Exploring the rate of emergency falls admissions in Salisbury Community Area.

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February 2013.

1.   Introduction

One of the aims of the Wiltshire Falls and Bone Health Strategy is to halt the rising number of falls and related injuries experienced by older people each year. Local falls data show that Salisbury Community Area is significantly higher for falls emergency admissions compared to the Wiltshire average. This report aims to explore possible reasons behind this data.

There are over 400 potential risk factors which have been identified for falling, with no universally agreed and reliable set of risk factors available. This report aims to explore some of the possible factors associated with the risk of a fall for residents in Salisbury.

This paper explores only hospital admission data since this is readily available. A number of hypotheses are explored to try to understand the high rate of falls in Salisbury Community Area. It is estimated that only 20% of falls require medical attention. As a large number of falls are not admitted to secondary care these numbers are an under-estimate of the true burden of falls in the community. Further work is being carried out with Great Western Ambulance to explore their data and it is hoped that this will complement this report at a later date.

2.   The rationale for investigating falls in Salisbury Community Area

The latest data from 2011/12 shows that there were 399 emergency falls admissions for people aged 65 and over in the Salisbury Community Area. This is a rate of 4,560 per 100,000 population in those aged 65 and over. This is significantly higher than the overall Wiltshire rate of 3,047 per 100,000 aged 65 and over per year (see graph 1).
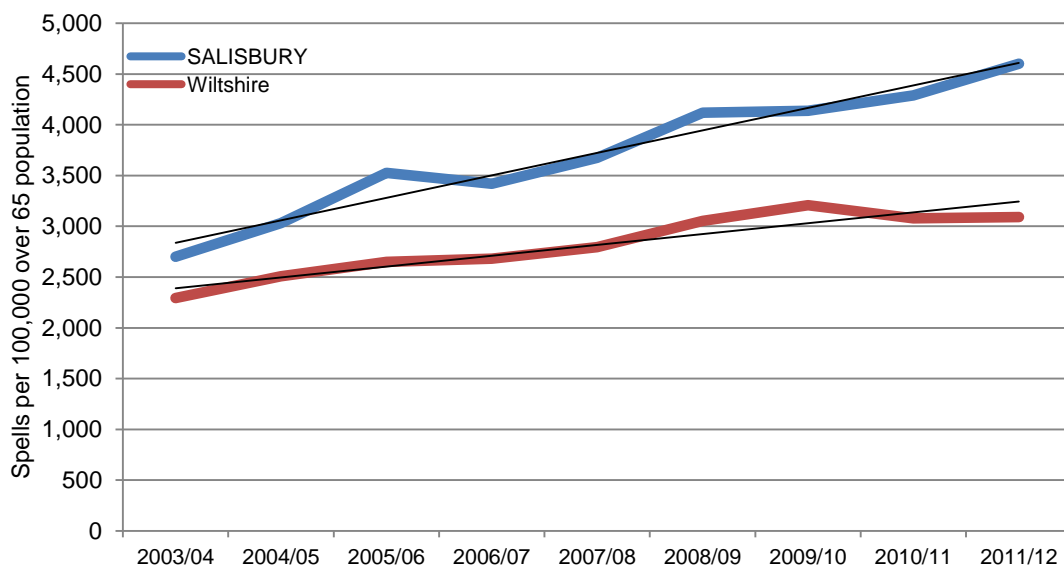
Graph 1

