



2022 exceptional surveillance of hip fracture: management (NICE guideline CG124)

Surveillance report

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Surveillance decision

We will update [recommendation 1.6.3 in the NICE guideline on hip fracture](#).

An update of recommendation 1.6.4 is already underway and is not affected by this decision.

Reasons for the decision

The NICE guideline covers managing hip fracture in adults. It aims to improve care from the time people aged 18 and over are admitted to hospital through to when they return to the community. It also includes a section on surgical procedures.

During guideline surveillance conducted in 2019, 4 Cochrane reviews focussing on the surgical management of hip fractures were identified as being in development. Following the publication of these reviews, an exceptional review was conducted to determine the impact of the findings on the existing recommendations in the surgical procedures section of the guideline. Findings from the 4 Cochrane reviews directly related to several recommendations. Evidence in general supported most of the original recommendations, often mirroring findings from the original evidence review produced during the development of the guideline. However, there is new evidence from the Cochrane reviews on hemiarthroplasties (HAs) and total hip arthroplasties (THAs) that may affect recommendation 1.6.3. Stakeholder feedback also suggested that individual trials in the Cochrane reviews should be investigated further to explore possible subgroup effects between HAs and THAs for people with cognitive impairment. Therefore it was decided that the guideline should be updated to re-evaluate recommendation 1.6.3 and explore possible subgroup effects. A [separate update of recommendation 1.6.4 is already underway](#) and is not affected by this decision.

Reason for the exceptional review

To explore the impact of new evidence from 4 Cochrane reviews on the surgical management of hip fractures. These Cochrane reviews examined arthroplasties for hip fracture in adults (Lewis et al. 2022a), cephalomedullary nails versus extramedullary implants for extracapsular hip fractures in older adults (Lewis et al. 2022b), surgical interventions for treating extracapsular hip fractures in older adults (Lewis et al. 2022c),

and surgical interventions for treating intracapsular hip fractures in older adults (Lewis et al. 2022d).

Methods

The exceptional surveillance process consisted of:

- Considering new or updated Cochrane reviews.
- Feedback from topic experts.
- Assessing the new evidence and topic expert feedback against current recommendations to determine whether or not to update sections of the guideline, or the whole guideline.
- Consulting on the proposal with stakeholders.

We decided that full updated literature searches were not needed because the information we had from Cochrane reviews was enough to establish whether an update to the guideline was needed.

For further details about the process and the possible update decisions that are available, see [ensuring that published guidelines are current and accurate in developing NICE guidelines: the manual](#).

Feedback from topic experts

In this exceptional review we engaged with topic experts who were recruited to the NICE Centre for Guidelines Expert Advisers Panel to represent their specialty. We sent online questionnaires about the new evidence that is relevant to the guideline and received feedback from only 1 topic expert who is an orthopaedic trauma surgeon. Due to low response from topic experts, we decided to do a stakeholder consultation on the surveillance proposal to obtain wider stakeholder views.

Information considered in this exceptional surveillance review

Lewis et al. 2022a - Arthroplasties for hip fracture in adults

This recent systematic review and meta-analysis examined the effects of different designs, articulations, and fixation techniques of arthroplasties for treating hip fractures in adults. The review evaluated evidence for HAs and THAs.

For this study, CENTRAL, MEDLINE, Embase, 7 other databases and 1 trials register were searched with relevant terms up until July 2020. Studies were included if they were randomised controlled trials (RCTs) and quasi-RCTs comparing different arthroplasties (THAs and HAs inserted with and without cement, different articulation, sizes and types of prostheses) for treating fragility intracapsular hip fractures in older adults. Studies were included if they reported at least 1 of the following outcomes: activities of daily living, functional status, health-related quality of life (HRQoL), mobility within 4 months of surgery, early mortality and at 12 months after surgery, delirium, and unplanned return to theatre at the end of follow-up.

Cemented versus uncemented

Three sets of comparisons for cemented versus uncemented implants were reported. For THA, there was evidence of no difference in activities of daily living, functional status, HRQoL, mortality, unplanned return to theatre, pain, or adverse events between cemented and uncemented implants.

