HealthTech Programme

Bed frames for adults in acute medical or surgical hospital wards: Late-stage assessment

Consultation comments received on draft guidance

Table 1: General comments on the draft recommendations

Comment no.	Consultee	Section no.	Comment	NICE response
1.	Consultee 2	Not specified	Has all of the relevant evidence been taken into account? Yes. A comprehensive and balanced view has been taken in respect of the available evidence to better inform the decision making process. Simple and easy to follow , it gives a clear steer on what features should be considered before purchasing	Thank you for your comment.
2.	Consultee 2	Not specified	Are the summaries of clinical and cost effectiveness reasonable interpretations of the evidence? Yes. The document give a very well reasoned overview of EPB technology and draws reasonable conclusion as the relative benefits as well as Cost and Cost savings. From this, the recommendations are sound and justified	Thank you for your comment.

3.	Consultee 2	Not specified	Are the recommendations sound and a suitable basis for guidance to the NHS? Yes. I think that document has the potential to be the first comprehensive guide to purchasing EPB technology.	Thank you for your comment.
4.	Consultee 2	Not specified	Are there any equality issues that need special consideration and are not covered in the medical technology consultation document? None that I can see	Thank you for your comment.
5.	Consultee 1 Medstrom	Not specified	Whilst acknowledging, 2.2 "Bed frames for adults in medical or surgical hospital wards: late-stage assessment" the narrowing of this scope to only medical and surgical wards means it does not capture areas of hospital that may use hospital beds and the LSA would therefore have relevance.	Thank you for your comment, which the committee has considered. The settings included in this assessment are outlined in section 1.1 of the final scope document. The settings of focus are acute medical and surgical wards.
6.	Consultee 3 Baxter	1	The recommendations focus almost exclusively on patient outcomes. Although the draft recommendations note that preferences of multidisciplinary teams and staff training needs should be considered, there is nothing specifically related to outcomes for healthcare professionals including factors such as ease of use and injury prevention, and wider workflow considerations. Baxter acknowledges that there is limited evidence for many of the bed features. However, it seems as though the lack of evidence has led to inconsistent recommendations, having been used to justify a strong ‘do not do’	Thank you for your comment, which the committee has considered. It was acknowledged that many of the features included in the guidance may impact caregiver and other non-patient user outcomes.

			wording for some features, while others receive a more cautious approach. This inconsistency may lead to variability in interpretation, decision making, and implementation across trusts. The recommendations also appear to overlook the growing importance of connectivity and digital integration in modern healthcare environments. By not considering features that enable digital integration with wider hospital systems, the guidance risks stifling innovation and promoting short-term procurement decisions that do not reflect the future direction of NHS care delivery. Hospital beds are long-term assets, often used over many years and across multiple care settings. As the NHS increasingly adopts digital tools, the exclusion or lack recognition of connectivity as a relevant bed feature fails to account for how technology-enabled features can enhance patient safety, operational efficiency, and long-term value. In effect, the recommendations may inadvertently discourage trusts from investing in forward-compatible infrastructure, instead reinforcing a view of hospital beds as static, purely mechanical devices. This risks leaving trusts underprepared for future models of care and undermines the ambition for a more digitally integrated NHS. The procurement of beds should be informed by clinical effectiveness, patient safety and infrastructure suitability. It should not be treated as a routine furniture purchase, but rather as a decision based on evidence, patient need, and the ability to support high quality care delivery.	

Table 2: Recommendation 1.1 of the draft guidance

Comment no.	Consultee	Section no.	Comment	NICE response
7.	Consultee 1 Medstrom	1.1 1 Recommendations	Guidance on where the low height should be measured on must be provided. Patients exit beds from the edge of the bed side. Historically some manufacturers detail low height from the middle of the bed as this is lower than the edge of the bed - guidance would ensure that it is clear where the low height should be measured from.	Thank you for your comment, which the committee has considered. The committee acknowledged that there is no evidence on what is the optimal low bed height for reducing patient falls (see section 3.12 of the final guidance document).
8.	Consultee 3 Baxter	1.1 1 Recommendations	The features outlined in the recommendation are currently considered standard on all bed frames, the recommendation therefore consolidates this information for decision makers.	Thank you for your comment.

Table 3: Recommendation 1.2 of the draft guidance

Comment no.	Consultee	Section no.	Comment	NICE response
9.	Consultee 3 Baxter	1.2 1 Recommendations	Strength of recommendation to be reduced Baxter suggests that the wording should be similar to that used in section	Thank you for your comment, which the committee has considered. The committee agreed that the limited evidence available for turn assistance, power drive and connectivity

