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February 24, 2017

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***Cullen KL, Irvin E, Collie A, Clay F, Gensby U, Jennings PA, Hogg-Johnson S, Kristman V, Laberge M, McKenzie D, Newnam S, Palagyi A, Ruseckaite R, Sheppard DM, Shourie S, Steenstra I, Van Eerd D, and Amick BC, III. Effectiveness of workplace interventions in return-to-work for musculoskeletal, pain-related and mental health conditions: an update of the evidence and messages for practitioners. Journal of Occupational Rehabilitation. 2017; [epub ahead of print].**
http://dx.doi.org/10.1007/s10926-016-9690-x
Abstract: Purpose The objective of this systematic review was to synthesize evidence on the effectiveness of workplace-based return-to-work (RTW) interventions and work disability management (DM) interventions that assist workers with musculoskeletal (MSK) and pain-related conditions and mental health (MH) conditions with RTW. Methods We followed a systematic review process developed by the Institute for Work & Health and an adapted best evidence synthesis that ranked evidence as strong, moderate, limited, or insufficient. Results Seven electronic databases were searched from January 1990 until April 2015, yielding 8898 non-duplicate references. Evidence from 36 medium and high quality studies were synthesized on 12 different intervention categories across three broad domains: health-focused, service coordination, and work modification interventions. There was strong evidence that duration away from work from both MSK or pain-related conditions and MH conditions were significantly reduced by multi-domain interventions encompassing at least two of the three domains. There was moderate evidence that these multi-domain interventions had a positive impact on cost outcomes. There was strong

evidence that cognitive behavioural therapy interventions that do not also include workplace modifications or service coordination components are not effective in helping workers with MH conditions in RTW. Evidence for the effectiveness of other single-domain interventions was mixed, with some studies reporting positive effects and others reporting no effects on lost time and work functioning. Conclusions While there is substantial research literature focused on RTW, there are only a small number of quality workplace-based RTW intervention studies that involve workers with MSK or pain-related conditions and MH conditions. We recommend implementing multi-domain interventions (i.e. with healthcare provision, service coordination, and work accommodation components) to help reduce lost time for MSK or pain-related conditions and MH conditions. Practitioners should also consider implementing these programs to help improve work functioning and reduce costs associated with work disability

***Furlan AD, Hassan S, Famiyeh IM, Wang W, and Dhanju J. Long-term opioid use after discharge from inpatient musculoskeletal rehabilitation. Journal of Rehabilitation Medicine. 2016; 48(5):464-468.**
http://dx.doi.org/10.2340/16501977-2080
Abstract: OBJECTIVE: To determine: (i) the prevalence of opioid-naive patients discharged on opioids from a musculoskeletal rehabilitation inpatient unit; (ii) the prevalence of opioid use 6 months after discharge; and (iii) the efficacy of the Opioid Risk Tool in identifying long-term opioid use. DESIGN: Prospective study. PARTICIPANTS: Sixty-four opioid-naive patients who were exposed to opioids during admission and who were discharged on an opioid. METHODS: Potentially eligible patients' charts were reviewed. Participants were interviewed during admission to obtain the opioid risk score and contacted 6 months after discharge via a semi-structured telephone interview. RESULTS: Twenty-eight percent of opioid-naive patients, who were discharged on opioids were still using opioids 6 months after discharge from rehabilitation. There was a trend for higher Opioid Risk Tool scores in those still using opioids than in individuals who were not using opioids at 6 months ($p = 0.053$). CONCLUSION: Patients who are prescribed opioids during a hospital admission should be screened for risk of opioid misuse. This data suggests that the Opioid Risk Tool could identify a patient's potential for becoming a long-term user of opioids

Birken SA, Powell BJ, Presseau J, Kirk MA, Lorencatto F, Gould NJ, Shea CM, Weiner BJ, Francis JJ, Yu Y, Haines E, and Damschroder LJ. Combined use of the Consolidated Framework for Implementation Research (CFIR) and the Theoretical Domains Framework (TDF): a systematic review. Implementation Science. 2017; 12(1):2.
http://dx.doi.org/10.1186/s13012-016-0534-z [open access]
Abstract: BACKGROUND: Over 60 implementation frameworks exist. Using multiple frameworks may help researchers to address multiple study purposes, levels, and degrees of theoretical heritage and operationalizability; however, using multiple frameworks may result in unnecessary complexity and redundancy