Falls emergency admission rates for people aged 65 and over, by community area 2011/12
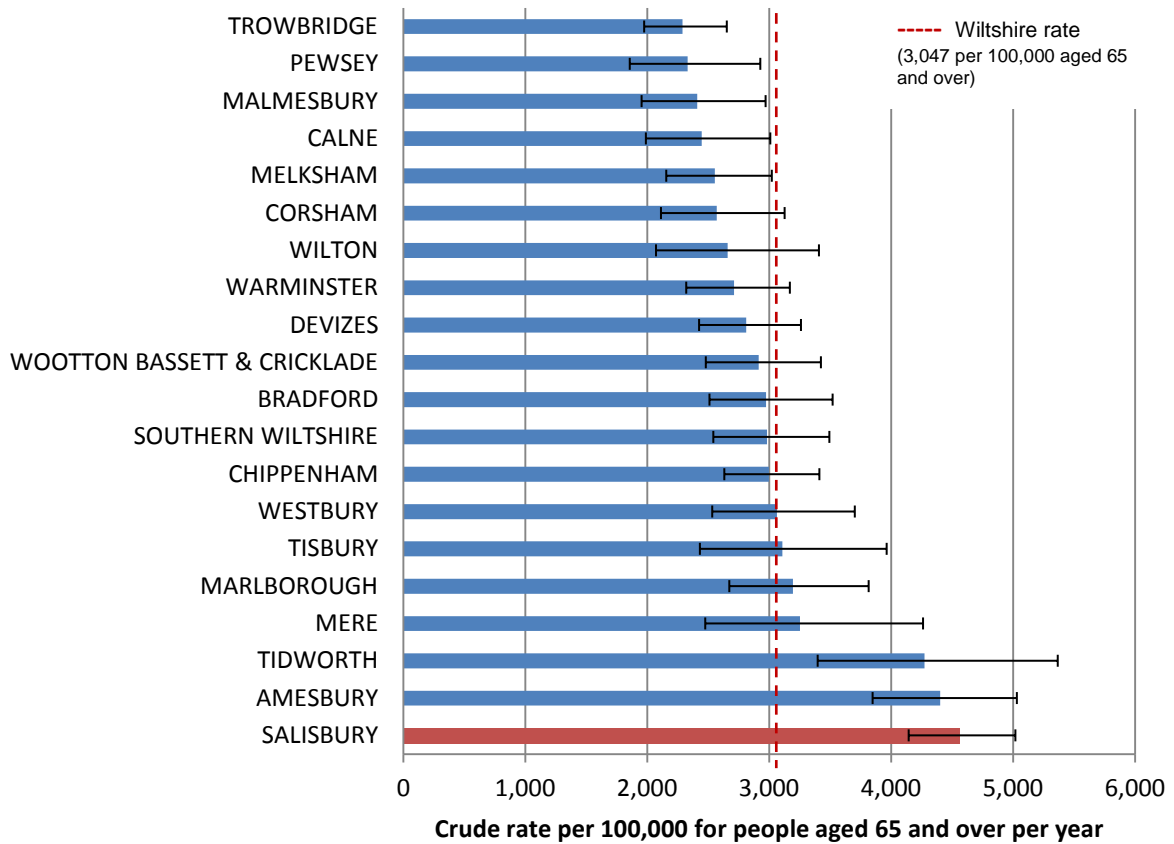
Falls emergency admissions from the Salisbury Community Area have seen a continual rise and at a faster rate than the overall rise in Wiltshire. This is illustrated in graph 2.

Graph 2.   **Emergency admission rate to hospital as a result of a fall for people 65 or over.**

3.   Demographics.

In order to understand the data, it is necessary to explore the demographics of Salisbury's older population and see if this is influencing the data.

3.1   Deprivation

The Index of Multiple Deprivation (IMD) gives a overall measure of relative deprivation in an area and can be assessed at small local areas called Lower Super Output Areas (LSOAs). Salisbury Community Area contains nine LSOAs in the 20% most deprived in Wiltshire with regard to the IMD. Thus if falls admissions are associated with deprivation in Wiltshire, this could help to explain the admission rate. However, when all falls emergency admissions in Wiltshire for people age 65 and over were assessed by deprivation there was no significant difference between the rates of falls admissions in each IMD quintile, suggesting that this is not an explanation for the Salisbury rate.

3.2   Age and gender

It is widely acknowledged that rates of falls and their associated complications rise steadily with age. The falls admission data tends to treat all people aged 65 years and over as one group. Since older people in this age group may be more likely to fall and/or experience a severe fall, it is therefore useful explore in more detail the age make up of the 65 and over age category in Salisbury.

In Wiltshire 13.9% of people in the age category of 65 and over are actually aged 85 or over. For Salisbury, this older age group account for a larger proportion with 16.6% of those aged 65 and over actually being aged 85 and over. The fastest population increase in this Community Area has been, and will continue to be, in the number of people aged 85 and over.

Women are more likely to suffer from osteoporosis and this is a condition which is associated with falls. In the age group of people aged 85 and over, there are currently more than twice as many females in Salisbury Community Area than males.

To adjust for the two demographic variables of age and gender, a Standardised Admission Ratio (SAR) was calculated for each Community Area. This calculates the number of admissions you would expect if the age and gender make up was the same as a reference population, in this case the England population. If the Community Areas has the same number of observed admissions as expected then it has a SAR of 100. Areas with more than expected admissions have SARs greater than 100 and those with less than expected admissions have SARs less than 100. Graph 3 illustrates the SARs for each Community Area showing that even once age and gender have been accounted for, Salisbury is still in the top three highest for admissions. In terms of actual numbers, Salisbury has 80 more non-elective falls admissions of people aged 65 and over than would be expected if its population age and gender make up was the same as England.