For HA, there was evidence of no difference in activities of daily living, delirium, unplanned return to theatre or adverse events between cemented and uncemented implants, although it was noted that fewer people had a pulmonary embolism when the HA was fixed without cement. Some evidence showed improved functional status, improved HRQoL, and improved mobility with cemented HA. For mortality at 12 months, moderate-certainty evidence showed that the risk of death at 12 months was reduced using cemented HA (risk ratio [RR] 0.86, 95% confidence interval [CI] 0.78 to 0.96, 15 studies, 3,727 participants). There was evidence of no difference in mortality by fixation technique at 5 years.

For mixed THA and HA comparisons, where participants were randomised to a cemented

or uncemented prosthesis but the selection of THA or HA was decided by the treating surgeon and patient, there was evidence of no difference in functional status, HRQoL at 24 months, 12 month or late mortality, or unplanned return to theatre between cemented and uncemented implants. There was evidence of no difference in adverse events but there were fewer intraoperative periprosthetic fractures when cement was used.

New evidence on cemented versus uncemented implants supports the current recommendation on using cemented implants for patients undergoing surgery with arthroplasty.

THA versus HA

There was evidence of no difference according to type of arthroplasty for the following outcomes: activities of daily living, delirium, unplanned return to theatre, discharge destination, HRQoL at 4 months or 9 years post-surgery, or mobility at 3 months, 12 months or 13 years after. There was evidence that HRQoL at 12 months was improved when a THA was used, but this was not likely to be a clinically important difference. For mortality, there was evidence of no difference in mortality by type of arthroplasty at 4 months, 12 months, or late follow-up. For functional status, there was evidence of slight improved functional status within 4 months of surgery, at 12 months, and at more than 24 months for people who received a THA, but none of these effects appeared to suggest a clinically important improvement. There was evidence of no difference in adverse events, although fewer participants had a blood transfusion when a HA was used, however it was noted that this analysis was from only 2 small studies.

New evidence on THA versus HA does not reflect the current strong recommendation to offer total hip replacement rather than hemiarthroplasty to patients with a displaced intracapsular hip fracture. New evidence does not suggest any significant clinical important benefit of THA compared to HA. Therefore the strength of this recommendation needs to be re-evaluated in light of the new evidence.

Comparisons not directly related to recommendations

The Cochrane review also reported comparisons for single versus multiple articulations of THA, short stem versus standard stem THA and bipolar versus unipolar HA. For all 3 comparisons, there is little evidence to suggest that 1 intervention was favoured over the other. One small single study reported fewer intraoperative periprosthetic fractures were noted when a short stem was used. Additionally, 1 study showed that mobility at 12

months was better when a unipolar HA was used.

Lewis et al. 2022b - Cephalomedullary nails versus extramedullary implants for extracapsular hip fractures in older adults

This systematic review and meta-analysis examined the effects of using cephalomedullary nails for treating extracapsular hip fractures. For this study, CENTRAL, MEDLINE, Embase and 5 other databases were searched with relevant terms up until July 2020. Additionally, clinical trials databases, conference proceedings and reference lists of retrieved articles were also searched. Studies were included if they were RCTs and quasi-RCTs comparing cephalomedullary nails with extramedullary implants for treating fragility extracapsular hip fractures in older adults. Studies were included if they reported at least 1 of the following outcomes: activities of daily living (ADL), delirium, functional status, HRQoL, mobility, mortality (both within 4 months of surgery and from 4 months onwards) and unplanned return to theatre for treating a complication resulting directly or indirectly from the primary procedure.

Extramedullary implants versus intramedullary nails

There was little evidence of difference between the 2 interventions for the outcomes of ADL, delirium, functional status at 4 and 12 months post-surgery, HRQoL at 12 months post-surgery, mortality at 4 and 12 months post-surgery, unplanned return to theatre and pain at 4 and 12 months post-surgery. Cephalomedullary nails were favoured over extramedullary implants for independent mobility within 4 months of surgery (RR 1.12, 95% CI 1.01 to 1.23; 7 studies, 719 participants) and a 10-metre walking speed test within 4 months of surgery (mean difference [MD] 0.70, 95% CI 0.63 to 0.77; 1 study, 80 participants). However, this was based on very low certainty evidence and data from a single study respectively.