if doing so does not address study needs. The Consolidated Framework for Implementation Research (CFIR) and the Theoretical Domains Framework (TDF) are both well-operationalized, multi-level implementation determinant frameworks derived from theory. As such, the rationale for using the frameworks in combination (i.e., CFIR + TDF) is unclear. The objective of this systematic review was to elucidate the rationale for using CFIR + TDF by (1) describing studies that have used CFIR + TDF, (2) how they used CFIR + TDF, and (2) their stated rationale for using CFIR + TDF. METHODS: We undertook a systematic review to identify studies that mentioned both the CFIR and the TDF, were written in English, were peer-reviewed, and reported either a protocol or results of an empirical study in MEDLINE/PubMed, PsycInfo, Web of Science, or Google Scholar. We then abstracted data into a matrix and analyzed it qualitatively, identifying salient themes. FINDINGS: We identified five protocols and seven completed studies that used CFIR + TDF. CFIR + TDF was applied to studies in several countries, to a range of healthcare interventions, and at multiple intervention phases; used many designs, methods, and units of analysis; and assessed a variety of outcomes. Three studies indicated that using CFIR + TDF addressed multiple study purposes. Six studies indicated that using CFIR + TDF addressed multiple conceptual levels. Four studies did not explicitly state their rationale for using CFIR + TDF. CONCLUSIONS: Differences in the purposes that authors of the CFIR (e.g., comprehensive set of implementation determinants) and the TDF (e.g., intervention development) propose help to justify the use of CFIR + TDF. Given that the CFIR and the TDF are both multi-level frameworks, the rationale that using CFIR + TDF is needed to address multiple conceptual levels may reflect potentially misleading conventional wisdom. On the other hand, using CFIR + TDF may more fully define the multi-level nature of implementation. To avoid concerns about unnecessary complexity and redundancy, scholars who use CFIR + TDF and combinations of other frameworks should specify how the frameworks contribute to their study. TRIAL REGISTRATION: PROSPERO CRD42015027615

Fox DM. Evidence and health policy: using and regulating systematic reviews. American Journal of Public Health. 2017; 107(1):88-92.
http://dx.doi.org/10.2105/AJPH.2016.303485
Abstract: Systematic reviews have, increasingly, informed policy for almost 3 decades. In many countries, systematic reviews have informed policy for public and population health, paying for health care, increasing the quality and efficiency of interventions, and improving the effectiveness of health sector professionals and the organizations in which they work. Systematic reviews also inform other policy areas: criminal justice, education, social welfare, and the regulation of toxins in the environment. Although the production and use of systematic reviews has steadily increased, many clinicians, public health officials, representatives of commercial organizations, and, consequently, policymakers who are responsive to them, have been reluctant to use these reviews to inform policy; others have actively opposed using them. Systematic reviews could

inform policy more effectively with changes to current practices and the assumptions that sustain these practices-assumptions made by researchers and the organizations that employ them, by public and private funders of systematic reviews, and by organizations that finance, set priorities and standards for, and publish them

Related Articles

Bero L. Systematic review: a method at risk for being corrupted. American Journal of Public Health. 2017; 107(1):93-96.
http://dx.doi.org/10.2105/AJPH.2016.303518
Abstract: The production of systematic reviews is increasing, but their credibility is under threat. Although systematic reviews are an important tool for policymaking, their influence can be weakened by methodological problems and poor policy relevance. Using Cochrane as an example, I address standards for systematic reviews, the influence of special interests on these reviews, and ways to increase their relevance for policymakers

Greenhalgh T and Malterud K. Systematic reviews for policymaking: muddling through. American Journal of Public Health. 2017; 107(1):97-99.
http://dx.doi.org/10.2105/AJPH.2016.303557

Hegger I, Marks LK, Janssen SW, Schuit AJ, Keijsers JF, and van Oers HA. Research for Policy (R4P): development of a reflection tool for researchers to improve knowledge utilization. Implementation Science. 2016; 11(1):133. http://dx.doi.org/10.1186/s13012-016-0496-1 [open access]
Abstract: BACKGROUND: To improve knowledge utilization in policymaking, alignment between researchers and policymakers during knowledge production is essential, but difficult to maintain. In three previously reported case studies, we extensively evaluated complex research projects commissioned by policymakers to investigate how alignment is achieved in a research process and to discover ways to enhance knowledge contributions to health policy. In the present study, we investigated how the findings of these three research projects could be integrated into a practical tool for researchers to enhance their contribution to evidence-based policy. METHODS: A cross-case analysis was conducted to integrate the findings of the evaluation of the three research projects and to identify important alignment areas in these projects. By means of an iterative process, we prepared a tool that includes reflection questions for researchers. The "Research for Policy" tool was tested with input from the project managers of three new research projects. Based on the findings, the final version of the Research for Policy tool was prepared. RESULTS: By cross-case analysis of the three case studies, the following important alignment areas were identified: the goal, quality, relevance, timing, and presentation of research, the tasks and authorities of actors, the consultative structure and vertical alignment within