			1.3 or that recommendation 1.2 and 1.3 could be combined into a single recommendation that acknowledges a lack of evidence for price variations for all features covered by these two draft recommendations. There is not enough evidence to determine whether additional costs for features such as turn assist, power drive and connectivity are justified 'Do not do' wording in recommendations is generally perceived to be the strongest negative recommendation. Given the lack of evidence to justify such strong recommendation Baxter is concerned this will lead to procurement decisions which may prevent purchase of beds with these features on a cost basis only and prevent bed frames with such features being purchased where they may be necessary and beneficial to clinical and healthcare teams, in particular where future proofing may be a consideration. For example, when considering connectivity features, while the company appreciates that there was not much appetite for connectivity features during development, the company notes that • Only a small number of healthcare professionals were consulted	features is not strong enough to determine that these features are not worth paying more for. The committee has updated its recommendation to say "there is not enough evidence to determine whether price variation is justified between bed frames for other features, including: • in-built weighing scales • or bed exit alarms • turn assistance (for turning or repositioning the patient) • power drive (motorised to assist with moving the bed) • connectivity (between the bed and other systems or appliances)" See recommendation 1.2 of the final guidance. It agreed that more evidence is needed to show if price variation between bed frames for use in acute medical or surgical hospital wards with these features can be justified (see the "what information is needed" section of the final guidance for the outcomes for data collection).

			representing very limited evidence that may not be generalisable to the wider NHS setting • Digital transformation programmes are a key focus for the NHS and connectivity capability of bed frames will play a role in facilitating/supporting this. Further, in the 'What this means' section of the document it states '…some features are more likely than others to increase the cost of a bed frame. These include bed exit alarms, in-built weighing scales and features enabling connectivity…'. This text suggests that it would be expected that some features would result in an increased cost which appears to contradict the draft recommendation. Additionally, the strength of the wording is considered to be counter to NICE methods for writing recommendations (NICE PMG6), which state that 'Do not do' wording should be used in situations where there is confidence that they will not be of sufficient benefit for most patients. While this guidance is contained within the Clinical Guidelines methods guide, no equivalent information has been identified in the MedTech manual and the company notes that clinicians and healthcare teams will be very familiar with the	

			wording used in clinical guidelines and apply the same interpretation in this setting. Furthermore, the 'simply because' wording used in the recommendation is ambiguous and problematic. This use of language implies that the features listed in the recommendation lack clinical or operational value, without clearly defining a criteria for their exclusion. In sections 3.15, 3.16 and 3.17 the concluding statement is '…concluded that price variations between bed frames for use in medical or surgical hospital wards because of XXX feature are not justified. So, NHS trusts should not pay more for a bed frame that has this feature.' Whereas for sections 3.18 and 3.19 the concluding statement is '…concluded that there is not enough evidence to determine whether price variations between bed frames for use in medical or surgical hospital wards because of XXX are justified.' On balance, it is not clear how the conclusion that Trusts should not pay more for some features has been reached? A more nuanced approach would acknowledge that the absence of	

			evidence is not evidence of absence, and that feature-related value should be evaluated contextually, not dismissed outright.	
10.	Consultee 3 Baxter	1.5 What information is needed	This section appears limited to evidence generation relating to patient specific features and omits any focus on bed features which may be beneficial to the clinical and wider healthcare teams. Additionally, as noted previously, there is some text included in this section which may be seen to contradict the wording in recommendation 1.2.There are features of bed frames that may have an impact on healthcare providers that would benefit from an evidence generation plan. For example: • Turn assist and power drive features may help reduce injury to the healthcare team	Thank you for your comment, which the committee has considered. Please see the response to comment 9.
11.	Consultee 3 Baxter	1.5 Why the committee made these recommendations	The committee discussion section notes that reason procurement teams should not pay more for turn assist and power drive features is because they are not widely available and are less important to users. This does not seem to be a valid reason because it implies that the only reason Trusts should not pay more is due to availability/importance to users rather	Thank you for your comment, which the committee has considered. Please see the response to comment 9.

			than because there is evidence to support the decision that additional costs for these features is justified. Where these features may be an important consideration based on specific Trust needs this may prevent the purchase of beds with these features which in turn will prevent any evidence generation to potentially address the existing uncertainty of the value of these features.	
12.	Consultee 3 Baxter	1.5 Procurement and commissioning considerations	While connectivity is highlighted (along with bed exit alarms and in-built weighing scales) as a feature most likely to increase costs, no mention is made of turn assist or power drive features potentially increasing the cost. It is not clear how these features have been specifically noted in recommendation 1.2.	Thank you for your comment, which the committee has considered. Please see the response to comment 9.
13.	Consultee 3 Baxter	3.15 Turn assistance 3.16 Power drive 3.17 Connectivity features	As mentioned in the comment of recommendation 1.2, the strength of this recommendation should be reduced The company suggests that the wording should be similar to that used in section 1.3 and in sections 3.18 and 3.19 There is not enough evidence to determine whether additional costs for features such as turn assist, power	Thank you for your comment, which the committee has considered. Please see the response to comment 9.

			drive and connectivity are justified. Please see justification described for Section 1.2.	
14.	Consultee 3 Baxter	3.9 Some features may drive bed frame cost	This section makes no specific mention of the power drive or turn assist features. It also states that cost differences cannot solely be attributed to a single bed feature and that there may be other confounding factors contributing. The company considers this to support previous comments on the strength of wording of recommendation 1.2. Recommendation 1.2 focuses on specific bed frame features but there is little evidence/support in the detail of the document to note why these particular features have been singled out	Thank you for your comment, which the committee has considered. Please see the response to comment 9.