Graph 3

Standardised non-elective hospital admission ratios for falls in people aged 65 and over, by Community Area (2011/12).
(Standised for age and sex)
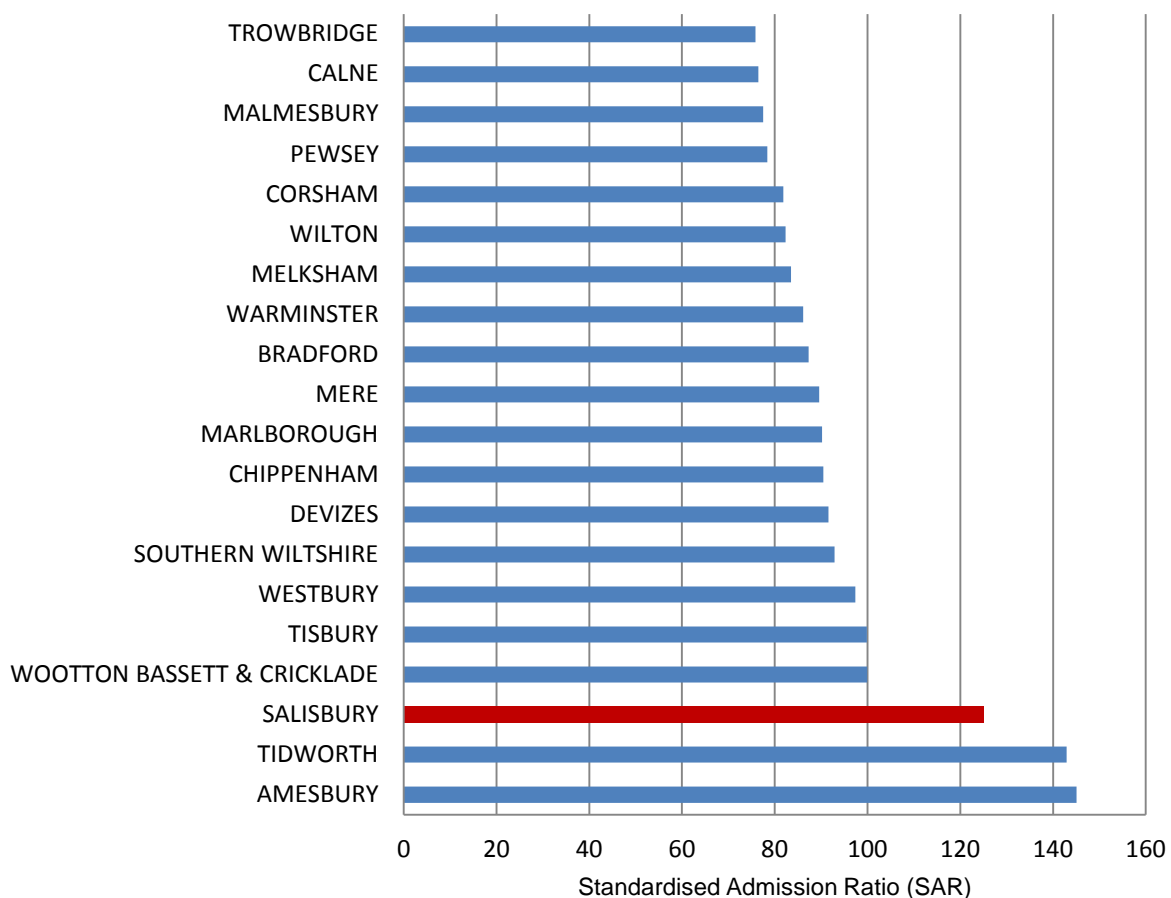
## 4. Details of falls resulting in emergency hospital admissions

4.1 Location

It is important to assess if there are any differences between the falls admissions from Salisbury compared with the whole of Wiltshire. Nationally, over half of residents in institutional care have had at least one fall over a one-year period. Falls among those in institutions also tend to result in more serious complications, with 10–25% of such falls resulting in fracture or laceration. Thus one explanation for the Salisbury data could be simply the number of care homes and nursing homes compared with other Community Areas.

Graph 4 shows the recorded location for falls admissions and illustrates that Salisbury is similar to the whole of Wiltshire. The majority of falls occur in the home. 15.6% in Wiltshire and 18.6% in Salisbury take place in a residential institution which includes care homes and nursing homes.