organizations, and the organizational environment. The project managers regarded the Research for Policy tool as a useful checklist for addressing the important alignment areas in a research project. Based on their feedback, the illustrative examples from the case studies were added to the reflection questions. The project managers suggested making the tool accessible not only to researchers but also to policymakers. The format of the Research for Policy tool was further adjusted to users' needs by adding clickable links. CONCLUSIONS: Alignment between research and policymaking requires continuous efforts and a clear understanding of process issues in the research project. The Research for Policy tool offers practical alignment guidance and facilitates reflection on process issues, which supports researchers in aligning with policymakers and in acting in a context-sensitive way

Marucci-Wellman HR, Corns HL, and Lehto MR. Classifying injury narratives of large administrative databases for surveillance-a practical approach combining machine learning ensembles and human review. Accident Analysis and Prevention. 2017; 98:359-371.
http://dx.doi.org/10.1016/j.aap.2016.10.014 [open access]
Abstract: Injury narratives are now available real time and include useful information for injury surveillance and prevention. However, manual classification of the cause or events leading to injury found in large batches of narratives, such as workers compensation claims databases, can be prohibitive. In this study we compare the utility of four machine learning algorithms (Naive Bayes, Single word and Bi-gram models, Support Vector Machine and Logistic Regression) for classifying narratives into Bureau of Labor Statistics Occupational Injury and Illness event leading to injury classifications for a large workers compensation database. These algorithms are known to do well classifying narrative text and are fairly easy to implement with off-the-shelf software packages such as Python. We propose human-machine learning ensemble approaches which maximize the power and accuracy of the algorithms for machine-assigned codes and allow for strategic filtering of rare, emerging or ambiguous narratives for manual review. We compare human-machine approaches based on filtering on the prediction strength of the classifier vs. agreement between algorithms. Regularized Logistic Regression (LR) was the best performing algorithm alone. Using this algorithm and filtering out the bottom 30% of predictions for manual review resulted in high accuracy (overall sensitivity/positive predictive value of 0.89) of the final machine-human coded dataset. The best pairings of algorithms included Naive Bayes with Support Vector Machine whereby the triple ensemble NBSW=NBBI-GRAM=SVM had very high performance (0.93 overall sensitivity/positive predictive value and high accuracy (i.e. high sensitivity and positive predictive values)) across both large and small categories leaving 41% of the narratives for manual review. Integrating LR into this ensemble mix improved performance only slightly. For large administrative datasets we propose incorporation of methods based on human-machine pairings such as we have done here, utilizing readily-available off-the-shelf machine learning techniques and resulting in only a

fraction of narratives that require manual review. Human-machine ensemble methods are likely to improve performance over total manual coding

May CR, Johnson M, and Finch T. Implementation, context and complexity. Implementation Science. 2016; 11(1):141.
http://dx.doi.org/10.1186/s13012-016-0506-3 [open access]
Abstract: BACKGROUND: Context is a problem in research on health behaviour change, knowledge translation, practice implementation and health improvement. This is because many intervention and evaluation designs seek to eliminate contextual confounders, when these represent the normal conditions into which interventions must be integrated if they are to be workable in practice. DISCUSSION: We present an ecological model of the ways that participants in implementation and health improvement processes interact with contexts. The paper addresses the problem of context as it affects processes of implementation, scaling up and diffusion of interventions. We extend our earlier work to develop Normalisation Process Theory and show how these processes involve interactions between mechanisms of resource mobilisation, collective action and negotiations with context. These mechanisms are adaptive. They contribute to self-organisation in complex adaptive systems. CONCLUSION: Implementation includes the translational efforts that take healthcare interventions beyond the closed systems of evaluation studies into the open systems of 'real world' contexts. The outcome of these processes depends on interactions and negotiations between their participants and contexts. In these negotiations, the plasticity of intervention components, the degree of participants' discretion over resource mobilisation and actors' contributions, and the elasticity of contexts, all play important parts. Understanding these processes in terms of feedback loops, adaptive mechanisms and the practical compromises that stem from them enables us to see the mechanisms specified by NPT as core elements of self-organisation in complex systems