Cephalomedullary nails were favoured over extramedullary implants for independent mobility after 12 months of surgery when using the Parker 1993 mobility scale (MD 0.48, 95% CI 0.10 to 0.87; 14 studies, 1,746 participants; I²=63%). There was little evidence of difference between the 2 interventions for the proportion of people who had independent mobility, the proportion of people who failed to regain their pre-fracture mobility, had sufficient ambulation to perform a Timed Up and Go (TUG) test, the reported time to complete a TUG test and the number of participants who remained in bed, or in a wheelchair.

The Cochrane review reported a significant increase in risk of intraoperative periprosthetic fractures when cephalomedullary nails were used compared to extramedullary implants (RR 2.94, 95% CI 1.65 to 5.24; 35 studies, 4,872 participants), as well as a significant increase in risk of postoperative periprosthetic fractures (RR 3.62, 95% CI 2.07 to 6.33; 46 studies, 7,021 participants). However, cephalomedullary nails were favoured over extramedullary implants for the outcomes non-union of fracture (RR 0.55, 95% CI 0.32 to 0.96; 40 studies, 4,959 participants).

New evidence on extramedullary implants versus intramedullary nails generally supports the recommendation of using extramedullary implants over intramedullary nails in patients with trochanteric fractures. Despite findings indicating that cephalomedullary nails showed improved mobility and walking speed, the certainty of evidence was low and very low making it unlikely to impact existing recommendations. Furthermore, the increased risk of non-union of fracture associated with cephalomedullary nails matched findings reported in the original development of the NICE guideline.

Lewis et al. 2022c - Surgical interventions for treating extracapsular hip fractures in older adults

This systematic review and network meta-analysis (NMA) assessed the relative effects (benefits and harms) of all surgical treatments used in the management of extracapsular hip fractures in older adults. The review evaluated evidence for internal and external fixation, arthroplasties and non-operative treatment. For the NMA, dynamic fixed angle plate was selected as a reference treatment against which other treatments were compared.

For this study, CENTRAL, MEDLINE, Embase, Web of Science and 5 other databases were searched with relevant terms up until July 2020. Studies were included if they were RCTs and quasi-RCTs comparing different treatments for fragility extracapsular hip fractures in older adults. Studies were included if they reported at least 1 of the following outcomes: mortality and HRQoL reported within 4 months, at 12 months or after 24 months, and unplanned return to theatre at the end of study follow-up.

A NMA was conducted using RR and standardised mean differences (SMDs) and their corresponding 95% CIs. A total of 9 nodes represented the interventions covered: dynamic fixed angle plates; static fixed angle plates; long cephalomedullary nails; short cephalomedullary nails; condylocephalic nails; external fixation; hemiarthroplasty; total hip arthroplasty; and non-operative treatment. Treatment hierarchies were calculated for each

outcome using the surface under the cumulative ranking curve (SUCRA). Rankings produced from SUCRA do not necessarily indicate there are statistically significant differences between treatments.

THA and HA versus other interventions

There was evidence of no clinically important difference between THA and HA compared to other interventions for any reported outcome. From the NMA, the SUCRA rankings suggested that external fixation and HA may have the greatest likelihood of being ranked higher for unplanned return to theatre, however there are significant overlaps of the 95% CIs.

As the Cochrane review only reported outcomes following extracapsular fractures it therefore provides no data to support or refute recommendation 1.6.3, which is only for patients with displaced intracapsular fracture.

THA versus HA

There was evidence of no clinically important difference between THA compared to HA for any outcome. The SUCRA rankings from the NMA indicated that external fixation and THA may have the greatest likelihood of being ranked higher, and long cephalomedullary nails and HA may have the lowest probability of reducing late mortality (reported as mortality at 12 months). However, the authors note that the 95% CIs of these comparisons of outcomes overlap significantly and so advise caution in drawing meaningful interpretations from the ranking of treatments in this NMA.

As the Cochrane review only reported outcomes following extracapsular fractures it therefore provides no data to support or refute recommendation 1.6.3, which is only for patients with displaced intracapsular fracture.