Table 4: Features without evidence in the review

Comment no.	Consultee	Section no.	Comment	NICE response
15.	Consultee 3 Baxter	3.20 Features without evidence identified in the evidence review	Revise the statement to avoid contradicting recommendations. The statement "Despite the lack of evidence, NHS trusts may choose to purchase bed frames... if they are perceived as important" appears inconsistent with the broader position taken throughout the guidance, where the absence of evidence is repeatedly cited as a reason not to recommend certain features. This creates a contradiction: on the one hand, the guidance discourages consideration of features without robust evidence, yet on the other, it implicitly permits Trusts to proceed with purchasing those same features based on perceived importance. This mixed messaging undermines the clarity and authority of the recommendations. If a lack of evidence is deemed sufficient to rule out certain features elsewhere, it is logically inconsistent to suggest that the same lack of evidence can be overlooked simply due to subjective perceptions at the local level. Such ambiguity risks introducing variation in interpretation,	Thank you for your comment, which the committee has considered. Please see the response to comment 9 to see the changes that have been made to recommendation 1.2. The wording of section 3.20 of the final guidance has been updated for clarity, noting that for features without evidence in the review “There is no evidence to determine whether price variation is justified between bed frames for these features”.

			eroding the standardisation NICE guidance is intended to support, and placing the burden of judgment onto individual trusts without a clear evidence base. In short, the statement weakens the overall coherence of the recommendations and may inadvertently create confusion or inconsistency in procurement decisions across the NHS	

Table 5: Recommendation 1.3 of the draft guidance

Comment no.	Consultee	Section no.	Comment	NICE response
16.	Consultee 3 Baxter	1.3 1 Recommendations	This recommendation offers a cautious approach by highlighting the lack of evidence while allowing decision makers to assess the value of some bed frame features and make pragmatic decisions. This approach will hopefully support real world evidence generation.	Thank you for your comment.

Table 6: Recommendation 1.4 of the draft guidance

Comment no.	Consultee	Section no.	Comment	NICE response
17.	Consultee 3	Baxter 1.4 1 Recommendations	Suggest some additions to the list of bullet points • Digital integration and future-proofing • Supply chain stability and availability; consistency of manufacturer delivery and repair timelines • Warranty and service agreement terms; the scope and cost of the service contracts should be considered • Sustainability and environmental impact	Thank you for your comment, which the committee has considered. The list of points to consider has been updated (see recommendation 1.3 in the final guidance).

			• Acuity of patients in medical and surgical wards Whilst the recommendation provides a starting point, the listed factors are not sufficiently comprehensive. Important features, including those we suggest, are notably absent. Without a more detailed criteria, procurement decisions risk overlooking critical aspects of usability and long-term value. Additionally, the phrase "accounting for" is vague and open to interpretation, potentially leading to inconsistent application across trusts. A clearer, more inclusive framework is needed to ensure decisions align with clinical needs, operational priorities, and potential future NHS strategies. The changing landscape in terms of an ageing population, increased comorbidity, frailty, novel therapies and more complex surgery, means that services must adapt if they are to deliver the right care, to the right patient, in the right place and at the right time. Patients are becoming sicker, requiring more frequent or continuous monitoring and interventions and, although the patients do not require organ support, they are referred to High Dependency Units for closer monitoring. Often, due to lack of capacity, they remain on general ward. Furthermore, older patients with complex	

			comorbidities increasingly have escalation plans of treatment, often appropriately precluding the escalation to Critical Care areas, adding to the workload on a general ward	

Table 7: Procurement and commissioning considerations

Comment no.	Consultee	Section no.	Comment	NICE response
18.	Consultee 1 Medstrom	Not specified	Yes, agree interpretations of the evidence examined are reasonable. Advantages of standardisation does not appear to have been considered and is a human factor that is suggested to warrant consideration by CQC “It also needs to be easier for trust staff to do the right thing. Greater standardisation, not just in terms of clinical protocols, but also for things like equipment and processes in hospitals, should be considered. While standardisation will not work for everything, there is scope to look again at where there can be a more consistent approach that makes it easier for staff to embed a clear plan, rather than ask them to think through how something should be done when they have limited time to do	Thank you for your comment, which the committee has considered. Usability and local standardisation of bed frames within a hospital were considered by committee, and have been added to recommendation 1.3 and the procurement and commissioning considerations in the final guidance.

			this” 20181224_openingthedoor_report.pdf (cqc.org.uk) CQC (2018) page 43	
19.	Consultee 3 Baxter	1.5 Procurement and commissioning considerations	Consider the wording in this section as it relates to the draft recommendations. Procurement and commissioning section includes the points: • Some features of bed frames for use in medical or surgical wards may be more suited to one NHS trust than another. For example, hospitals on large sites may benefit from features that help with moving beds across the site. • NHS trusts should not expect to pay more to procure bed frames with the features that are identified as standard for bed frames for use in medical or surgical hospital wards This suggests that for some hospitals, a feature like power drive might be useful for moving beds across large sites. However, the wording in this section, considered against the wording of recommendation 1.2, may indicate that such a feature should be considered a standard feature and be provided at no additional cost.	
20.	Consultee 1 Medstrom	1.5 1 Recommendations	If more than one bed frame is applicable, shouldn't standardisation to one type of bed frame be considered? Please see previous comment from consultation process with quote/guidance from CQC ""“It also needs to be easier for trust staff to do the right thing. Greater standardisation, not just in terms of	Thank you for your comment, which the committee has considered. Usability and local standardisation of bed frames within a hospital were considered by committee, and have been added to recommendation 1.3 and the procurement and commissioning considerations in the final guidance.