Midtsundstad TI and Nielsen RA. Do workplace interventions reduce disability rates? Occupational Medicine. 2016; 66(9):691-697.
http://dx.doi.org/10.1093/occmed/kqw169 [open access]
Abstract: BACKGROUND: Increasing life expectancy and decreasing fertility have led to a shift in the workforce age structure towards older age groups. Deteriorating health and reduced work capacity are among the challenges to retaining older workers in the labour force. AIMS: To examine whether workplace interventions to facilitate work among employees with health problems or reduced work capacity affect disability rates among employees aged 50 years and older. METHODS: Data from a survey of Norwegian companies (n = 713) were linked with registry data on their employees aged 50-61 years (n = 30771). By means of a difference-in-differences approach, we compared change in likelihood of receiving a full disability pension among employees in companies with and without workplace interventions. RESULTS: Employees in companies reporting to have workplace interventions in 2005 had a higher risk of receiving

full disability pension during the period 2001-03 compared with employees in companies without such interventions [odds ratio (OR) 1.25, 95% confidence interval (CI) 1.07-1.45]. During the period 2005-07, there was an overall reduction in disability rates (OR 0.83, 95% CI 0.71-0.96) in both the intervention and control group. However, employees in companies reporting to have interventions in 2005 experienced an additional reduction in an employee's likelihood of receiving a full disability pension (OR 0.80, 95% CI 0.64-0.99) compared with employees in companies without interventions. CONCLUSIONS: Interventions to facilitate work among employees with health problems or reduced work capacity have reduced disability rates among employees aged 50-61. This suggests that companies' preventive interventions are an effective means to retain older workers with deteriorating health

Norris SL, Meerpohl JJ, Akl EA, Schunemann HJ, Gartlehner G, Chen Y, and Whittington C. The skills and experience of GRADE methodologists can be assessed with a simple tool. Journal of Clinical Epidemiology. 2016; 79:150-158.
http://dx.doi.org/10.1016/j.jclinepi.2016.07.001
Abstract: OBJECTIVES: To suggest approaches for guideline developers on how to assess a methodologist's expertise with Grading of Recommendations Assessment, Development and Evaluation (GRADE) methods and tasks and to provide a set of minimum skills and experience required to perform specific tasks related to guideline development using GRADE. STUDY DESIGN AND SETTING: We used an iterative and consensus-based process involving individuals with in-depth experience with GRADE. We considered four main tasks: (1) development of key questions; (2) assessment of the certainty of effect estimates; (3) development of recommendations; and (4) teaching GRADE. RESULTS: There are three basic approaches to determine a methodologist's skill set. First, self-report of knowledge, skills, and experience with a standardized "GRADE curriculum vitae (CV)" focused on each of the GRADE-related tasks; second, demonstration of skills using worked examples; third, a formal evaluation using a written or oral test. We suggest that the GRADE CV is likely to be useful and feasible to implement. We also suggest minimum training including attendance at one or more full-day workshops and familiarity with the main GRADE publications and the GRADE handbook. CONCLUSIONS: The selection of a GRADE methodologist must be a thoughtful, reasoned decision, informed by the criteria suggested in this article and tailored to the specific project. Our suggested approaches need further pilot testing and validation

Petersen KS, Labriola M, Nielsen CV, and Ladekjaer Larsen E. Returning and staying connected to work after long-term sickness absence. Occupational Medicine. 2016; 66(9):725-730.
http://dx.doi.org/10.1093/occmed/kqw159
Abstract: BACKGROUND: Returning to work (RTW) after long-term sickness absence is a challenge for convalescent workers, co-workers, managers and

organizations. Few studies have investigated the post-return phase after long-term sickness absence. AIMS: To investigate the RTW process as experienced by returning workers, co-workers and managers at an emergency care service and a waste disposal company, exploring various perspectives related to early RTW before full recovery and changes in the returning workers' work positions. METHODS: An ethnographic field work design was employed. Returning workers with musculoskeletal disorders, co-workers and managers at two different workplaces participated in individual and group interviews and underwent participant observation over 5 months. These were repeated in a 2-week period after a 4-month interval. Grounded theory analysis was used to identify themes of importance. RESULTS: Four main themes were identified: (1) return before full recovery, (2) changes in work tasks, (3) changes in work position and (4) individual responsibility. CONCLUSIONS: Our results illustrate how returning workers, co-workers and managers at two workplaces experienced the RTW process. The results highlight some of the challenges that occur when returning at an early stage before full recovery is obtained leading to changes in the returning worker's work position

