for undertaking the review and overall aim

Neck and low back pain (NLBP) are leading causes for years lived with disability in Europe and worldwide. Management of NLBP is a difficult challenge for healthcare professionals since their decisions have a decisive impact on the patient's future health and welfare, as well as on the economic burden on the public and private healthcare systems. However, health professionals often lack appropriate information to tailor the management and follow-up of individual patients and to predict the outcome of a certain treatment. This review is part of a wider project that aims to develop a cloud computer platform for patients, clinicians and employers which will generate prognostic information on NLBP based on information it receives from patients. The idea is that patients will be stratified into subgroups to receive appropriate tailored and targeted treatment based on information about which treatment provides them with the greatest potential for improvement.

To help with the development of this platform and the stratified care algorithm to select treatments for individuals, we need to identify the key alternative treatment options that have evidence for effectiveness for improving pain, disability and work outcomes in NLBP populations and are recommended for use within Europe. A systematic review of evidence-based clinical practice European guidelines for NLBP will therefore be conducted.

The systematic review seeks to identify, where such information is available, what recommended treatment options are consistently recommended within European back and neck pain guidelines, and additionally aims to determine if there is evidence in the literature about which patient subgroups should be targeted with these treatments, such as those with unresolved radicular pain requiring medical (specialist) opinion, and those with poor health literacy who need additional education and support rather than self-management advice alone.

2. Specific objectives/questions the review will address

To identify evidence-based effective interventions recommended for the treatment of neck and low back pain across Europe (and which interventions are recommended in guidelines from at least two countries);

To extract recommendations from guidelines regarding potential predictors of treatment effect (candidate moderators) for each of the interventions, where available, that could help clinicians to select appropriate treatments for an individual.

3. a) Eligibility Criteria for including studies in the review

If the PICOS format does not fit the research question of interest, please split up the question into separate concepts and put one under each heading

i. Population, or participants and conditions of interest	**Adult populations with neck and/or low back pain of any duration (including whiplash, sciatica and radiculopathies)**
ii. Interventions/Exposure/item of interest	**Any intervention with an evidence base identified by the guideline and recommended for clinical practice (in two or more European countries)**

iii. Comparisons or control groups, if any	**N/A**
iv. Outcomes of interest	**(i) Self-reported pain, physical function and/or return to work/time off work related to NLBP** **(ii) Evidence based recommendations regarding factors (patient, clinician, environment) that may be associated with effectiveness of treatment**
v. Setting	**Any occupational or ambulant healthcare setting. Multidisciplinary guidelines will be included, as will referral guidelines.** **Guidelines of European countries will be identified from members of the Back-UP consortium.**
vi. Study designs	**Evidence-based clinical practice guidelines (agreed by formal guideline development or professional organisations)**

3. b) Criteria for excluding studies not covered in inclusion criteria

Any specific populations excluded, date range, language, whether abstracts or full text available, etc

Population: we will exclude guidelines specifically focusing on patients with neck/back pain following severe trauma: e.g. fractures of the spine, spinal cord injury
(Whiplash may be included, as well as radiculopathy)

Setting: we will exclude guidelines focusing on patients admitted to hospital (not ambulatory care).

Design: we will exclude evidence-based clinical practice guidelines which have not been published in Europe. Clinical prediction rules (where mentioned in the guideline) will be included, as will any information on effectiveness of a given treatment within a population subgroup (candidate moderator).

Publication type: we will exclude all publications that are not evidence-based clinical practice guidelines, including clinical consensus guidelines, and other publication types: systematic reviews, randomised trials, cohort studies, case series, editorials, protocols, letters

Articles for which translations could not be obtained (we will consult with our Back-UP partners for translations where possible).

4. Search methods	
Electronic databases & websites Please list all databases that are to be searched and include the interface (e.g. NHS HDAS, EBSCO, OVID etc.) and date ranges searched for each. **NB All search strategies should be reviewed by Jo Jordan or Nadia Corp BEFORE searching begins**	The following databases will be searched from 2013-2018: Guidelines International Network (G-I-N) Scottish Intercollegiate Guidelines (SIGN) National Institute for Health and Clinical Excellence (NICE) WHO Guidelines TRIP database National Institutes of Health (NIH) (if needed) Epistemonikos DynaMed Plus Back-UP consortium members will be contacted to ask for details of websites for guideline databases in their countries. MEDLINE (OVID) EMBASE (OVID) CINAHL (EBSCO) PsycINFO (EBSCO) PEDro
Other methods used for identifying relevant research i.e. contacting experts and reference checking, citation tracking	N/A
Journals hand searched If any are to be hand searched, please list which journals and date searched from, including a rationale.	N/A