Extramedullary implants versus intramedullary nails

In the direct comparisons, there was evidence of a difference in early mortality between dynamic fixed angle plate versus long cephalomedullary nail (RR 1.80, 95% CI 1.02 to 3.18, favours fixed angle plate; 2 studies, 400 participants). There was evidence of no difference between any of the other treatments for this outcome. In the NMA, there was evidence of no difference between any of the treatments. Although the SUCRA rankings indicated that external fixation and static fixed-angle plate may have the greatest

likelihood of being ranked higher, and long and short cephalomedullary nails the lowest probability of reducing early mortality, the authors note that the 95% CIs of these comparisons of outcomes overlap significantly and so advise caution in drawing meaningful interpretations from the ranking of treatments in this NMA.

The authors indicate, it was not possible to conduct a NMA for HRQoL. In the direct comparisons, HRQoL at 12 months was improved when a dynamic fixed angle plate was used compared to short cephalomedullary nails, although when the estimate was converted, the difference between treatments was compatible with both no clinically important difference and plausible benefits (MD 3.68, 95% CI 0.94 to 6.42).

In the direct comparisons, there was evidence of a difference in unplanned return to theatre between dynamic fixed angle plate versus condylocephalic nail (RR 3.57, 95% CI 1.91 to 6.66, favour dynamic fixed angle plate; 7 studies, 996 participants). Further NMA supported these findings (RR 3.33, 95% CI 1.95 to 5.68, favours dynamic fixed angle plate; direct and indirect evidence). There was evidence of no difference between any other treatments for this outcome and no evidence to suggest any 1 treatment was either substantially better or worse than the other, although it was noted that the estimates had wide 95% CIs indicating substantial imprecision. NMA also revealed a difference in unplanned return to theatre between static fixed angle plate versus short cephalomedullary nail (RR 0.45, 95% CI 0.23 to 0.88, favours cephalomedullary nail; direct and indirect evidence).

Condylocephalic nail and static fixed angle plate appeared to have the lowest probability of reducing unplanned return to theatre. Effect estimates for these 2 treatments showed clinically important and statistically significant harms of both treatments compared with the comparator intervention. There was also evidence of the possibility of very substantial harms but also clinically important benefits with long cephalomedullary nails.

New evidence on extramedullary nails versus intramedullary implants supports the recommendation to use extramedullary implants such as a sliding hip screw in preference to an intramedullary nail in patients with trochanteric fractures above and including the lesser trochanter.

Comparisons not directly related to existing recommendations

NMA reported the following comparisons for the outcome unplanned return to theatre. Dynamic versus static fixed angle plate (RR 2.48, 95% CI 1.36 to 4.50, favours dynamic

fixed angle plate; direct and indirect evidence); static fixed angle plate versus external fixation (RR 0.04, 95% CI 0.00 to 0.80, favours external fixation; indirect evidence); short cephalomedullary nail versus condylocephalic nail (RR 2.98, 95% CI 1.59 to 5.60, favours cephalomedullary nail; indirect evidence) and condylocephalic nail versus external fixation (RR 0.03, 95% CI 0.00 to 0.59, favours external fixation; indirect evidence).

Lewis et al. 2022d - Surgical interventions for treating intracapsular hip fractures in older adults

This systematic review and NMA examined the effects of all surgical treatments used in the management of intracapsular hip fractures in older adults. For this study, CENTRAL, MEDLINE, Embase and 5 other databases were searched with relevant terms up until July 2020. Additionally, clinical trials databases, conference proceedings and reference lists of retrieved articles were also searched.

Studies were included if they were RCTs and quasi-RCTs comparing different treatments for fragility intracapsular hip fractures in older adults. Studies were included if they reported at least 1 of the following outcomes: mortality and HRQoL at 4 months, 12 months and after 24 months, and unplanned return to theatre at the end of study follow-up.