Petitta L, Probst TM, Barbaranelli C, and Ghezzi V. Disentangling the roles of safety climate and safety culture: multi-level effects on the relationship between supervisor enforcement and safety compliance. Accident Analysis and Prevention. 2017; 99(Pt A):77-89.
http://dx.doi.org/10.1016/j.aap.2016.11.012
Abstract: Despite increasing attention to contextual effects on the relationship between supervisor enforcement and employee safety compliance, no study has yet explored the conjoint influence exerted simultaneously by organizational safety climate and safety culture. The present study seeks to address this literature shortcoming. We first begin by briefly discussing the theoretical distinctions between safety climate and culture and the rationale for examining these together. Next, using survey data collected from 1342 employees in 32 Italian organizations, we found that employee-level supervisor enforcement, organizational-level safety climate, and autocratic, bureaucratic, and technocratic safety culture dimensions all predicted individual-level safety compliance behaviors. However, the cross-level moderating effect of safety climate was bounded by certain safety culture dimensions, such that safety climate moderated the supervisor enforcement-compliance relationship only under the clan-patronage culture dimension. Additionally, the autocratic and bureaucratic culture dimensions attenuated the relationship between supervisor enforcement and compliance. Finally, when testing the effects of technocratic safety culture and cooperative safety culture, neither safety culture nor climate moderated the relationship between supervisor enforcement and safety compliance. The results suggest a complex relationship between organizational safety culture and safety climate, indicating that organizations with particular safety cultures may be more likely to develop more (or less) positive safety climates. Moreover, employee

safety compliance is a function of supervisor safety leadership, as well as the safety climate and safety culture dimensions prevalent within the organization

Petkovic J, Welch V, Jacob MH, Yoganathan M, Ayala AP, Cunningham H, and Tugwell P. The effectiveness of evidence summaries on health policymakers and health system managers use of evidence from systematic reviews: a systematic review. Implementation Science. 2016; 11(1):162.
http://dx.doi.org/10.1186/s13012-016-0530-3 **[open access]**
Abstract: BACKGROUND: Systematic reviews are important for decision makers. They offer many potential benefits but are often written in technical language, are too long, and do not contain contextual details which make them hard to use for decision-making. There are many organizations that develop and disseminate derivative products, such as evidence summaries, from systematic reviews for different populations or subsets of decision makers. This systematic review aimed to (1) assess the effectiveness of evidence summaries on policymakers' use of the evidence and (2) identify the most effective summary components for increasing policymakers' use of the evidence. We present an overview of the available evidence on systematic review derivative products. METHODS: We included studies of policymakers at all levels as well as health system managers. We included studies examining any type of "evidence summary," "policy brief," or other products derived from systematic reviews that presented evidence in a summarized form. The primary outcomes were the (1) use of systematic review summaries in decision-making (e.g., self-reported use of the evidence in policymaking and decision-making) and (2) policymakers' understanding, knowledge, and/or beliefs (e.g., changes in knowledge scores about the topic included in the summary). We also assessed perceived relevance, credibility, usefulness, understandability, and desirability (e.g., format) of the summaries. RESULTS: Our database search combined with our gray literature search yielded 10,113 references after removal of duplicates. From these, 54 were reviewed in full text, and we included six studies (reported in seven papers) as well as protocols from two ongoing studies. Two studies assessed the use of evidence summaries in decision-making and found little to no difference in effect. There was also little to no difference in effect for knowledge, understanding or beliefs (four studies), and perceived usefulness or usability (three studies). Summary of findings tables and graded entry summaries were perceived as slightly easier to understand compared to complete systematic reviews. Two studies assessed formatting changes and found that for summary of findings tables, certain elements, such as reporting study event rates and absolute differences, were preferred as well as avoiding the use of footnotes. CONCLUSIONS: Evidence summaries are likely easier to understand than complete systematic reviews. However, their ability to increase the use of systematic review evidence in policymaking is unclear. TRIAL REGISTRATION: The protocol was published in the journal Systematic Reviews (2015;4:122)

Prince MJ. Persons with invisible disabilities and workplace accommodation: findings from a scoping literature review. Journal of Vocational Rehabilitation. 2017; 46(1):75-86.
http://dx.doi.org/10.3233/JVR-160844

