Critical Intelligence Unit

Same-day joint replacement surgery

Evidence check

23 January 2026

Evidence check question

What is the evidence on outcomes for same-day joint replacement surgery compared with inpatient joint replacement surgery?

Summary

- This check includes 29 systematic reviews, published from 2021 onwards. Most of the studies were on knee, hip and shoulder joint replacement surgeries, with a few on ankle and elbow joints.
- Same-day joint replacement surgery was also referred to as outpatient surgery in the included studies.
- Individual study types included in the review articles were mostly retrospective and prospective cohort studies from single centres, and larger database or registry studies. There were few randomised controlled trials. Authors often described the included studies as having a high risk of bias.
- Overall, studies generally found that same-day joint replacement surgery compared to inpatient joint surgery had:
    - Similar or lower complication rates, readmission rates, reoperation rates, mortality, transfusion rates and emergency department admissions
    - Mixed evidence on surgical site infection rate and pain, with some studies favouring inpatient and some outpatient
    - Similar favourable functional outcomes
    - Similar patient satisfaction
    - Reduced cost
- Patients undergoing same-day surgery were generally younger, more likely to be male, have a lower body mass index (BMI), and a lower American Society of Anaesthesiologists (ASA) score or Charlson Comorbidity Index (CCI) and fewer comorbidities.
- Limitations include that the review articles did not generally analyse results by rural or regional settings. They also did not always specify the availability or use of early rehabilitation or postoperative follow up that was available for patients and did not always compare patients with similar characteristics. This review includes international studies. Models of discharge may be different across different jurisdictions. All these factors may bias the outcomes found.

Evidence

Table one: Outcomes for same-day joint replacement surgery compared with inpatient surgery

	Knee	Hip	Knee and hip	Shoulder	Ankle	Elbow
Clinical outcomes	Overall, most reviews found similar[1-3] or lower[4] complication rates Overall, most reviews found similar[1-3, 5] or lower[4, 6] readmission rates More pain postoperative day 2 and no difference in functional outcome[7] Lower postoperative transfusion rate[5]	Fewer total complications[2] No significant differences in readmissions[8] Mixed evidence on pain, 2 studies favouring inpatient and 2 favouring outpatient[7] Favourable hip function at 2 years[7] Improved VAS scores and NRS at rest and during activity[8]	Overall, most reviews found similar[2, 9-13] or lower[11, 14] complication rates Overall, most reviews found similar[9-13] or lower[2, 14] readmission rates. One review reported observational studies found increased risk of readmission[11] Similar[9] or lower[14] emergency department attendance No significant difference in reoperation or mortality[2, 12-14] More cardiac arrests and fewer blood transfusions[2] Fewer cases of surgical related pain[2] No significant differences in surgical infection site,	Overall, most reviews found similar[15-18] or lower[19-25] complication rates Overall, most reviews found similar[16-18, 20-22, 25] or lower[15, 18, 19, 23 24] readmission rates Revision rates were similar[20, 22, 25] or lower[24] No significant difference in mortality rates[18] Conflicting results for rate of surgical infections[18] No significant differences in visual analogue scale (VAS) scores[23]	Lower rate of complications, readmissions and reoperations[26, 27]	Decreased complication rate, adverse discharge and surgical site infection rate[28, 29] No significant difference in readmissions, urinary tract infections, renal complications, pneumonia, respiratory failure, deep vein thrombosis, pulmonary embolism, sepsis or wound dehiscence[28, 29]