A NMA was conducted using RRs and SMDs and their corresponding 95% CIs. A total of 12 nodes represented the interventions covered: cemented modern unipolar HA, dynamic fixed angle plate, uncemented first-generation bipolar HA, uncemented modern bipolar HA, cemented modern bipolar HA, uncemented first-generation unipolar HA, uncemented modern unipolar HA, THA with single articulation, dual-mobility THA, pins, screws, and non-operative treatment. Treatment hierarchies were calculated for each outcome using the SUCRA. Rankings produced from SUCRA do not necessarily indicate there are statistically significant differences between treatments.

THA and HA versus other interventions

THA with single articulation and cemented and uncemented modern bipolar HA had the greatest likelihood of being ranked higher and therefore improving HRQoL at 12 months, although the certainty of evidence was very low. Arthroplasty treatments had greater likelihood of reducing unplanned return to theatre than internal fixation and non-operative interventions. THAs were also found to rank highest or joint highest out of all interventions for HRQoL at 4 months, 12 months and 24 months. There was evidence of no statistical difference between interventions for early mortality, but THA with single articulation and

pins were ranked higher, whilst uncemented bipolar HA was ranked lowest in the NMA. NMA revealed that dynamic fixed angle plates (RR 1.59, 95% CI 1.08 to 2.34; indirect evidence), pins (RR 0.64, 95% CI 0.43 to 0.95; direct and indirect evidence) and screws (RR 0.68, 95% CI 0.48 to 0.95; direct and indirect evidence) were all favoured over THA with single articulation for mortality at 12 months.

The higher ranking of THA with single articulation for HRQoL at 4 months aligns with the recommendation to offer replacement arthroplasty (total hip replacement or hemiarthroplasty) to patients with a displaced intracapsular hip fracture. However, the lower ranking for uncemented bipolar arthroplasty does not align with the recommendation. Furthermore, for mortality at 12 months, multiple interventions were favoured over THA with single articulation which does not support the current recommendation. However, due to the overlapping of 95% CIs within the network, it was too uncertain to be able to draw meaningful conclusions for which type of arthroplasty is most effective. Additionally, during the development of the guideline the committee determined mortality to be less important than other outcomes, as the interventions were not anticipated to have a significant impact on mortality.

Indirect evidence indicated that dual mobility THA showed clinically important improvements over screw treatment (SMD -1.57, 95% CI -2.62 to -0.53) and non-operative treatment (SMD -1.65, 95% CI -2.75 to -0.55) for early HRQoL. Additionally, cemented modern bipolar HA showed clinically important improvements over screw treatment (SMD -0.38, 95% CI -0.64 to -0.13; direct and indirect evidence) and non-operative treatment (SMD -0.46, 95% CI -0.89 to -0.04; indirect evidence) for early HRQoL. Similarly, THA with single articulation was also favoured over screw treatment (SMD -0.43, 95% CI -0.78 to -0.08; indirect evidence) and non-operative treatment (SMD -0.51, 95% CI -1.00 to -0.02, favours THA; indirect evidence) for early HRQoL.

Indirect evidence indicated that both cemented modern bipolar HA and THA with single articulation showed clinically important improvements over dynamic fixed angle plates for HRQoL at 12 months (SMD 0.56, 95% CI 0.08 to 1.05) and (SMD 0.59, 95% CI 0.11 to 1.07) respectively. Additionally, indirect evidence showed uncemented modern unipolar HA demonstrated a clinically important improvement over screw treatment (SMD 1.19, 95% CI 0.11 to 2.27) and non-operative treatment (SMD 1.15, 95% CI 0.03 to 2.27).

New evidence on HA and THA versus other interventions supports the recommendation to offer replacement arthroplasty (total hip replacement or hemiarthroplasty) to patients with a displaced intracapsular hip fracture.

Direct comparisons indicated that screw treatment resulted in more unplanned returns to theatre than cemented modern unipolar HA (RR 4.01, 95% CI 1.92 to 8.39; 3 studies, 310 participants), cemented modern bipolar HA (RR 4.35, 95% CI 2.67 to 7.07; 4 studies, 553 participants), uncemented first-generation unipolar HA (RR 5.85, 95% CI 3.47 to 9.87; 2 studies, 515 participants) and THA with single articulation (RR 3.11, 95% CI 2.23 to 4.35; 5 studies, 718 participants). Further NMA supported these findings.