Purc-Stephenson RJ, Jones SK, and Ferguson CL. "Forget about the glass ceiling, I'm stuck in a glass box": a meta-ethnography of work participation for persons with physical disabilities. Journal of Vocational Rehabilitation. 2017; 46(1):49-65.
http://dx.doi.org/10.3233/JVR-160842

Riis A, Jensen CE, Bro F, Maindal HT, Petersen KD, Bendtsen MD, and Jensen MB. A multifaceted implementation strategy versus passive implementation of low back pain guidelines in general practice: a cluster randomised controlled trial. Implementation Science. 2016; 11(1):143.
http://dx.doi.org/10.1186/s13012-016-0509-0 [open access]
Abstract: BACKGROUND: Guidelines are often slowly adapted into clinical practice. However, actively supporting healthcare professionals in evidence-based treatment may speed up guideline implementation. Danish low back pain (LBP) guidelines focus on primary care treatment of LBP, to reduce referrals from primary care to secondary care. The primary aim of this project was to reduce secondary care referral within 12 weeks by a multifaceted implementation strategy (MuIS). METHODS: In a cluster randomised design, 189 general practices from the North Denmark Region were invited to participate. Practices were randomised (1:1) and stratified by practice size to MuIS (28 practices) or a passive implementation strategy (PaIS; 32 practices). Included were patients with LBP aged 18 to 65 years who were able to complete questionnaires, had no serious underlying pathology, and were not pregnant. We developed a MuIS including outreach visits, quality reports, and the STarT Back Tool for subgrouping patients with LBP. Both groups were offered the usual dissemination of guidelines, guideline-concordant structuring of the medical record, and a new referral opportunity for patients with psycho-social problems. In an intention-to-treat analysis, the primary and secondary outcomes pertained to the patient, and a cost-effectiveness analysis was performed from a healthcare sector perspective. Patients and the assessment of outcomes were blinded. Practices and caregivers delivering the interventions were not blinded. RESULTS: Between January 2013 and July 2014, 60 practices were included, of which 54 practices (28 MuIS, 26 PaIS) included 1101 patients (539 MuIS, 562 PaIS). Follow-up data for the primary outcome were available on 100 % of these patients. Twenty-seven patients (5.0 %) in the MuIS group were referred to secondary care vs. 59 patients (10.5 %) in the PaIS group. The adjusted odds ratio (AOR) was 0.52 [95 % CI 0.30 to 0.90; p = 0.020]. The MuIS was cost-saving pound-93.20 (pound406.51 vs. pound499.71 per patient) after 12 weeks. Conversely, the MuIS resulted in less satisfied patients after 52 weeks (AOR 0.50 [95 % CI 0.31 to 0.81; p = 0.004]). CONCLUSIONS: Using a MuIS changed

general practice referral behaviour and was cost effective, but patients in the MuIS group were less satisfied. This study supports the application of a MuIS when implementing guidelines. TRIAL REGISTRATION: ClinicalTrials.gov, NCT01699256

Sinnenberg L, Buttenheim AM, Padrez K, Mancheno C, Ungar L, and Merchant RM. Twitter as a tool for health research: a systematic review. American Journal of Public Health. 2017; 107(1):e1-e8. http://dx.doi.org/10.2105/AJPH.2016.303512

Abstract: BACKGROUND: Researchers have used traditional databases to study public health for decades. Less is known about the use of social media data sources, such as Twitter, for this purpose. OBJECTIVES: To systematically review the use of Twitter in health research, define a taxonomy to describe Twitter use, and characterize the current state of Twitter in health research. SEARCH METHODS: We performed a literature search in PubMed, Embase, Web of Science, Google Scholar, and CINAHL through September 2015. SELECTION CRITERIA: We searched for peer-reviewed original research studies that primarily used Twitter for health research. DATA COLLECTION AND ANALYSIS: Two authors independently screened studies and abstracted data related to the approach to analysis of Twitter data, methodology used to study Twitter, and current state of Twitter research by evaluating time of publication, research topic, discussion of ethical concerns, and study funding source. MAIN RESULTS: Of 1110 unique health-related articles mentioning Twitter, 137 met eligibility criteria. The primary approaches for using Twitter in health research that constitute a new taxonomy were content analysis (56%; n = 77), surveillance (26%; n = 36), engagement (14%; n = 19), recruitment (7%; n = 9), intervention (7%; n = 9), and network analysis (4%; n = 5). These studies collectively analyzed more than 5 billion tweets primarily by using the Twitter application program interface. Of 38 potential data features describing tweets and Twitter users, 23 were reported in fewer than 4% of the articles. The Twitter-based studies in this review focused on a small subset of data elements including content analysis, geotags, and language. Most studies were published recently (33% in 2015). Public health (23%; n = 31) and infectious disease (20%; n = 28) were the research fields most commonly represented in the included studies. Approximately one third of the studies mentioned ethical board approval in their articles. Primary funding sources included federal (63%), university (13%), and foundation (6%). CONCLUSIONS: We identified a new taxonomy to describe Twitter use in health research with 6 categories. Many data elements discernible from a user's Twitter profile, especially demographics, have been underreported in the literature and can provide new opportunities to characterize the users whose data are analyzed in these studies. Twitter-based health research is a growing field funded by a diversity of organizations. Public health implications. Future work should develop standardized reporting guidelines for health researchers who use Twitter and policies that address privacy and ethical concerns in social media research