Graph 4

Falls emergency admissions for people aged 65 and over, by location of fall. 2011/12.
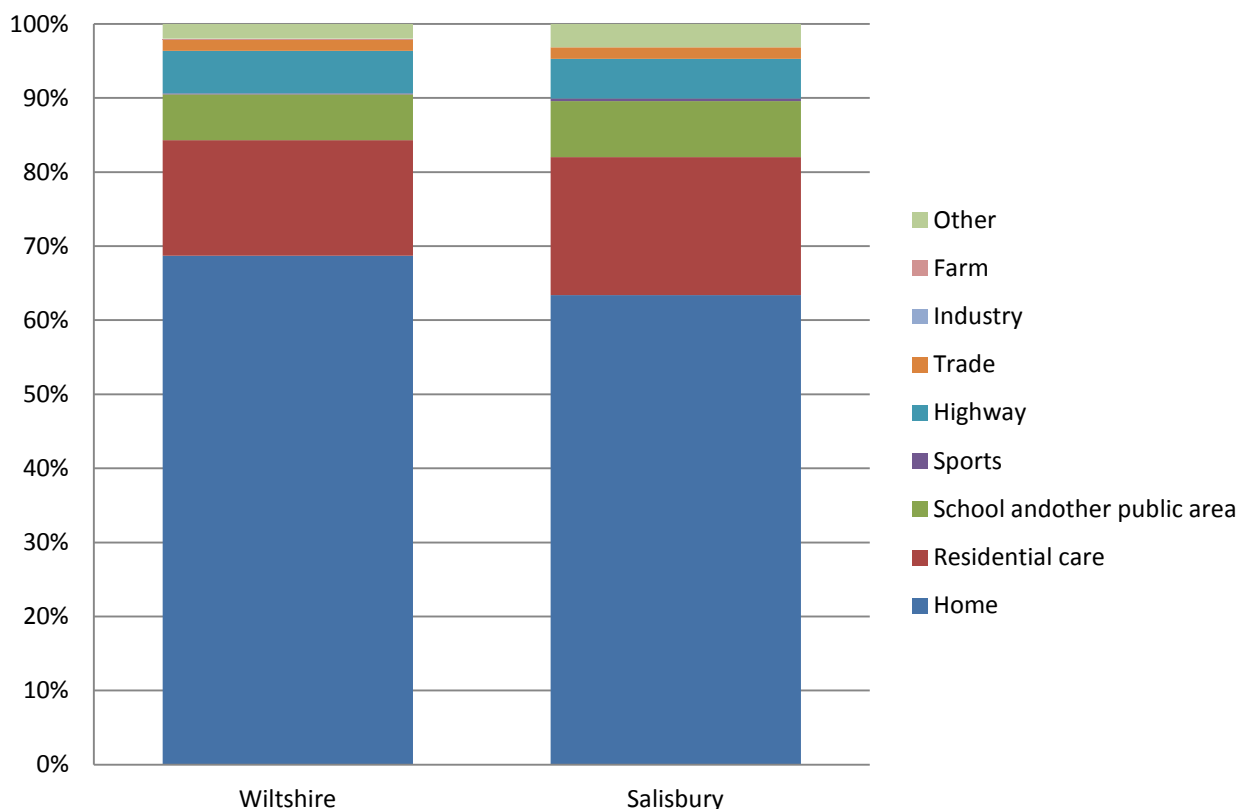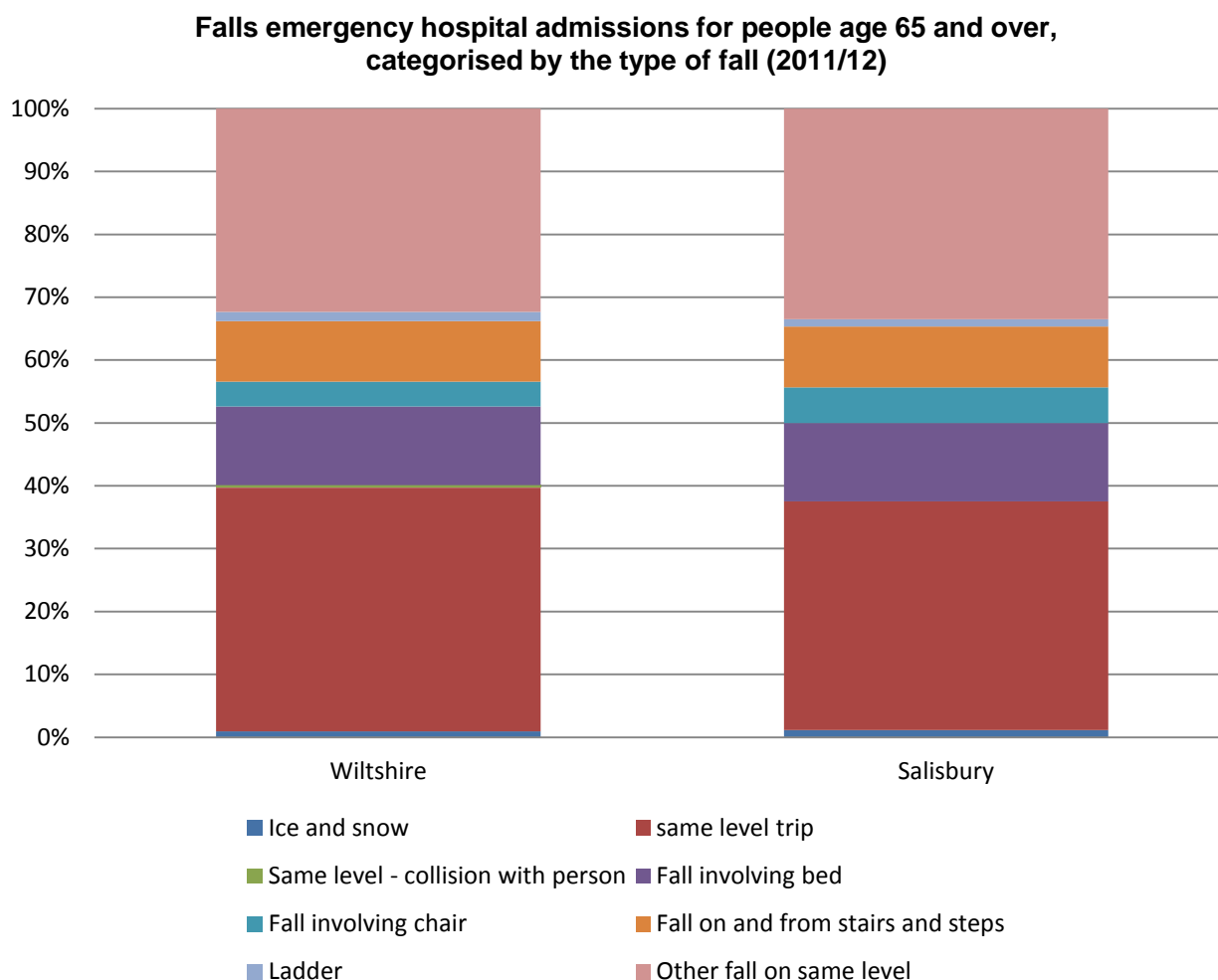
A proportion of falls (13.3% for Wiltshire and 7.8% for Salisbury) are unclassified and thus not included in this graph. Furthermore, there is a difference in the proportion unclassified in Salisbury compared with Wiltshire overall which make indicate some bias in the results.