Additionally, direct evidence showed both cemented modern unipolar HA (RR 10.66, 95% CI 3.85 to 29.50; 2 studies, 233 participants) and cemented modern bipolar HA (RR 0.32, 95% CI 0.15 to 0.65; 2 studies, 226 participants) were favoured over dynamic fixed angle plate for unplanned return to theatre. Following NMA, these findings were further supported.

NMA also indicated that uncemented modern bipolar HA (RR 0.41, 95% CI 0.17 to 0.99; indirect evidence), uncemented first-generation unipolar HA (RR 0.31, 95% CI 0.20 to 0.48; direct and indirect evidence) and THA with single articulation (RR 0.31, 95% CI 0.22 to 0.44, indirect evidence) were favoured over dynamic fixed angle plate for unplanned return to theatre. Furthermore, uncemented modern bipolar HA (RR 2.62, 95% CI 1.11 to 6.16; direct and indirect evidence) was favoured over screw treatment for unplanned return to theatre.

NMA also showed more unplanned returns to theatre occurred when pins were used compared to cemented modern unipolar HA (RR 4.16, 95% CI 2.53 to 6.84; indirect evidence), cemented modern bipolar HA (RR 2.96, 95% CI 1.95 to 4.50; indirect evidence), uncemented first-generation unipolar HA (RR 2.91, 95% CI 1.80 to 4.72; indirect evidence) and THA with single articulation (RR 2.86, 95% CI 1.93 to 4.26; direct and indirect evidence). Finally, indirect evidence showed more unplanned returns to theatre when non-operative therapy was compared to the same interventions: (RR 5.41, 95% CI 1.80 to 16.26, favours cemented modern unipolar HA); (RR 3.85, 95% CI 1.35 to 10.99, favours cemented modern bipolar HA); (RR 3.79, 95% CI 1.26 to 11.36, favours uncemented first-generation unipolar HA); (RR 3.73, 95% CI 1.29 to 10.74, favours THA).

New evidence on HA and THA versus other interventions further supports the recommendation to offer replacement arthroplasty (total hip replacement or hemiarthroplasty) to patients with a displaced intracapsular hip fracture.

THA versus HA

Indirect evidence indicated that dual-mobility THA showed clinically important improvements over cemented modern unipolar HA (SMD 1.24, 95% CI 0.21 to 2.28), uncemented modern bipolar HA (SMD 1.30, 95% CI 0.24 to 2.36), cemented modern bipolar HA (SMD 1.19, 95% CI 0.16 to 2.21) and uncemented modern unipolar HA (SMD 1.72, 95% CI 0.61 to 2.82) for early HRQoL. Furthermore, indirect evidence showed THA with single articulation showed clinically important improvement over cemented modern bipolar HA (SMD 0.66, 95% CI 0.05 to 1.28) and uncemented modern unipolar HA (SMD 1.48, 95% CI 0.30 to 2.66) for late HRQoL. There was evidence of no difference between any type of THA and any type of HA with regards to unplanned return to theatre. Direct evidence showed that cemented modern bipolar HA was favoured over THA with single articulation for mortality at 12 months (RR 1.72, 95% CI 1.06 to 2.78; 3 studies, 699 participants).

NMA indicated that uncemented first-generation unipolar HA (RR 1.53, 95% CI 1.04 to 2.25; indirect evidence), cemented modern unipolar HA (RR 1.62, 95% CI 1.13 to 2.32, direct and indirect evidence), and cemented modern bipolar HA (RR 1.42, 95% CI 1.01 to 2.00, direct and indirect evidence) were all favoured over THA with single articulation for mortality at 12 months.

Direct comparisons showed cemented modern bipolar HA was favoured over THA with single articulation for late mortality (RR 1.36, 95% CI 1.09 to 1.70; 2 studies, 401 participants).

New evidence on THA versus HA for HRQoL supports the recommendation to offer total hip replacement rather than hemiarthroplasty to patients with a displaced intracapsular hip fracture who meet specific criteria. Alternatively, new evidence for mortality outcomes do not support the recommendation. However, during the development of the guideline the committee determined mortality to be less important than other outcomes, as the interventions were not anticipated to have a significant impact on mortality.