			clinical protocols, but also for things like equipment and processes in hospitals, should be considered. While standardisation will not work for everything, there is scope to look again at where there can be a more consistent approach that makes it easier for staff to embed a clear plan, rather than ask them to think through how something should be done when they have limited time to do this" 20181224_openingthedoor_report.pdf (cqc.org.uk) CQC(2018) page 43	
21.	Consultee 1 Medstrom	2.6 2 The technologies	Please see previous comment from consultation process with quote/guidance from CQC ""It also needs to be easier for trust staff to do the right thing. Greater standardisation, not just in terms of clinical protocols, but also for things like equipment and processes in hospitals, should be considered. While standardisation will not work for everything, there is scope to look again at where there can be a more consistent approach that makes it easier for staff to embed a clear plan, rather than ask them to think through how something should be done when they have limited time to do this" 20181224_openingthedoor_report.pdf (cqc.org.uk) CQC (2018) page 43	Thank you for your comment, which the committee has considered. Usability and local standardisation of bed frames within a hospital were considered by committee, and have been added to recommendation 1.3 and the procurement and commissioning considerations in the final guidance.
22.	Consultee 1 Medstrom	1.5 Considerations for healthcare professionals	Bed frames are available and are successfully used in practice that comply with BS EN 60601-2-52 and EN 50637, where these are available for use with more	Thank you for your comment, which the committee has considered. This information has been added to section 2.5 of the final guidance.

			than one patient group, cost savings can be yielded as different beds are not required and as there is standardisation there are less risks due to training issues/familiarity. Beds are instantly available for the patient need. Spare parts etc are the same yielding further cost savings and efficiencies.	
23.	Consultee 1 Medstrom	2.5 2 The technologies	Should this section add that some Trusts may need to consider EN 50637: 2017 for children and atypical anatomy where beds are used as standard across clinical specialities?	Thank you for your comment, which the committee has considered. This information has been added to section 2.5 of the final guidance.
24.	Consultee 1 Medstrom	2.5 2 The technologies	Whilst acknowledging the scope of this exercise and need to limit it; should this section add that some Trusts may need to consider EN 50637: 2017 for children and atypical anatomy where beds are used as standard across clinical specialities?	Thank you for your comment, which the committee has considered. This information has been added to section 2.5 of the final guidance.
25.	Consultee 1 Medstrom	3.21 Equality considerations	Beds that have been designed for use in both environments have been designed and are being successfully used in the NHS.	Thank you for your comment. While some bed frame models may be used in different care settings, the settings of focus for this assessment are as per section 1.1 of the final scope document.
26.	Consultee 3 Baxter	2.6 2 The technologies	It is not clear whether this section is describing the existing procurement processes within the NHS or whether it is outlining a process by which bed frames should be procured. If the later, the wording is ambiguous and not aligned with the recommendations.	Thank you for your comment. The purpose of this assessment was to observe which bed frame features should be considered during a bed frame procurement exercise within a Trust and may be worth paying more for, rather than to outline the process by which a procurement exercise should be

			The phrase '…procurement exercise that considers the views and preferences of different user groups' is vague and lacks clear definition. Without a standardised process or guidance on how this 'exercise' should be conducted, there is a high risk of variability in how trusts interpret and apply it. Some may conduct detailed, evidence-informed evaluations with multidisciplinary input, while others may rely on informal or inconsistent feedback. This ambiguity not only undermines these HTE10050 recommendations and consistency across the NHS, but may also compromise the transparency, equity, and clinical appropriateness of procurement decisions. Clear and defined criteria are needed to ensure that such decisions are both robust and comparable across trusts. In addition, use of the phrase '…a standard bed frame model…' may lead to misinterpretation when considered against recommendation 1.1 which outlines features that should be considered standard. Consider removing 'standard' from this section and adding additional text to note that the starting point should be a bedframe with the standard features with additional features considered based on the needs of a range of patients, healthcare professionals and other users.	conducted. The "procurement and commissioning considerations" included in the guidance are intended to support those leading/taking part in bed frame procurement exercises without restricting the approach that is taken during such exercises. The word "standard" has been removed from this section.