Snilstveit B, Vojtkova M, Bhavsar A, Stevenson J, and Gaarder M. Evidence & Gap Maps: a tool for promoting evidence informed policy and strategic research agendas. Journal of Clinical Epidemiology. 2016; 79:120-129.
http://dx.doi.org/10.1016/j.jclinepi.2016.05.015
Abstract: A range of organizations are engaged in the production of evidence on the effects of health, social, and economic development programs on human welfare outcomes. However, evidence is often scattered around different databases, web sites, and the gray literature and is often presented in inaccessible formats. Lack of overview of the evidence in a specific field can be a barrier to the use of existing research and prevent efficient use of limited resources for new research. Evidence & Gap Maps (EGMs) aim to address these issues and complement existing synthesis and mapping approaches. EGMs are a new addition to the tools available to support evidence-informed policymaking. To provide an accessible resource for researchers, commissioners, and decision makers, EGMs provide thematic collections of evidence structured around a framework which schematically represents the types of interventions and outcomes of relevance to a particular sector. By mapping the existing evidence using this framework, EGMs provide a visual overview of what we know and do not know about the effects of different programs. They make existing evidence available, and by providing links to user-friendly summaries of relevant studies, EGMs can facilitate the use of existing evidence for decision making. They identify key "gaps" where little or no evidence from impact evaluations and systematic reviews is available and can be a valuable resource to inform a strategic approach to building the evidence base in a particular sector. The article will introduce readers to the concept and methods of EGMs and present a demonstration of the EGM tool using existing examples

Suman A, Dikkers MF, Schaafsma FG, Van Tulder MW, and Anema JR. Effectiveness of multifaceted implementation strategies for the implementation of back and neck pain guidelines in health care: a systematic review. Implementation Science. 2016; 11(1):126.
http://dx.doi.org/10.1186/s13012-016-0482-7 **[open access]**
Abstract: BACKGROUND: For the optimal use of clinical guidelines in daily practice, mere distribution of guidelines and materials is not enough, and active implementation is needed. This review investigated the effectiveness of multifaceted implementation strategies compared to minimal, single, or no implementation strategy for the implementation of non-specific low back and/or neck pain guidelines in health care. METHODS: The following electronic databases were searched from inception to June 1, 2015: MEDLINE, Embase, PsycInfo, the Cochrane Library, and CINAHL. The search strategy was restricted to low back pain, neck pain, and implementation research. Studies were included if their design was a randomized controlled trial, reporting on patients (age >/=18 years) with non-specific low back pain or neck pain (with or without radiating pain). Trials were eligible if they reported patient outcomes, measures of healthcare professional behaviour, and/or outcomes on healthcare level. The

primary outcome was professional behaviour. Guidelines that were evaluated in the studies had to be implemented in a healthcare setting. No language restrictions were applied, and studies had to be published full-text in peer-reviewed journals, thus excluding abstract only publications, conference abstracts, and dissertation articles. Two researchers independently screened titles and abstract, extracted data from included studies, and performed risk of bias assessments. RESULTS: After removal of duplicates, the search resulted in 4750 abstracts to be screened. Of 43 full-text articles assessed for eligibility, 12 were included in this review, reporting on 9 individual studies, and separate cost-effectiveness analyses of 3 included studies. Implementation strategies varied between studies. Meta-analyses did not reveal any differences in effect between multifaceted strategies and controls. CONCLUSION: This review showed that multifaceted strategies for the implementation of neck and/or back pain guidelines in health care do not significantly improve professional behaviour outcomes. No effects on patient outcomes or cost of care could be found. More research is necessary to determine whether multifaceted implementation strategies are conducted as planned and whether these strategies are effective in changing professional behaviour and thereby clinical practice

