

Supplementary Table S4: Indicator themes not considered feasible for use in primary care

Overarching Theme [source]	'Exemplar' indicator	Indicator theme	Reproducibility	Feasibility (implementations of the indicator theme)	Primary care implementation suggestion
Holistic Assessment: Examination [NICE, EULAR (all)]	IF a patient is begun on a drug treatment for "joint pain," "arthritis," or "arthralgia," THEN evidence that the affected joint was examined should be documented. [Arthritis Foundation] [51,52]	If a person reports new joint pain, then the joint should be examined	ACOVE/NH [42] (2 indicators, one relating to new residents, one to residents prescribed a drug to treat new joint pain), PCPI [54]	This indicator had not been implemented in any identified studies	<i>Not suitable: This indicator was not considered feasible for implementation due to limitations in recording examination findings in format suitable for easy audit—could only be implemented with substantial change to coding behaviour.</i>
Holistic Assessment: Joint aspiration [None]	IF a vulnerable elder has monoarticular joint pain associated with redness, warmth, or swelling AND the patient also has an oral temperature greater than 38.0 °C and does not have a previously established diagnosis of pseudogout or gout, THEN a diagnostic aspiration of the painfully swollen red joint should be performed that day... [ACOVE-1] [32,33]	If a patient with a diagnosis of OA has symptoms and signs consistent with septic arthritis then a diagnostic aspiration of the affected joint(s) the same day.	ACOVE/NH [42], HPCQI [45]	Although implemented in one identified study (Wenger 2003) [34], no patients were eligible for this process of care (numerator of zero)	<i>Not suitable: This indicator was not considered feasible for implementation due to limitations in recording differential diagnoses, and because such patients are likely to be referred to secondary care as an emergency; denominator hard to define</i>
Weight management -3 [ACR (hip, knee), NICE, OARSI]	IF a patient has symptomatic osteoarthritis of the knee or hip and has been overweight (as defined by body mass index of ≥ 27 kg/m ²) for 3 years, THEN the patient should receive referral to a weight loss program...[Arthritis Foundation] [51,52]	[no variations, original indicator kept]	No other variations	Østerås 2013. [40]	<i>Not suitable: This indicator was considered less feasible for implementation in primary care using routine data sources</i>
Paracetamol – 3 [ACR (hip, knee), EULAR (all), NICE, OARSI]	Percentage of patient visits for patients aged 21 years and older with a diagnosis of OA with an assessment for use of anti-inflammatory or analgesic OTC medications [PCPI] [54]	[no variations, original indicator kept]	No other variations	Østerås 2013. [40]	<i>Not suitable: not considered to have been through the same degree of development and testing as most other indicators</i>
Paracetamol – 4 [ACR (hip, knee), EULAR (all), NICE, OARSI]	Percentage of patient visits for patients aged 21 years and older with a diagnosis of OA during which an anti-inflammatory agent or analgesic was considered [PCPI] [54]	[no variations, original indicator kept]	No other variations	This indicator had not been implemented in any identified studies	<i>Not suitable: not considered to have been through the same degree of development and testing as most other indicators</i>
Paracetamol – 5 [ACR (hip, knee), EULAR (all), NICE, OARSI]	IF a vulnerable elder is prescribed chronic high-dose acetaminophen (≥ 3 g/d) or a VE with liver disease is prescribed chronic acetaminophen, THEN he or she should be advised of the risk of liver toxicity... [ACOVE-3] [46-48]	[no variations, original indicator kept]	No other variations	This indicator had not been implemented in any identified studies	<i>Not suitable: considered less feasible to measure from routinely coded data sources – could be implemented with substantial change to coding behaviour.</i>
Oral NSAIDs – 3 [all]	Percentage of patient visits for patients aged 21 years and older with a diagnosis of OA with an assessment for use of anti-inflammatory or analgesic OTC medications [PCPI] [54]	[no variations, original indicator kept]	No other variations	Østerås 2013. [40]	<i>Not suitable: not considered to have been through the same degree of development and testing as most other indicators</i>
Oral NSAIDs – 4 [all]	Percentage of patient visits for patients aged 21 years and older with a diagnosis of OA during which an anti-inflammatory agent or analgesic was considered [PCPI] [54]	[no variations, original indicator kept]	No other variations	This indicator had not been implemented in any identified studies	<i>Not suitable: not considered to have been through the same degree of development and testing as most other indicators</i>
Oral NSAIDs – 5 [all]	IF a VE is prescribed an NSAID (nonselective or selective), THEN GI bleeding risks should be discussed and documented... [ACOVE-3] [46-48]	If a person has symptomatic osteoarthritis treated with oral NSAIDs, then that person should be advised of the degree of clinical risk associated with NSAID use	ACOVE-1 [32,33], HPCQI [45]	Implemented in Wenger 2003 [34], Higashi 2004, 2005 [36,37], Ganz 2006 [38], Steel 2007 [12], Broadbent 2008 [13], Østerås 2013. [40] Where stated, it seems that credit is given for even a rather nonspecific warning in the free text of the medical record.	<i>Not suitable: Indicator was considered less feasible to measure from routinely coded data sources. Could only be implemented with substantial revision to coding practices.</i>

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Overarching Theme [source]	'Exemplar' indicator	Indicator theme	Reproducibility	Feasibility (implementations of the indicator theme)	Primary care implementation suggestion
Specialist Assessment [None]	IF a patient has hip or knee osteoarthritis AND has worsening complaints accompanied by a progressive decrease in activities AND no previous radiograph during the preceding 3 months, THEN a knee or hip radiograph should be performed within 3 months... [Arthritis Foundation] [51,52]	[no variations, original indicator kept]	No other variations	This indicator had not been implemented in any identified studies	<i>Not suitable: Indicator was not considered appropriate for implementation since denominator hard to define</i>