Table 8: Recommendation 1.5 of the draft guidance

Comment no.	Consultee	Section no.	Comment	NICE response
27.	Consultee 1 Medstrom	Not specified	Yes. Our only concern is regarding "cheapest option" for two reasons. Firstly, the quality of component parts used (which will result in durability of product over lifespan) will affect price. Will this statement risk poorer quality components in a product that is put through considerable wear and tear during its lifespan in order to provide the "cheapest" standard offering? This will affect lifespan, repairs, NHS net zero aims/green ambitions, service delivery if products need to be removed and repaired frequently, raised service costs, need for spare parts etc. Secondly, where a bed can be used across several clinical specialities or settings thereby providing standardisation this should be considered: “It also needs to be easier for trust staff to do the right thing. Greater standardisation, not just in terms of clinical protocols, but also for things like equipment and processes in hospitals, should be considered. While standardisation will not work for everything, there is scope to look again	Thank you for your comment, which the committee has considered. The recommendation to choose the least expensive bed frame is to be considered only if, after following the other recommendations, there is more than 1 bed frame option remaining to choose between. The importance of usability and standardisation was acknowledged by the committee. Please see recommendation 1.3 and the procurement and commissioning considerations in the final guidance.

			at where there can be a more consistent approach that makes it easier for staff to embed a clear plan, rather than ask them to think through how something should be done when they have limited time to do this" 20181224_openingthedoor_report.pdf (cqc.org.uk) CQC (2018)page 43	
28.	Consultee 3 Baxter	1.5 1 Recommendations	Suggest editing the wording to add clarity to the recommendation. The draft recommendation as written may be overly simplistic and lacks clarity around what is meant by 'least expensive'. Does least expensive relate to purchase cost or should it take into account factors such as compatibility with existing infrastructure, maintenance, expected longevity, warranty and service agreements etc. There is a risk that this draft recommendation would be interpreted by procurement to buy the cheapest suitable bedframe based solely on purchase cost.	Thank you for your comment, which the committee has considered. The recommendation to choose the least expensive bed frame is to be followed only if, after following the other recommendations, there is more than 1 bed frame option remaining to choose between. This recommendation is not intended to restrict bed frame options to only the cheapest without considering factors relating to user preference, resource use, sustainability, etc. Please see recommendations 1.3 and 1.4.
29.	Consultee 1 Medstrom	1.5 Procurement and commissioning considerations	The quality of component parts used (which will result in durability of product over lifespan) will affect price. Will this statement risk poorer quality components in a product that is put through considerable wear and tear during its lifespan in order to provide the "cheapest" standard offering? This will	Thank you for your comment, which the committee has considered. Please see the response to comment 28.

			affect lifespan, repairs, NHS net zero aims/green ambitions, service delivery if products need to be removed and repaired frequently, raised service costs, need for spare parts etc	
30.	Consultee 1 Medstrom	1.5 1 Recommendations	In addition asking for the "cheapest" affects lifetime cost of product. The cheapest to buy could be considerably more expensive over the lifetime of the bed. The quality of component parts used (which will result in durability of product over lifespan) will affect price. Will this statement risk poorer quality components in a product that is put through considerable wear and tear during its lifespan in order to provide the "cheapest" standard offering? This will affect lifespan, repairs, NHS net zero aims/green ambitions, service delivery if products need to be removed and repaired frequently, raised service costs, need for spare parts etc.	Thank you for your comment, which the committee has considered. Please see the response to comment 28.

Table 9: Maintenance and repair

Comment no.	Consultee	Section no.	Comment	NICE response
31.	Consultee 1 Medstrom	3.8 Repair costs	Integral side rails or footboards that have electrical functions built in can be both costly to repair (exceeding 30 minutes), often needing to be replaced off site, removing the bedframe from the ward area. With long delays on global spare parts, this can be costly and attribute to delayed down time of equipment. Semi integrated controls and modular parts enable beds to be repaired on or near the ward area with a quicker turnaround. UK based manufacturers should also be considered to reduce lead times of parts.	Thank you for your comment, which the committee has considered.
32.	Consultee 3 Baxter	3.8 Repair costs	The bed frame itself, not related to a specific feature, was the only exception where a large repair cost was reported because the bed frame needed to be replaced.	Thank you for your comment, which the committee has considered. The EAG noted that the operational impact of a bed being out of service (particularly in high-demand wards) is an important consideration and may go beyond direct repair costs. However, feedback from NHS trusts and service providers suggested that while repairs that render a bed unusable can be costly, they are events are extremely rare. There was also limited data to inform these impacts hence these were not quantified aspects in the model.

33.	Consultee 3 Baxter	3.8 Repair costs	The committee's conclusion that 'repair time for these features is not likely to be a key driver of cost' overlooks the practical and operational implications of bed downtime in medical or surgical hospital wards, especially when considering the standard features outlined in recommendation 1.1. Every day a bed is unavailable, or out of service, can lead to delayed admissions, bed management challenges, and increased pressure on clinical staff and hospital flow. For example, while the individual repair cost of a brake system or steering mechanism may seem minor in isolation, the broader impact of a bed being out of service, particularly in high-demand wards, is significant. Moreover, many of the listed features, such as low-height adjustment, patient migration prevention, and advanced steering systems, are integral to both patient safety and staff usability. When these components fail, the bed may become non-compliant with internal safety protocols or trust policies, effectively rendering the bed unusable even if still technically functional. This is particularly relevant for falls prevention or safe manual handling, where policy mandates often depend on fully functional features. Additionally, assuming that repair time is not a major cost driver also fails to account for indirect costs, such as: • Additional staffing or porter time due to less manoeuvrable beds • Increased risk of injury to staff or patients if temporary workarounds are used Bed frame repair time should be considered a critical	Thank you for your comment, which the committee has considered. The EAG noted that the operational impact of a bed being out of service (particularly in high-demand wards) is an important consideration and may go beyond direct repair costs. However, feedback from NHS trusts and service providers suggested that while repairs that render a bed unusable can be costly, they are events are extremely rare. There was also limited data to inform these impacts hence these were not quantified aspects in the model.

			factor in procurement decisions, not just in terms of direct financial cost, but for its downstream effects on bed availability, patient flow, safety, and staff efficiency. Ignoring this may lead to underestimating the true operational value of reliability and ease of maintenance in bed frame features.	