Tiagi R. Intergenerational differences in occupational injury and fatality rates among Canada's immigrants. Occupational Medicine. 2016; 66(9):743-750.

http://dx.doi.org/10.1093/occmed/kqw154

Abstract: BACKGROUND: Empirical evidence on occupational injury and/or fatality rates among Canada's immigrants has been largely mixed and has almost exclusively focused on the first generation. Over time, as immigrants assimilate into the economy, future generations may be expected to work in less hazardous occupations compared with prior generations. There has been no prior analysis of the differences in occupational injury and fatality rates among later generations. AIMS: To analyse whether there are intergenerational differences in occupational injury and fatality rates among the first, second and third (or more) immigrant generations in Canada. METHODS: Data drawn from the 2011 National Household Survey and the Association of Workers' Compensation Boards of Canada were used to determine the difference in occupational injury and fatality rates between the first or the third generation and the second generation, using a Poisson regression framework. RESULTS: Second-generation immigrants worked in jobs with lower occupational injury rates compared with the first generation and the third generation (or more). Similar results were observed for occupational fatality rates. CONCLUSIONS: Second-generation immigrants worked in less hazardous jobs compared with the first generation and compared with the third (or more) generations. These results suggest that the second generation may not face the same economic hurdles and challenges, in terms of workplace injuries or fatalities, as those faced by the first or third (or more) generations of immigrants

Tricco AC, Cogo E, Page MJ, Polisena J, Booth A, Dwan K, MacDonald H, Clifford TJ, Stewart LA, Straus SE, and Moher D. A third of systematic reviews changed or did not specify the primary outcome: a PROSPERO register study. Journal of Clinical Epidemiology. 2016; 79:46-54.
http://dx.doi.org/10.1016/j.jclinepi.2016.03.025
Abstract: OBJECTIVES: To examine outcome reporting bias of systematic reviews registered in PROSPERO. STUDY DESIGN AND SETTING: Retrospective cohort study. The primary outcomes from systematic review publications were compared with those reported in the corresponding PROSPERO records; discrepancies in the primary outcomes were assessed as upgrades, additions, omissions, or downgrades. Relative risks (RRs) and 95% confidence intervals (CI) were calculated to determine the likelihood of having a change in primary outcome when the meta-analysis result was favorable and statistically significant. RESULTS: Ninety-six systematic reviews were published. A discrepancy in the primary outcome occurred in 32% of the included reviews and 39% of the reviews did not explicitly specify a primary outcome(s); 6% of the primary outcomes were omitted. There was no significant increased risk of adding/upgrading (RR, 2.14; 95% CI: 0.53, 8.63) or decreased risk of downgrading (RR, 0.76; 95% CI: 0.27, 2.17) an outcome when the meta-analysis result was favorable and statistically significant. As well, there was no significant increased risk of adding/upgrading (RR, 0.89; 95% CI: 0.31, 2.53) or decreased risk of downgrading (RR, 0.56; 95% CI: 0.29, 1.08) an outcome when the conclusion was positive. CONCLUSIONS: We recommend review authors carefully consider primary outcome selection, and journals are encouraged to focus acceptance on registered systematic reviews

Woolford MH, Bugeja L, Driscoll T, and Ibrahim JE. Missed opportunities to prevent workplace injuries and fatalities. New Solutions. 2017; [epub ahead of print].
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Abstract: Prevention efforts, especially in high-income countries, have reduced work-related death and injury. Despite this, the global incidence of workplace fatalities remains unacceptably high with approximately 317 million incidents occurring on the job annually. Of particular concern is the occurrence and re-occurrence of incidents with a similar cause and circumstance, such as fatalities occurring in agriculture and transport industries. Efforts to reduce workplace fatalities include surveillance and reporting, investigation, and regulation. Challenges remain in all three domains, limiting the prevention of work-related injuries and deaths. In this commentary, the nature of these challenges and recommendations on how to overcome them are described. Examples of incidents of workplace injury and death, as well as injury prevention efforts are provided to ensure contextual understanding. Reflecting on the present enhances key stakeholders, policy and decision-makers' understanding of the opportunities to reducing harm and the associated human, and economic and legal costs

*IWH authored publications.