## 2-year surveillance 2016 - Falls (2013) NICE guideline CG161

### Appendix A: decision matrix

| Summary of new evidence from 2-year surveillance     | Summary of new intelligence from 2-year surveillance   | Impact   |
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| Preventing falls in older people - Case/risk ident   | ification  |  |
| 161 - 01 What are the key risk factors that should b | e used to identify those at highest risk of a first or sub   | sequent fall? (1.1.1.1, 1.1.1.2)   |
| No relevant evidence identified.                     | One topic expert stated that there have been numerous studies of specific risk factors within a range of populations of older people, some with specific diagnostic groups, but none of these, including proposed risk prediction tools, indicates the need to revise the current recommendations either for community dwelling or hospital-inpatient populations.   | Feedback from the topic experts is supportive of guideline recommendations.  The guideline recommends that older people living in the community in contact with healthcare professionals should be asked routinely whether they have fallen in the past year and asked about the frequency, context and characteristics of the fall/s.  Surveillance decision  This review question should not be updated. |
| Preventing falls in older people - Multifactorial fa | alls risk assessment   |  |
| 161 - 02 What assessment tool (or process) should    | be used to identify modifiable risk factors for falling a  | nd those at high risk of falling? (1.1.2.1, 1.1.2.2)   |
| No relevant evidence identified.                     | One topic expert commented that there has been a lot of recent research on falls risk assessment tools that utilise advances in technology in motor sensors (using gait speed test and Kinect, for example) but the quality of the evidence is not particularly robust at this time and is unlikely to provide any further insights from the multifactorial assessment already recommended in the guideline.  One topic expert stated that the use of the term 'specialist falls service' and the way falls services are | assessment tools is supportive of the guideline which recommends a multifactorial falls risk assessment for  |

| Summary of new evidence from 2-year surveillance | Summary of new intelligence from 2-year surveillance  | Impact  |
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|  | commissioned and delivered should be reviewed, and highlighted a number of grey literature.  Another topic expert echoed similar views - that the guideline originally set out to include service provision and that this remains critical. | development which will view falls as a trigger to holistic assessment. This area will be examined again at the next surveillance review to take account of the recommendations in the multimorbidity guideline.  Surveillance decision  This review question should not be updated. |

<u>Preventing falls in older people</u> - Multifactorial interventions; Strength and balance training; Exercise in extended care settings; Home hazard and safety intervention; Psychotropic medications; Cardiac pacing

#### 161 – 03 What are the most clinically effective methods/programmes/interventions for falls prevention? (1.1.3.1, 1.1.3.2, 1.1.4.1, 1.1.5.1, 1.1.6.1, 1.1.7.1, 1.1.8.1)

#### **Exercise**

One RCT<sup>1</sup> of supervised multimodal exercises versus control to reduce falls risk in economically and educationally disadvantaged older adults (n=119), revealed that minimally supervised home-based and fully supervised centre-based exercise programmes may be equally effective in improving fall-relevant functional mobility.

One RCT<sup>2</sup> of exercise for targeting balance, leg strength, and freezing of gait for falls prevention in Parkinson disease (n=231) found that the exercise programme did not reduce falls but improved physical and psychological health.

One RCT<sup>3</sup> of a multifactorial falls prevention program for people with stroke returning home after rehabilitation (n=156) found that it was not effective in reducing falls in people with stroke who are at risk of falls nor was it more effective than usual care in improving gait, balance, and strength in people with stroke.

One topic expert commented that no new evidence has been published indicating the need for change in the recommended interventions, notably multifactorial assessment and intervention, for the groups within the guideline scope.

Another topic expert stated that there has been further research into the intensity of vitamin D doses and links to injury prevention in patients with a history of falling as well as further studies looking at the means to review medication to reduce risk of falls but that the evidence for both of these areas is not particularly robust at this time. The Topic expert also pointed out that a Cochrane review makes reference to the gradual withdrawal of psychotropic medication but that this would only be a small refinement on the current recommendation.