Table 10: Evidence and economic evaluation

Comment no.	Consultee	Section no.	Comment	NICE response
34.	Consultee 1 Medstrom	Not specified	Barker, A. et al (2013). Reducing serious fall-related injuries in acute hospitals: are low-low beds a critical success factor? Journal of Advanced Nursing 69(1):112-21. This paper did not appear to be included in those scoped for falls related data. Kings Fund attribute £2.7bn due to falls to NHS in 2013 https://www.kingsfund.org.uk/insight-and-analysis/reports/system-wide-costs-falls-older-people-torbay; https://www.nhs.uk/scorecard/8135. - this cost must have increased. Falls attributed costs appear disproportionately low. Are litigation costs to NHS included in this amount? Regarding pressure ulcers, this figure also seems disproportionally low please see https://societyoftissueviability.org/whats-	Thank you for your comment, which the committee has considered. The committee were content with the data sources used by the EAG in their exploratory modelling, noting that sensitivity analysis was done to account for uncertainty. The EAG noted that the source used for the number of falls per 1,000 bed days was the National audit of inpatient falls, 2015 and is more recent than the data in the Barker 2013 paper. The EAG consider the data used to be appropriate though they acknowledge there is uncertainty around this value and did therefore explore the prevalence of falls in sensitivity analysis.

			on/fundamentals-of-pressure-ulcer-care-20-feb/. Litigation adds to this cost to the NHS, please see NHS Resolution. 2024. Freedom of Information Request# 6883. [online] https://resolution.nhs.uk/foi-disclosure-log/pressure-sores-foi_6883/. Accessed December 2024. The cost of pressure ulcers are well evidenced https://www.gov.uk/government/publications/pressure-ulcers-productivity-calculator; the highest reported sites for pressure ulcers are the sacrum and heels; and there is consensus that patient migration causes shear, friction and skin damage, so this cost appears low. (Fletcher J. Articulated Bed Frames and Heel Ulcer Prevalence. Wound Essentials. 2015;10(1):8-13. https://www.woundsinternational.com/uploads/resources/content_11574.pdf; Davis KG, Kotowski SE. Role of Bed Design and Head-of-Bed Articulation on Patient Migration. J Nurs Care Qual. 2015 Jul-Sep;30(3); Lustig M, Wiggermann N, Gefen A. How patient migration in bed affects the sacral soft tissue loading and thereby the risk for a hospital-acquired pressure injury. Int Wound J. 2020 Jun;17(3):631-640; Allen & Wiggerman (2021) Falling short: Adverse Events Related to Patient Height. DOI: 10.33940/bedside/2021.3.4 https://www.researchgate.net/publication/350122949_Falling_Short_Adverse_Events_Related_to_Patient_Height)	The cost of a fall did not include litigation costs. The Kings fund data is estimating the cost of all falls in any setting, the EAG analysis concentrates just on falls in people who are already admitted to an acute care setting and is presented as per bed per year. The EAG noted that the economic model is specifically interested in the number of pressure ulcers per 1,000 bed days, and only in people who are admitted into acute care. They acknowledge there is some uncertainty around that number and therefore this was explored in sensitivity analysis. They noted that the data on pressure sores shows that there were 254 claims for pressure sores in 2024/25, in any NHS setting. Even assuming they all happened in acute care, this equates to a significantly small proportion of the total acute care population. The costs associated with claims can vary depending on a range of factors such as severity, context, and overall legal outcomes, which would require further assumptions if modelled.

				Including a reduction in claims is not expected to have a significant impact on the direction of the model results. The EAG have included a sentence in the discussion (section 7.3.4 of the external assessment report version 4, page 156) acknowledging that litigations were not included but could potentially be affected if the overall number of pressure ulcers could be reduced by a bedframe. However, clinical experts have suggested that it is very difficult to quantify specific contribution of bedframes (compared to other factors such as mattresses or the quality of care delivered) to reducing pressure ulcers. Therefore, any impact on litigation costs is highly uncertain and has not been included in the base case.
35.	Consultee 1 Medstrom	Not specified	ONS (2024), indicates that 19% of the UK population is aged over 65 and this is set to increase to 27% of the population by 2072. At the point of purchasing a bed fleet for the next 7-10 years future proofing for an aging population should be considered. There is some consensus that 55% of an individual's	Thank you for your comment, which the committee has considered. The committee were content with the data sources used by the EAG in their exploratory modelling, noting that sensitivity analysis was done to account for uncertainty.