	Knee	Hip	Knee and hip	Shoulder	Ankle	Elbow
	No significant difference in reoperation rate, surgical site infection, periprosthetic fracture[5] and venous thrombosis[3] Lower incidence of urinary tract infection, pulmonary embolus and transfusion[3]		pneumonia, renal insufficiency, renal failure, urinary tract infection, myocardial infarction, sepsis or deep vein thrombosis[2] Mixed evidence on mortality, either reduced or the same[11] One review analysed results by study type and found: Registry and other observational studies found reductions in mortality, however interrupted time series did not (and found increased risk of periprosthetic fracture). No difference in blood transfusion requirements, neurovascular injury other complications or stiffness (based on RCTs). Other observational studies found increased risk of readmission but reduced odds of blood transfusion and venous thromboembolism.[11]	Similar[17, 23] or lower[24] rates of emergency department visits No significant difference in rates of cardiac complications, cerebrovascular events, thromboembolic events, pulmonary complications, cardiac complications, and nerve complications[18]		
Patient satisfaction	No difference for patient reported satisfaction[7]	No difference for patient reported satisfaction[7]	Patient-reported outcome measures were either equal or favoured day-case[14]	Higher mean American Shoulder and Elbow surgeons (ASES) score[23]		

	Knee	Hip	Knee and hip	Shoulder	Ankle	Elbow
			No differences[9] Improvement in PROMS[10]	Patients reported high levels of satisfaction[16, 17, 19, 21]		
Eligibility/indications	Major comorbidities may cause patients to be ineligible[4]		More likely to be younger, male and had a lower BMI and ASA[10, 14]	More likely to be male, younger with a lower ASA score or Charlson Comorbidity Index (CCI)[9, 15, 17, 19, 20, 22, 23, 25] Differing reports of BMI (3 studies lower BMI in inpatients, one study lower in outpatient and one study no different)[19] Fewer medical comorbidities such as pulmonary disease, hypertension, chronic kidney disease, diabetes, congestive heart failure, coronary artery disease and diabetes[9, 15, 16, 19, 25]	Relatively younger, had a lower BMI and fewer comorbidities[26]	No significant differences in sex or age[28]
Cost			Cost-effectiveness was either equal or favoured day-case[14] Cost reduction[10, 13]	Reduction in cost[15-17, 19-22, 24]		Cost reduction[29]

Aboriginal health lens

There is no publish evidence directly addressing the Aboriginal health aspects of this evidence check question, which highlights a gap in the literature.

Background

Advancements in surgical and pain management techniques, along with enhanced preoperative and postoperative care and planning, are making same-day joint replacement surgery, also called outpatient surgery, more common and feasible.[30] It involves a multidisciplinary approach with comprehensive patient selection, education, appropriate multi-modal analgesia, early mobilisation and patient follow up, including physical therapy and involvement of caregivers at home.[31, 32]

The Agency for Clinical Innovation published a key principles document in March 2022. It outlines key elements of a same-day surgery model, including establishing a team, providing preoperative patient education, using appropriate multi-modal analgesia, promoting early mobilisation, and ensuring patient follow up after discharge. It also emphasises assessing patient suitability, which includes confirming patient willingness, evaluating home supports, and ensuring a favourable anaesthetic and comorbidity profile and important.[32]

Systematic reviews identify predictors of failed same-day discharge, including elderly patients, women, non-white race, certain comorbidities (such as hypertension, diabetes, cardiovascular diseases, chronic obstructive pulmonary disease, bleeding disorders, high number of allergies), obesity, steroid use, smoking, late procedure start time, higher postoperative pain, use of general anaesthesia and high American Society of Anaesthesiologists score.[33, 34] Observational studies in regional settings in Australia and the UK found that day-stay joint replacement surgery pathways were feasible to implement, safe and acceptable to patients.[35, 36]

Method

PubMed and Google searches were conducted on 10 September 2025 and 15 October 2025 respectively. A total of 142 peer-reviewed studies (after removing duplicates) returned from PubMed search were screened. See Appendix 1 for the search strategy and inclusion criteria.

Limitations

Only systematic reviews were included, and no quality assessment was undertaken. Not all review articles looked at the same outcomes, and outcomes were reported as per the included reviews. Systematic review articles generally did not specifically include or exclude, or analyse results by, rural or regional settings. While many of the review articles described characteristics of patients in both groups, such as ASA score and comorbidities, they did not necessarily compare patients with similar baseline characteristics. Additionally, many of the reviews did not specify the availability or use of early rehabilitation or postoperative follow up that was available for patients who underwent same-day joint replacement surgery. Finally, this review includes international studies, and models of discharge may be different across different jurisdictions.