Another topic expert commented that no new data has emerged and the recommendations still stand; and provided the following references supporting the recommendations:

One RCT<sup>45</sup> of multifactorial post-fall assessment and

New evidence may impact on the recommendation in the guideline relating to strength and balance training for falls prevention in older people living in the community.

The guideline recommends strength and balance training as one of the components of a successful multifactorial intervention programme for older people with recurrent falls or at increased risk of falling (recommendations <a href="https://example.com/1.1.1.2">1.1.1.2</a> and <a href="https://example.com/1.1.3.1">1.1.3.1</a>).

Recommendation 1.1.4.1 of the guideline also states: "Strength and balance training is recommended. Those most likely to benefit are older people living in the community with a history of recurrent falls and/or balance and gait deficit. A muscle-strengthening and balance programme should be offered. This should be individually prescribed and monitored by an appropriately trained professional".

Among the evidence for the surveillance review is the report of an RCT<sup>10</sup> which showed that individualised home exercise significantly improved performance-based mobility but also significantly increased the rate of

#### Summary of new evidence from 2-year surveillance

One RCT<sup>4</sup> investigated whether an exercise intervention can enhance mobility, prevent falls, and increase physical activity among community-dwelling people after stroke (n=151). Results showed that the intervention enhanced aspects of mobility but had no effect on falls.

One small randomised crossover pilot study<sup>5</sup> of an exercise programme to prevent falls in institutionalised elderly with cognitive deficits (n=27) was found. Results revealed a statistically significant reduction in falls during are not taken to hospital (n=204) found that the treatment compared to the control periods.

An economic evaluation of an RCT<sup>6</sup> of an exercise intervention to prevent falls in Parkinson's disease (n=130) found no statistically significant differences between groups in total healthcare, combined health and social care costs or QALYs, however, exploration of the uncertainty surrounding these estimates suggested there is more than 80% probability that the intervention is a cost-effective strategy relative to usual care.

One RCT<sup>7</sup> investigated the long-term effects of three multicomponent exercise interventions in communitydwelling older adults (n=280). Results showed that training focusing on strength, balance, and endurance can enhance physical performance for up to 24 months: however, these findings did not translate to improved fall-related psychological outcomes or reduced incidence of falls.

One RCT<sup>8</sup> investigated the effects of water-based exercise to improve falls risk and physical function in older adults with lower-extremity osteoarthritis (n=39). The authors found that the intervention did not reduce

#### Summary of new intelligence from 2-year surveillance

intervention compared with conventional care (n=313) concluded that multifactorial intervention is effective at reducing the fall burden in cognitively intact older persons with recurrent falls, but does not reduce the proportion of subjects still falling.

One RCT<sup>46</sup> of referral to community fall prevention services or standard medical and social care among people who call an emergency ambulance after a fall but intervention reduced the fall rate and improved clinical outcome.

One topic expert commented that there is also some observational data that although psychotropic medications are more likely to be associated with an increased risk of falling, other drugs may be implicated as well, for example, diuretics. The NICE Medicines Evidence Commentary (MEC) Falls: Swedish study highlights the risk of fall injuries in older people with commonly prescribed medicines was provided as reference.

#### **Impact**

falls in older people recently discharged from hospital.

This is a single intervention in a highly specific clinical context - post discharge. The findings suggest that this form of home exercise cannot be recommended as a standalone or single, 'blanket' intervention for fall prevention for this group. This result, however, may be out of step with other studies on exercise in falls prevention but most are done in healthier older people.

We subsequently discussed this with topic experts who made us aware of a highly relevant Cochrane review (Gillespie et al. 2012) which is being updated at the moment. In light of this, it is felt more appropriate to await the outcome of the review and reassess the need to update the guideline when this completes.

A number of new studies were also identified for other interventions; these were mostly in line with the guideline recommendation, including the NICE MEC which posited that the findings of a Swedish study reinforces the guideline on assessment and prevention of falls in older people, as the guideline recommends medication review as part of a multifactorial falls risk assessment for older people who have fallen or who are at risk of falls.