5. Methods of review	
How will search results be managed & documented? ie which reference management software, how duplicates dealt with	COVIDENCE will be used to manage the flow of articles within the review. All references from the electronic searches will be downloaded into Endnote reference management software, where duplicates will be identified and removed. Titles will be screened and those that are clearly irrelevant will be removed (the first ~100 titles will be screened by both GM and NC. If agreement is high, GM will then screen all remaining titles).
Selection process Number of reviewers, how agreements to be reached and disagreements dealt with, etc.	Two reviewers (GM, NC) will be responsible for identifying relevant papers. Title screening will be followed by a review of abstracts, where those that do not meet the inclusion criteria will be excluded (independently by GM and NC). Review of full texts will be undertaken independently by GM and NC to determine eligibility. Reasons for rejecting papers at the full text stage will be recorded. A checklist with the inclusion criteria will be used to assess each reference for relevance, and the reason for exclusion at the full text stage will be recorded. Any discrepancies between the two will be discussed between GM and NC initially, with JH asked to help resolve any disagreements.
Quality assessment Tools or checklists used with references or URLs, was this piloted? Is it to be carried out at same time as data extraction?	The AGREE II (Appraisal of Guidelines Research and Evaluation) reporting checklist will be used to critically appraise the guidelines. The 22 items cover 6 domains (Scope and purpose; Stakeholder involvement; Rigour of development; Clarity of presentation, Applicability, and Editorial independence). Each item is rated on a 7-point Likert scale of 1 (Strongly disagree) and 7 (Strongly agree). The user manual gives detailed guidance on how to score each item, including where to find relevant information and what to consider when deciding on the score for each item. Each tool will be piloted on ~3 papers initially and the results compared between reviewers (GM and NC) to assess consistency between reviewers. Critical appraisal will be conducted at the same time as data extraction.
How is data to be extracted? What information is to be collected on each included study? If databases or forms on Word or Excel are used, were these piloted and how is this recorded and by how many reviewers?	The following data will be extracted: Year and country of publication Setting Study population (focus of guideline) Intervention(s) recommended for use Information or recommendations on treatment effectiveness overall and within subgroups (if available) or potential patient subgroups to target with treatment Results from the AGREE II checklist An Excel spreadsheet will be used to extract information on each included study. Three reviewers (GM, NC, GWJ) will each extract data from the full texts (GM to perform data extraction on all included references, with NC and GWJ performing data extraction on 50% of the references each), with any disagreements being initially discussed and resolved within the review team. JH will be asked to help with any unresolved disagreements.

Outcomes to be extracted & hierarchy/priority of measures ie which measure is preferred and if that is not available which is next in order of preference?	NLBP-related pain NLBP-related disability Return to work/work absence
Narrative synthesis Details of what methods, how synthesis will be done and by whom. Is the Narrative Synthesis Framework to be used?	A descriptive summary of the included evidence-based clinical practice guidelines will be provided, accompanied by a table of the critical appraisal findings. Data on the recommended treatment options and potential moderators identified will be produced, which will then inform the next step of the Back-UP project. This systematic review should yield a list of recommended treatment options (and whether this varies between countries); and a list of variables (patient characteristics, variables related to clinicians or environment) potentially associated with treatment effect.
Meta-analysis Details of what and how analysis and testing will be done. If no meta-analysis is to be conducted, please give reason.	N/A
Will the overall strength of evidence be assessed? If so, how? ie GRADE?	All studies meeting the inclusion criteria will be kept in the review regardless of assessed study quality. However the findings will be presented with the risk of bias assessment so that any associations found are viewed in light of this assessment.

6. Presentation of results	
Outputs from review Papers and target journals, conference presentations, reports, etc	It is anticipated that this work will be presented within the wider Back-UP team meetings, as well as at one international conference (Forum – Quebec 2019) and in one peer-reviewed journal (Spine/Physiotherapy/Eur J Pain). The findings will also be reported as per Horizon 2020 funding requirements. The PRISMA guidelines will be followed when writing up the results.

7. Timeline for review – when do you aim to complete each stage of the review	
Protocol	September 2018
Literature searching	October 2018
Quality appraisal	November 2018
Data extraction	November 2018
Synthesis	January 2019
Writing up	March 2019

Support – please state if advice/training or personnel required at each stage	
SR overview	
Protocol development	
Literature searching	
Quality appraisal	
Data Extraction	
Synthesis	
Writing up	