			use of hospital beds occurs in last two years of life (Jones, 2023; The Strategy Unit, 2020). The population requiring health and social care services is therefore increasing and has increasingly complex conditions requiring care when receiving services. These frail patients are at greater risk of injury should they fall and must be mobilised in order not to decondition whilst in hospital. Elderly patients with a history of hospitalisation have been found to have a high risk of functional loss (Arnau et al., 2016). This decline in muscle mass and strength has been linked to falls (Gillis & MacDonald, 2005). The hospital environment has been shown to be detrimental for the elderly due to lack of mobility. Scott et al., (2021), Edmonds & Smith, (2014), Harvey et al, (2018) all identified that those in acute in-patient settings spend only about 6% of their time active. Deconditioning in elderly patients can produce a "tipping point" from which they cannot recover and return to their previous place of residence (English & Paddon-Jones, 2010). Lack of mobility in hospital therefore, prevents patients returning to their previous place of residence, puts a greater requirement on social care and whilst this is put in place places a patient in acute hospital care longer than required. More emphasis needs to be placed on the elderly in our society due to the heavy use of hospital beds in last two years of life, vulnerability of this patient group and need to mobilise	The model time horizon was 1 year and therefore increases in population size or number of acute beds were not considered. The EAG acknowledge that the harms and impact of a fall is likely to more greatly affect the elderly. The costs and frequency inputs used for the model were sourced from real world data and were then tested in sensitivity analysis. While the population is ageing, it is unclear how fall rates may evolve over the next 7-10 years, as this will depend on a range of confounding factors such as changes in care practices and prevention strategies. Therefore, future trends in fall prevalence were not explicitly modelled.

			to return them home without functional decline. Arnau, A., Espaulella, J., Serrarols, M., Canudas, J., Formiga, F. & Ferrer, M. (2016). Risk Factors for Functional Decline in a Population Aged 75 Years and Older without Total Dependence: A One-Year Follow-Up. Archives of Gerontology and Geriatrics, 65(2016), 239–247. Retrieved from http://dx.doi.org/10.1016/j.archger.2016.04.002; Edmonds, C. & Smith, H. (2014). Obervational Pilot Study of Physical Activity on an Acute Older Person's Unit. , 43, i33–i35. English, K.L. Paddon-Jones, D. 2010. Protecting muscle mass and function in older adults during bed rest. Curr Opin Clin Nutr Metab Care;13(1):34-9. doi: 10.1097/MCO.0b013e328333aa66. PMID: 19898232; PMCID: PMC3276215; Gillis, A. & MacDonald, B. (2005). Deconditioning in the Hospitalized Elderly. The Canadian Nurse, 101(6), 16–20; Edmonds, C. & Smith, H. (2014). Obervational Pilot Study of Physical Activity on an Acute Older Person's Unit. , 43, i33–i35. Harvey, J. A., Chastin, F. M. & A, S. D. (2018). What Happened to My Legs When I Broke My Arm? AIMS Medical Science, 5(3), 252–258. Jones, R.P. 2023. Addressing the Knowledge Deficit in Hospital Bed Planning and Defining an Optimum Region for the Number of Different Types of Hospital Beds in an Effective Health Care System. Int. J. Environ. Res. Public Health Vol. 20, 7171. https://doi.org/10.3390/ ijerph20247171 Scott, J., Abaraogu, U. O., Ellis, G., Giné-Garriga, M.	

			& Skelton, D. A. (2021). A Systematic Review of the Physical Activity Levels of Acutely Ill Older Adults in Hospital At Home Settings: An under-Researched Field. European Geriatric Medicine, 12(2), 227–238. Retrieved from https://doi.org/10.1007/s41999-020-00414-y The Strategy Unit. 2020. Health service use in the last two years of life. https://www.strategyunitwm.nhs.uk/publications/health-service-use-last-two-years-life Accessed 02 February 2025	
36.	Consultee 1 Medstrom	3.5 Exploratory analysis	The paper Seow et al, 2022a was conducted in Singapore with one bed exit alarm system. Is the core technology infrastructure, as well as the patient population and healthcare environment comparable/transferrable to the NHS? This report notes that the study was judged to have a high risk of bias (Figure 5.44, page 65), and also noted that "a substantial number of trusts do not have the IT infrastructure to make use of potential connectivity benefits. Therefore, even if the bed had innovative features related to connectivity, it would have no impact on day-to-day practice" (page 117, Table 7.11). The authors of the paper note that the correct alarm mode would have to be selected, which means the results are dependent on the caregiver selecting and setting the correct mode. It also notes that staff may suffer "alarm fatigue". We would like to note that many bed exit alarms are dependent on the patient being weighed once placed on the bed and the alarm will trigger once 30kg of weight has exited the bed. Many clinicians feel this is too late to prevent fall or	Thank you for your comment, which the committee has considered. The committee acknowledged the potential risk of bias and uncertainty with the results of the Seow et al study. It concluded that there is not enough evidence to determine whether price variations between bed frames for use in acute medical or surgical hospital wards are justified for bed exit alarms (see recommendation 1.2). The EAG agree that the data used is imperfect and may have limited applicability in the UK setting. However, due to the paucity of data, they were used as the best estimate. The efficacy of a bed exit alarm was explored in sensitivity analysis. The EAG have acknowledged the high risk of bias and limitations of the underlying evidence (see section 3.18 of the draft