There is new evidence for some interventions that were not recommended in the guideline because of insufficient evidence, however it is still premature to consider these specific interventions for inclusion in the guideline - these are untargeted group exercise 15; 16 cognitive/behavioural interventions<sup>32</sup> and the use of vitamin D<sup>38</sup>.

| Summary of new evidence from 2-year surveillance   | Summary of new intelligence from 2-year surveillance | Impact  |
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| falls risk in their sample compared with control.  One RCT <sup>9</sup> investigated the effects of water-based exercises on physical functions and quality of life in community-dwelling elderly people with history of falling (n=66). Results indicated that that water-based exercises are beneficial to improve quality of life, as well as physical activities, of community-dwelling elderly compared with land-based exercise.  One RCT <sup>10</sup> investigated the effects of a home-based   |  | Surveillance decision This review question should not be updated. |
| exercise programme on falls and mobility among older people recently discharged from hospital (n=340). Results showed that individualised home exercise significantly improved performance-based mobility but also significantly increased the rate of falls in older people recently discharged from hospital. One small RCT <sup>11</sup> to determine the feasibility, safety, and efficacy of a home-based exercise intervention targeting fall risk in older adults with multiple sclerosis (n=27) found the intervention to be feasible, safe, and effective for reducing physiological fall risk in older adults with multiple sclerosis. |  |   |
| One pilot RCT <sup>12</sup> of the feasibility, safety and preliminary evidence of the effectiveness of a home-based exercise programme for older people with Alzheimer's disease (n=40) concluded that the exercise programme was feasible and safe and may help improve balance and mobility performance and reduce falls risk in people with Alzheimer's disease.  One pilot RCT <sup>13</sup> compared the effects of two exercise programmes on balance and risk of falls in older women  |  |   |

| Summary of new evidence from 2-year surveillance   | Summary of new intelligence from 2-year surveillance | Impact |
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| with age-related visual dysfunction (n=41) and concluded that for older adults with low vision, it would be worthwhile putting more emphasis on the inclusion of patient-tailored strength and balance exercises to improve balance and potentially reduce the risk of falls.  |  |        |
| One RCT <sup>14</sup> investigated the effects of a multimodal exercise program on static and dynamic balance, and risk of falls in older adults with mild or moderate cognitive impairment (n=68). The authors concluded that multimodal exercise program can improve the balance in cognitively impaired older adults.   |  |        |
| One RCT <sup>15</sup> compared the Otago Exercise Programme (OEP), originally designed as supervised home training, with the same programme performed as group training, on functional balance and muscle strength, mobility, fall efficacy and self-reported health (n=125). Results showed that in fall-prone home-dwelling older people, the OEP performed as group training is more effective for improving functional balance, muscle strength and physical health, but not fall efficacy and mental health than when performed as home training. |  |        |
| An economic evaluation <sup>16</sup> of a group-based exercise programme for falls prevention among the older community-dwelling population found that the exercise programme is cost-effective for women only; there is no evidence to support its cost-effectiveness in a group of mixed gender unless the costs of programme implementation are minimal.  Two publications of one RCT <sup>17</sup> ; assessed the effectiveness of low doses of whole body vibrations on   |  |        |

| Summary of new evidence from 2-year surveillance   | Summary of new intelligence from 2-year surveillance | Impact |
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| the risk of falls among nursing home residents (n=62). No significant inter-group difference in the frequency of falls was observed during the 12 months of research. The authors concluded that the intervention had no impact in this group of people.   |  |        |
| One RCT <sup>19</sup> evaluated the influence of vibration on musculoskeletal health in older people at risk of falls (n=61). Results showed that whole-body vibration increased leg power and bone formation, but it did not provide any additional benefits to balance or fall risk factors beyond a falls prevention programme in older people at risk of falls.            |  |        |
| One RCT <sup>20</sup> investigated the influence of a ballroom dancing programme on the postural balance of institutionalised elderly residents (n=59). The study found that this activity improved balance and reduced the number of falls in this elderly population.  |  |        |
| One RCT <sup>21</sup> determined whether fall-resisting skills acquired from a single training session can be retained or enhanced by an intermediate ancillary session (n=48). Results showed that motor memory could be retained for 6 months or longer after a single session of fall-resistance training, although a single "booster" slip could further impede its decay. |  |        |
| Tai chi  One RCT <sup>22</sup> compared the effectiveness of tai chi and low-level exercise in reducing falls in older adults; to determine whether mobility, balance, and lower limb strength improved and whether higher doses of tai chi resulted in greater effect (n=684). Results showed no  |  |        |