Cemented HA versus uncemented HA

There was evidence of no difference between interventions for mortality at 4 months, however uncemented first-generation bipolar HA had the worst mean rank and lowest SUCRA values, suggesting this treatment had the lowest probability of reducing early mortality.

Direct and indirect evidence indicated cemented modern bipolar HA was favoured over

uncemented modern bipolar HA for mortality at 12 months (RR 0.78, 95% CI 0.61 to 1.00 and RR 1.37, 95% CI 1.02 to 1.85 respectively; 2 studies, 557 participants).

Indirect evidence indicated that cemented modern bipolar HA showed a clinically important improvement in HRQoL at 4 months compared to uncemented modern unipolar HA (SMD -0.53, 95% CI -1.01 to -0.05).

New evidence on cemented HA versus uncemented HA supports the recommendation to use cemented implants in patients undergoing surgery with arthroplasty.

Comparisons not directly related to recommendations

A direct comparison between dynamic fixed angle plate versus screw treatment indicated that screws were favoured for the outcome of late mortality (RR 0.39, 95% CI 0.17 to 0.91; 1 study, 73 participants; direct evidence). Furthermore, cemented modern bipolar HA was favoured over cemented modern unipolar HA for the same outcome (RR 0.79, 95% CI 0.65 to 0.95; direct and indirect evidence).

Direct evidence showed dual-mobility THA was favoured over THA with single articulation for early HRQoL (SMD 1.14, 95% CI 0.10 to 2.17; 1 study, 21 participants). These findings were further supported by NMA.

Uncemented modern bipolar HA was favoured over uncemented modern unipolar HA for both HRQoL at 12 months (SMD -1.43, 95% CI -2.33 to -0.53; 1 study, 28 participants; direct evidence) and late HRQoL (SMD -1.16, 95% CI -2.15 to -1.17; direct and indirect evidence).

Topic expert feedback

Feedback from 1 topic expert indicated that while the new evidence is unlikely to change the overall message from the existing guideline recommendations, it will influence the strength of the recommendations in several key areas. The topic expert suggested the guideline should therefore be updated.

Information considered in previous surveillance of this guideline

Surveillance was previously conducted in 2019 and the update of recommendation 1.6.4 is currently underway.

At the point of 2019 surveillance there was knowledge of upcoming publications that could potentially affect several recommendations in the surgical procedures section of the guideline. This included the WHiTE4 study, which looked at sliding hip screw versus X-Bolt Dynamic Plating System for trochanteric fractures and the suite of Cochrane reviews considered in this current exceptional review. Published data from the WHiTE 4 trial was captured within 1 of the Cochrane reviews (Lewis et al. 2022c). This suite of Cochrane reviews is assessed in this surveillance.

Information considered when developing the guideline

During guideline development, the goal of surgical procedures was to allow people with hip surgery to fully weight bear (without restriction) in the immediate postoperative period. It was recommended that arthroplasty (either THA or HA) should be offered to patients with displaced intracapsular fracture, with THA being favoured for those with greater medical fitness. Both HA and THA offered a significant reduction in risk of reoperation with THA showing improved functional status and quality of life (QoL) over HA and internal fixation. The overall quality of the evidence base for these recommendations was moderate to low. Additionally, proven femoral stem design rather than Austin Moore or Thompson stems for arthroplasties were recommended due to lower revision rates. Stems with higher failure rates require more reoperations, which increases costs and reduces patient QoL. The important outcomes considered for these recommendations were number of reoperations, functional status, pain and QoL.

Cemented implants were recommended for patients undergoing arthroplasty, with the cost of new designs of cemented implants shown to be lower than that of uncemented implants. As the clinical evidence did not show any advantage of uncemented over cemented arthroplasty in the newer design, and as the cost of new designs of cemented implants was shown to be lower than that of uncemented implants, the committee considered cost impact of cemented implants based on the outcomes reported, though these are not statistically significant. Mortality, functional status, QoL, pain, requirement

for reoperation, non-healing and requirement for surgical revision, total length of stay (hospital and rehabilitation) being considered important outcomes. Consideration of an anterolateral approach in favour of a posterior approach when inserting a hemiarthroplasty was mainly based on outcomes on functional status, reoperation rate, and QoL. Very low quality evidence indicated a higher dislocation rate using a posterior approach and lower impaired mobility using an anterolateral approach.