			patient egress. Therefore, the addition of a bed with alarm is heavily dependent on human factors in addition to the infrastructure to provide ability to reduce patient falls and may alarm too late (once 30kg has moved off the bed frame) to prevent patient falls.	guidance). While recognising these concerns, the EAG believe it is still useful to present the available data, particularly given the extensive sensitivity analysis that has been conducted to explore uncertainty.
37.	Consultee 1 Medstrom	3.6 Exploratory analysis	Given that the cost of pressure ulcers are well evidenced https://www.gov.uk/government/publications/pressure-ulcers-productivity-calculator; the highest reported sites for pressure ulcers are the sacrum and heels; and there is consensus that patient migration causes shear, friction and skin damage (Fletcher J. Articulated Bed Frames and Heel Ulcer Prevalence. Wound Essentials. 2015;10(1):8-13. https://www.woundsinternational.com/uploads/resources/content_11574.pdf; Davis KG, Kotowski SE. Role of Bed Design and Head-of-Bed Articulation on Patient Migration. J Nurs Care Qual. 2015 Jul-Sep;30(3); Lustig M, Wiggermann N, Gefen A. How patient migration in bed affects the sacral soft tissue loading and thereby the risk for a hospital-acquired pressure injury. Int Wound J. 2020 Jun;17(3):631-640; Allen & Wiggerman (2021) Falling short: Adverse Events Related to Patient Height. DOI: 10.33940/bedside/2021.3.4 https://www.researchgate.net/publication/350122949_Falling_Short_Adverse_Events_Related_to_Patient_Height) this cost appears low	Thank you for your comment, which the committee has considered. The committee were content with the data sources used by the EAG in their exploratory modelling. Sensitivity analysis was done to account for uncertainty. The EAG noted that the economic model was based on the NICE scope and modelled the number of pressure ulcers per 1,000 bed days, in people who are using a bed in an acute setting. They acknowledge there is some uncertainty around that number and therefore this was explored in sensitivity analysis.
38.	Consultee 3 Baxter	3.10 Economi	Suggest adding to this sentence for clarity; ‘Connectivity features were not included in the	Thank you for your comment, which the committee has considered. Section 3.10 of

		c evaluation limitations	economic model and potential cost or time savings associated with these features are not known. This may mean cost savings from connectivity features are underestimated. While the potential overestimation of training, repair, and cleaning costs is acknowledged, the possible underestimation of the value or cost implications of connectivity features is not addressed. This omission results in an argument that appears imbalanced and lacking in completeness	the final guidance acknowledges that "There was no evidence on the potential benefits of connectivity features, such as reduced staff time. Connectivity features were not included in the economic model, and potential cost or time savings associated with these features are not known". On page 156 of the EAR, the EAG acknowledges there may be unquantified benefits of connectivity features. They also note that there is currently no clear theory of change by which connectivity features would lead to demonstrable improvements in outcomes or resource use, unlike features targeting pressure ulcer or fall prevention. They noted that connectivity features may have value but their impact from a health economic perspective is difficult to determine without further evidence.

Table 11: Editorial changes

Comment no.	Consultee	Section no.	Comment	NICE response

39.	Consultee 1 Medstrom	2.6 2 The technologies	Change in wording from "may be done" to "should be done" work with user groups have provided several examples where lack of consultation has caused issues and requirement to spend more money due to non consultation of key user groups	Thank you for your comment. Section 2.6 has been updated to “NHS Trusts choose bed frame models through procurement exercises that consider the views and preferences of different user groups within the trust”.
40.	Consultee 3 Baxter	2.3 2 The technologies	Delete or edit text in parentheses. “There are different groups of bed frame users (referred to from here as ‘carers’) and decision makers within an NHS trust.” The text in parentheses does not seem applicable. The term ‘carers’ does not cover all bed frame users.	Thank you for your comment. The term “users” has now been used throughout the guidance to capture all of the groups listed in section 2.3.
41.	Consultee 3 Baxter	2.4 2 The technologies	Define ‘electric profiling beds’ This term has not been used previously and is not has not been defined.	Thank you for your comment. Section 2.4 of the final guidance has been updated for clarity.
42.	Consultee 3 Baxter	3.8 Repair costs	Is there a difference between the time to carry out a repair (e.g. the 30 min example provided) and the overall turnaround time for a bed frame that needs a repair in that the actual repair may take 30 mins but time from identifying need for repair to having the bed frame available for use (workflow) may be longer? Overall clarity of the section should be revised.	Thank you for your comment. Clarification has been added to section 3.8, “The turnaround time (from identifying the need for repair to having the bed frame available for use) was an important consideration”.
43.	Consultee 3 Baxter	3.8 Repair costs	Edit text to add ‘…to be…’	Thank you for your comment. This change has been made.