| Summary of new evidence from 2-year surveillance  | Summary of new intelligence from 2-year surveillance | Impact |
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| difference in falls rates between the groups, with falls reducing similarly (mean falls rate reduction of 58%) over the 17-month follow-up period. Strength and balance improved similarly in all groups over time.   |  |        |
| One RCT <sup>23</sup> of Tai Chi exercise in persons with Parkinson's disease (n=45) found that that it was ineffective in improving either gait initiation, gait performance, or reducing parkinsonian disability in this group of people.   |  |        |
| One RCT <sup>24</sup> of the effects of Tai Chi on the balance control of elderly persons with visual impairment in residential care homes (n=not reported in abstract) found that practicing Tai Chi may improve the balance control of visually impaired elderly persons.   |  |        |
| One RCT <sup>25</sup> on the effectiveness of Tai chi for postural stability in people with Parkinson's disease was found (n=195). Results showed that Tai chi training appeared to reduce balance impairments in patients with mild-to-moderate Parkinson's disease, with additional benefits of improved functional capacity and reduced falls. |  |        |
| Balance training  |  |        |
| One small RCT <sup>26</sup> investigated the effects of virtual reality balance training (VRBT) with a balance board video game system on balance of chronic stroke patients (n=22). The results showed a significant improvement in dynamic balance in this group of patients.   |  |        |
| One RCT <sup>27</sup> of a lifestyle integrated approach to balance and strength training found a significant reduction of falls for the intervention compared with controls (n=317). The   |  |        |

| Summary of new evidence from 2-year surveillance   | Summary of new intelligence from 2-year surveillance | Impact |
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| authors concluded that the lifestyle programme provides an alternative to traditional exercise to consider for fall prevention.  |  |        |
| One RCT <sup>28</sup> investigated long-term effects of new progressive group balance training for elderly people with increased risk of falling (n=59) and concluded that the training programme provided important positive short and long-term benefits to gait, balance function, and fear of falling.   |  |        |
| One RCT <sup>29</sup> evaluated the effects of a balance training programme in older adults with osteoporosis with an increased risk of falling (n=96). Results showed that balance training with multi-task exercises improves fall-related self-efficacy, gait, balance performance and physical function in this group of people.  A 1-year follow up of an RCT <sup>30</sup> of a strength and balance enhancing exercise intervention to prevent falls in community-dwelling elderly Japanese women with a history of falls found that the intervention decreased |  |        |
| incidences of falls and fractures, however, fall and fracture rates in excluded people were high.  |  |        |
| One RCT <sup>31</sup> explored whether balance and gait training with augmented feedback can enhance balance confidence in Parkinson's disease patients immediately after treatment and at follow-ups (n=51). Findings from the study indicate that the intervention could enhance balance confidence and balance and gait performance in this group of people.  |  |        |
| One pilot RCT <sup>32</sup> on the impact of a community-based cognitive training intervention on balance and gait in  |  |        |