The use of extramedullary implants over an intramedullary nail in patients with trochanteric fractures was based on the outcomes early and late mortality, re-operation, postoperative fracture, length of hospital stay and post fracture mobility. High quality evidence demonstrated a higher re-operation rate with intramedullary devices due to an increased incidence of periprosthetic fracture. However, it was recommended that an intramedullary nail be used to treat patients with subthorchanteric fractures, with the most important outcomes considered being functional status, pain, requirement for reoperations and wound healing complications. Despite intramedullary nails being more expensive than extramedullary implants, the latter lead to an increase in non-union of fracture and consequently increased re-operation.

Other relevant NICE guidance

The following 2 pieces of NICE interventional procedures guidance are currently in development:

- Supercapsular percutaneously assisted total hip arthroplasty for osteoarthritis
- Total hip arthroplasty using the superpath approach for osteoarthritis.

Stakeholder consultation

We received consultation responses from 5 stakeholders, which included a NHS hospital trust, royal college, professional association/society and Cochrane review group.

See [appendix A for stakeholder consultation comments and our responses](#).

Of the 5 stakeholders, 3 agreed with our initial proposal not to update section 1.6 of the guideline, 2 disagreed. Of the 2 stakeholders who disagreed, information was provided regarding the interpretation of the evidence described in the surveillance review. They commented that although the evidence suggests THA is slightly more beneficial compared

to HA in a few outcomes, none of these effects meet clinical important differences. Therefore, the evidence no longer supports the current strong recommendation of THA over HA for people with displaced intracapsular fracture. The stakeholders also commented that this is reflected in current practice, and that based on the National Hip Fracture Database, there is only 25.3% compliance across England and Wales in offering THA over HA for people with displaced intracapsular fracture who were able to walk independently out of doors with no more than the use of a stick, and are not cognitively impaired, and are medically fit for anaesthesia and the procedure.

One stakeholder also commented that although it is not explicitly reported in the Cochrane reviews, the original data contained within those reviews includes people with and without cognitive impairment, and that this could be a relevant subgroup who may benefit from different surgical procedures. People with cognitive impairment have been identified as a subgroup who may experience health inequalities in this surveillance review.

See [ensuring that published guidelines are current and accurate in developing NICE guidelines: the manual](#) for more details on our consultation processes.

Equalities

The topic expert raised that existing studies tend to exclude people with cognitive impairment, who are a large sub-group of patients suffering hip fracture. Although we did not identify any relevant reported outcomes on this issue from the 4 Cochrane reviews, a stakeholder has informed us during consultation that they contained original data from included studies that could be further explored.

Overall proposal

This exceptional review was triggered by 4 recent Cochrane systematic reviews and meta-analyses that examined surgical interventions for hip fractures in older adults. These studies' findings in general support most of the existing recommendations in the surgical procedures section of the NICE guideline apart from recommendation 1.6.3, and therefore we propose this needs to be reviewed. New evidence on THA versus HA suggests that there is no significant clinically important benefit of THA compared to HA, which no longer supports the current strong recommendation to offer total hip replacement rather than hemiarthroplasty to patients with a displaced intracapsular hip fractures. During consultation, stakeholders also raised that the original data contained in the Cochrane

reviews could be further explored to address possible subgroup effects in people with cognitive impairment, which is identified by this surveillance review as a health inequalities issue.

The Cochrane reviews also suggest that the use of cemented implants for patients who had undergone HA was favoured over uncemented implants for mortality at 12 months, and cephalomedullary nails showed an increased risk. The Cochrane reviews further reported a significant increase of intraoperative and postoperative periprosthetic fractures compared to extramedullary implants. However, when specifically treating subtrochanteric, extramedullary implants showed an increased risk in non-union of fracture. These findings matched evidence identified in the original development of the guideline. Based on these findings, it was determined that only recommendation 1.6.3 will be updated.

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