Appendix

Methods

Critical Intelligence Unit (CIU) Evidence Checks are not intended to be exhaustive systematic reviews (multiple databases, formal critical appraisal, etc.) but instead rapid, responsive evidence summaries:[37]

- search terms for PubMed are developed by CIU team and checked by the requesting team
- literature is restricted to the highest levels of evidence available for a particular topic
- single reviewer screening and data extraction, with consultation in case of any uncertainty
- review of evidence check by: CIU Manager and Executive Lead, requesting team, clinical expert advisory group (as appropriate), and at least one external peer reviewer.

CIU evidence checks include searching for literature specific to Aboriginal and Torres Strait Islander people to highlight any relevant literature or gaps in the literature as a way to work towards reducing the gap between Aboriginal and non-Aboriginal people.

PubMed search terms

((((("joint"[Title/Abstract] AND "replacement*"[Title/Abstract]) OR ("hip"[Title/Abstract] AND "replacement*"[Title/Abstract]) OR ("knee"[Title/Abstract] AND "replacement*"[Title/Abstract]))) OR ("arthroplasty"[MeSH Terms] OR "arthroplasty"[Title/Abstract])) AND ("same-day"[Title/Abstract] OR "same day"[Title/Abstract] OR "short-stay"[Title/Abstract] OR "short stay"[Title/Abstract] OR "day-case"[Title/Abstract] OR "day case"[Title/Abstract] OR "out-patient"[Title/Abstract] OR "outpatient"[Title/Abstract] OR ambulatory[Title/Abstract]) AND ((review[Filter] OR systematicreview[Filter]) AND (2021:2025[pdat]))

=142 hits on 10 September 2025

Aboriginal health lens search terms

((((("joint"[Title/Abstract] AND "replacement*"[Title/Abstract]) OR ("hip"[Title/Abstract] AND "replacement*"[Title/Abstract]) OR ("knee"[Title/Abstract] AND "replacement*"[Title/Abstract]))) OR ("arthroplasty"[MeSH Terms] OR "arthroplasty"[Title/Abstract])) AND ("same-day"[Title/Abstract] OR "same day"[Title/Abstract] OR "short-stay"[Title/Abstract] OR "short stay"[Title/Abstract] OR "day-case"[Title/Abstract] OR "day case"[Title/Abstract] OR "out-patient"[Title/Abstract] OR "outpatient"[Title/Abstract] OR ambulatory[Title/Abstract]) AND ("aboriginal"[Title/Abstract] OR "indigenous"[Title/Abstract]) AND ("indigenous"[Title/Abstract] OR "aboriginal"[Title/Abstract] OR "first nation*"[Title/Abstract]) AND (2021:2025[pdat]))

= 0 hits on 10 November 2025

Google search terms

Same day or outpatient joint replacement surgery, guidelines, systematic reviews on 15 October 2025

Inclusion and exclusion criteria

Inclusion	Exclusion
Published in English Published since 2021 **P**opulation: patients undergoing joint replacement surgery (all joints) **I**ntervention: same-day surgery only (admitted and discharged within the 24-hour timeframe) **C**omparison: compared with inpatient/traditional protocols for joint replacement surgery **O**utcomes: re-operations, hospital readmissions, emergency department visits, rate or severity of adverse events, cost-effectiveness, patient-reported outcomes or any other relevant outcomes that are reported by the included studies **S**tudy types: – Review studies with systematic search strategy and methods – Grey literature such as guidelines and consensus statements **S**etting: – NSW, Australia and international jurisdictions with healthcare systems similar to NSW Health (UK, Canada, New Zealand, European/Asian high income countries with public healthcare systems)	Published prior to 2021 Studies that do not meet **PICOS** criteria Letters, comments, editorials, study protocols, conference abstracts

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Published January 2025. Next review 2031. ACI/D25/220-25 SHPN (ACI) 251147 ISBN 978-1-74231-326-9 [ACI_12038]