| Summary of new evidence from 2-year surveillance   | Summary of new intelligence from 2-year surveillance | Impact |
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| cognitively intact black older adults known to have a history of falls was found (n=45). Results showed that compared to controls, intervention participants experienced statistically significant improvements in the Berg Balance Scale and gait speed; mean performance on distracted gait speed also improved more for intervention participants compared to controls.  One RCT <sup>33</sup> on the effects of proprioceptive neuromuscular facilitation integration pattern (PIP) exercise programme on the fall efficacy and gait ability of the elders with experienced fall (n=30) showed that the measurements of fall efficacy scale, cadence, stride length, and step length in the PIP group were shown to be significantly increased compared to the general exercise group. |  |        |
| Multifactorial interventions  One multicentre RCT <sup>34</sup> evaluated effects of a multifactorial fall prevention programme on fall incidence and physical function in community-dwelling older adults (n=616). Results showed that the intervention improved functional performance at 3 months, but did not reduce falls at 1-year follow-up.  One RCT <sup>35</sup> assessed the effectiveness of the multifactorial Chaos Clinic Falls Prevention Programme on rate of falls and related injuries of home-dwelling older adults (n=1314). Results showed that the programme reduces the rate of falls and related injuries by almost 30%.  |  |        |
| Other interventions  |  |        |

| Summary of new evidence from 2-year surveillance   | Summary of new intelligence from 2-year surveillance | Impact |
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| One RCT <sup>36</sup> evaluated the effect of insoles with medial arch support and metatarsal pad on balance, foot pain and disability in elderly women with osteoporosis (n=94). The authors concluded that arthoses can be used as an adjuvant strategy to improve balance and to prevent falls in the elderly.  |  |        |
| One RCT <sup>37</sup> evaluated the effectiveness of a fall prevention programme for elderly women in rural areas (n=62). The study found that that the programme improved muscle strength and endurance, balance, and psychological aspects in elderly women with a fall history.   |  |        |
| One RCT <sup>38</sup> examined the effects of oral vitamin D supplementation on falls, mobility, and muscle strength in older postmenopausal women (n=686), and found that oral vitamin D had neither beneficial nor adverse effects on falls or physical function.  |  |        |
| One RCT <sup>39</sup> to determine to what degree perturbation training translated to a reduction of older adults' annual falls risk in their everyday living was found (n=212). The authors concluded that a single session of repeated-slip exposure could improve community-dwelling older adults' resilience to postural disturbances and, hence, significantly reduce their annual risk of falls. |  |        |
| One RCT <sup>40</sup> of the effectiveness of preventive home visits in reducing the risk of falls in old age was found (n=230). Results showed that the preventive home visiting programme can be effective in reducing falls in community-dwelling older people.  One RCT <sup>41</sup> investigated the effects of a home-based   |  |        |

| Summary of new evidence from 2-year surveillance   | Summary of new intelligence from 2-year surveillance      | Impact  |
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| one-year case management intervention in older people with functional dependency and repeated contact with the health care services on self-reported falls and self-reported injurious falls. Results showed that the intervention was not able to prevent falls or injurious falls.  A feasibility study and pilot RCT <sup>42</sup> of a tailored home |   |   |
| hazard reduction and balance and strength exercise fall prevention programme in older people with mild dementia (n=22) found both the rate of falling and the risk of a fall were lower in the intervention group but the findings were not significant.   |   |   |
| An economic evaluation study alongside an RCT <sup>43</sup> of a community falls prevention service among older people living at home or in residential care that had fallen and called an emergency ambulance but were not taken to hospital, and referred to the intervention or usual care (n=157) found that the service was cost effective.         |   |   |
| 161 - 04 What are the most effective methods of re   | habilitation/intervention/process of care, following an i | njurious fall?  |
| No relevant evidence identified.   | None identified relevant to this question.                | No new evidence was identified that would affect recommendations.  Surveillance decision  This review question should not be updated. |
| Preventing falls in older people - Encouraging the   | ne participation of older people in falls prevention      | programmes  |
| 161 – 05 Do effective falls prevention programmes (1.1.9.1, 1.1.9.2)   | also improve psychosocial factors related to fear of fal  | ling and the psychosocial consequences of falling?  |
| No relevant evidence identified.   | None identified relevant to this question.                | No new evidence was identified that would affect  |

| Summary of new evidence from 2-year surveillance   | Summary of new intelligence from 2-year surveillance  | Impact  |
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|  |   | recommendations.  Surveillance decision  This review question should not be updated.  |
| Preventing falls in older people - Education and   | information giving  |   |
| 161 – 06 What are the older people's views of falls  | prevention strategies, including views on participation   | and compliance? (1.1.10.1, 1.1.10.2)  |
| No relevant evidence identified.   | None identified relevant to this question.  | No new evidence was identified that would affect recommendations.  Surveillance decision  This review question should not be updated.   |
| Preventing falls in older people - Interventions t   | hat cannot be recommended because of insuffici  | ent evidence  |
| 161 – 07 Do hip pads or protectors worn about the  | hip reduce the risk of fracturing the hip? (1.1.12.6)   |   |
| No relevant evidence identified.   | None identified relevant to this question.  | No new evidence was identified that would affect recommendations.  Surveillance decision  This review question should not be updated.   |
| Preventing falls in older people during a hospita  | Il stay - Predicting patients' risk of falling in hosp  | ital  |
| 161 – 08 What risk prediction tool(s) or process(es) should be used to identify modifiable and non-modifiable risk factors for falling for patients in hospital?  Does this method vary by inpatient setting? (1.2.1.1, 1.2.1.2) |   |   |
| No relevant evidence identified.   | One topic expert commented that there has been further work looking at environmental or organisational factors which contribute to falls risks in hospital but that this research is unlikely to add anything further to current recommendations or meet the research recommendations in this area.  One topic expert provided the following reference: One study <sup>47</sup> assessed the predictive accuracy of the Morse | Feedback from the topic experts is supportive of guideline recommendation that the following groups of inpatients are at an increased risk of falling in hospital:  • all patients aged 65 years or older  • patients aged 50 to 64 years who are judged by a clinician to be at higher risk of falling because of an underlying condition. |

| Summary of new evidence from 2-year surveillance | Summary of new intelligence from 2-year surveillance   | Impact  |
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|  | falls score (MFS) using data from an acute general hospital in the UK (n=467). The study concluded that the MFS risk scoring tool was not satisfactory for predicting falls in hospital. | The reference provided by the topic experts is also very much in line with the guideline which does not recommend the use of fall risk prediction tools to predict inpatients' risk of falling in hospital  Surveillance decision  This review question should not be updated |

#### Preventing falls in older people during a hospital stay - Assessment and interventions

# 161 – 09 What interventions reduce older patients' risk of falling and/or the severity of a fall in hospital, compared with usual care? Which interventions are the most effective? Does the intervention vary by inpatient setting? (1.2.2.1, 1.2.2.2, 1.2.2.4, 1.2.2.5)

One RCT(the REFINE study)<sup>48</sup> of bed and bedside chair pressure sensors using radio-pagers compared with standard care in elderly patients admitted to acute, general medical wards (n=1839) found that the intervention does not reduce in-patient bedside falls, time to first bedside fall and are not cost-effective in elderly patients in acute, general medical wards in the UK.

A cluster RCT<sup>49</sup> investigated whether an intervention aimed at increasing bed alarm use decreases hospital falls and related events (n=27,672). Results showed that the intervention increased alarm use but had no statistically or clinically significant effect on fall-related events or physical restraint use.

A multifactorial fall-and-fracture risk-based intervention programme<sup>50</sup>, applied in a dedicated geriatric hospital unit (n=122) was effective and more beneficial than usual care in improving physical parameters related to the risk of fall and disability among high-risk patients.

One topic expert commented that no new evidence has been published that would indicate the need for change in the recommended interventions, notably around multifactorial assessment and intervention.

A member of the provided some references which have been summarised as follows:

A stepped-wedge cluster RCT<sup>52</sup> of individualised falls-prevention education for patients, supported by training and feedback for staff, delivered as a ward-level programme (n=3606, from 8 rehabilitation units in general hospitals in Australia) showed fewer falls, injurious falls and fallers in the intervention compared with the control group.

An extended evaluation of the UK FallSafe quality improvement project<sup>53</sup> concluded that introducing key components of multifactorial assessment and intervention as a care bundle resulted in improved delivery of multifactorial assessment and intervention and significant reductions in fall rates, but not in injurious

New evidence and clinical feedback is unlikely to impact on guideline recommendations.

The new evidence and intelligence from the 2-year identified two new interventions both of which were not effective in reducing falls in hospitals. The REFINE study<sup>48</sup> showed that bed and bedside chair pressure sensors using radio-pagers does not reduce in-patient bedside falls, time to first bedside fall and are not cost-effective in elderly patients in acute, general medical wards in the UK and a cluster RCT<sup>49</sup> which revealed that the intervention increased alarm use but had no statistically or clinically significant effect on fall-related events or physical restraint use, were also provided.

The guideline already recommends that for patients at risk of falling in hospital a multifactorial assessment and a multifactorial intervention should be considered. This premise was further supported by two studies provided by the topic experts - an RCT<sup>52</sup> of individualised falls-prevention education for patients, supported by training

| Summary of new evidence from 2-year surveillance  | Summary of new intelligence from 2-year surveillance | Impact  |  |  |
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| An economic evaluation from an RCT <sup>51</sup> of patient education for the prevention of falls in hospitals (n=1,206) identified that the programme would be both more effective in preventing falls among cognitively intact inpatients and cost saving where the proportion of these patients who would otherwise fall under usual care conditions is at least 4.0%. | fall rate.   | and feedback for staff showed fewer falls, injurious falls and fallers in the intervention compared with the control group; and an evaluation of the UK FallSafe project <sup>53</sup> found that multifactorial assessment and intervention resulted in significant reductions in fall rates in intervention hospital units.  Surveillance decision  This review question should not be updated. |  |  |
| Preventing falls in older people during a hospital stay - Information and support   |  |   |  |  |
| 161 – 10 What are the education and information needs of patients and their family members and carers after a hospital-based falls risk assessment, or a fall in hospital? (1.2.3.1, 1.2.3.2)   |  |   |  |  |
| No relevant evidence identified.  | None identified relevant to this question.           | No new evidence was identified that would affect recommendations.  Surveillance decision  This review question should not be updated.   |  |  |

#### **Research recommendations**

| RR - 01     | what environmental adaptations can be made in existing inpatient units, and should be considered when inpatient units are built, to reduce the risk of falls and injuries in older inpatients? |  |  |  |
|-------------|--|--|--|--|
| No relevant | evidence identified.   | A topic expert provided the following reference: A pilot cluster RCT <sup>54</sup> of shock-absorbing flooring to reduce injuries from falls in wards for older people (n=452) found a higher rate of fall in the intervention compared to the control group. There was a lower rate of injurious falls in the intervention group and higher rate of moderate or major injuries in the control group, although the results were not significant. The authors | The evidence from the pilot RCT provided by the topic experts <sup>54</sup> is unlikely to impact on the research recommendation as the study found no significant difference for injury incident rate between the intervention and control groups, and the authors concluded that further research is required to assess to the risk of increasing fall rates with a shock-absorbing floor. |  |

|  |   | concluded that further research is required to assess to the risk of increasing fall rates with a shock-absorbing floor. | Surveillance decision This research recommendation will be considered again at the next surveillance point.   |  |  |
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| RR – 02  | Which risk factors for falling that can be treated, improved or managed during the hospital stay are most prevalent in older patients who fall in inpatient settings in the UK? |  |   |  |  |
| No relevar   | nt evidence identified.   | None identified relevant to this question.   | No new evidence was identified that would affect recommendations.  Surveillance decision  This research recommendation will be considered again at the next surveillance point. |  |  |
| RR – 03 What are the causes of unwitnessed falls among older inpatients? |   |  |   |  |  |
| No relevar   | nt evidence identified.   | None identified relevant to this question.   | No new evidence was identified that would affect recommendations.  Surveillance decision  This research recommendation will be considered again at the next surveillance point. |  |  |

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