4.2   Type of fall

The majority of falls for both Salisbury and Wiltshire as a whole take place on a level surface. For Salisbury 35.6% of falls are categorised as a same level trip compared with 37.8% for Wiltshire (see graph 5). This is followed closely with 32.8% being classified in Salisbury as 'same level other', compared with 31.5% in Wiltshire overall. A higher proportion of falls had been classified for the type of falls compared with the location classification. Only 2.2% of falls admissions in Salisbury and 2.6% in Wiltshire did not have the detail about the type of fall assigned to them.

Graph 5

Falls emergency hospital admissions for people age 65 and over, categorised by the type of fall (2011/12)

Legend:
- Ice and snow
- same level trip
- Same level - collision with person
- Fall involving bed
- Fall involving chair
- Fall on and from stairs and steps
- Ladder
- Other fall on same level

5.   Falls admissions in the context of all hospital admissions

One hypothesis for explaining the high falls emergency admissions from Salisbury is simply that people aged 65 and over in this Community Area are more likely and willing to access the hospital in an emergency. Graph 6 explores this idea by presenting the data for all emergency admission rates for this age group and shows Salisbury has the third highest rate. Furthermore, the rate is also high for Amesbury which also has a high falls admission rate.

Graph 6

All emergency admission rates for people age 65 and over by community area in 2011/12
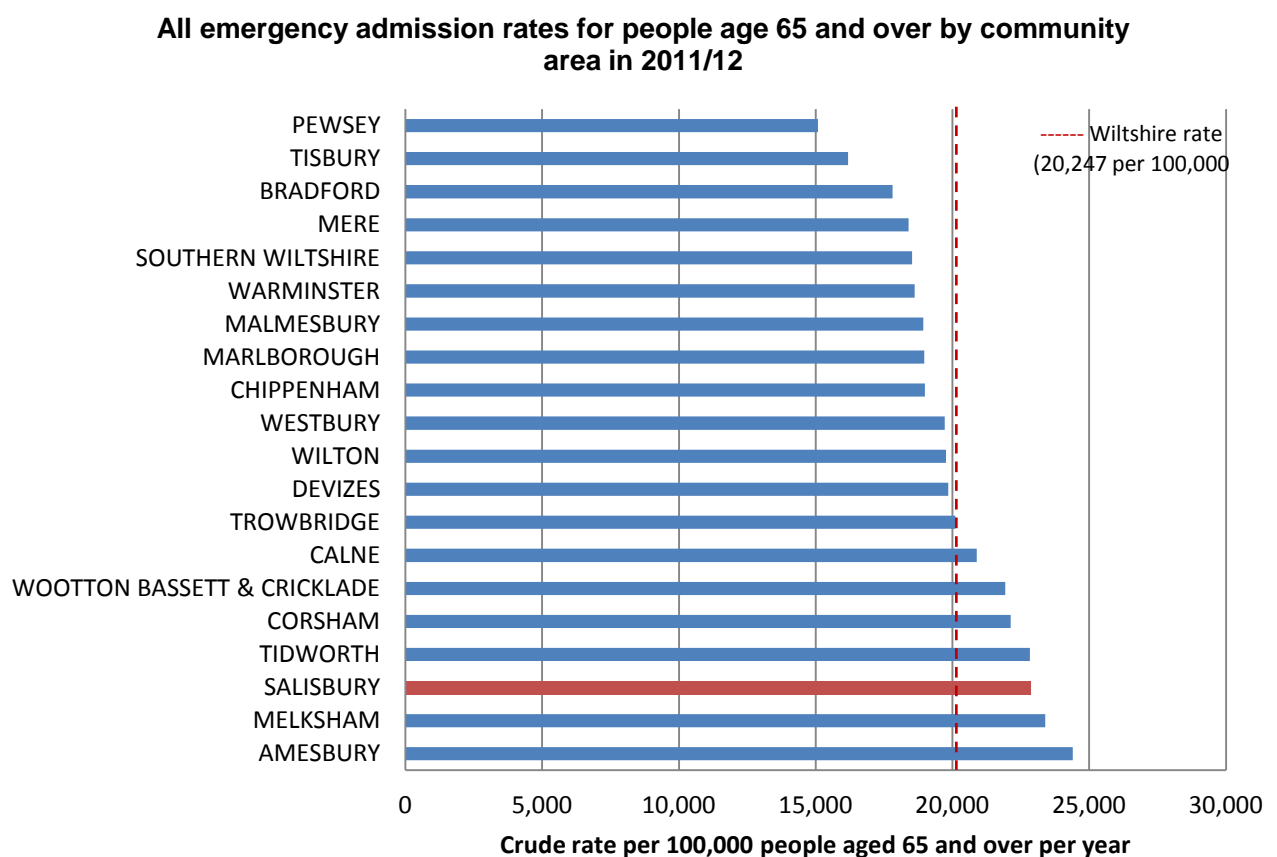
However, Salisbury has a higher percentage of 65 and over admissions which are from falls. So whilst this area does have higher admissions, it also has a higher proportion from falls (20% compared to the Wiltshire overall average of 15.1%).

6.   Data explanations

The differences in the Salisbury rate compared with the Wiltshire average could be due to chance, bias, other influencing variables or a true reflection of the situation.

Chance: The difference is unlikely to be due to chance since the rates are statistically significantly different.

Bias: It is plausible that there are error in the recording and coding of falls. However, this is unlikely to be different across different areas and thus should not present a bias. Another explanation could be that falls are dealt with or recorded differently in Salisbury Foundation Trust than at the RUH or Great Western Hospital

Other influencing variables (confounders): Age and gender are likely to influence the risk of a fall and Salisbury does have a higher proportion of their older age group who are age 85 or over and a higher proportion of these as women, compared with the Wiltshire average. However, when SARs are calculated to take account of age and gender variations in the Community Areas, Salisbury still features high for falls admissions.

It is possible that there are other factors which have not been taken into account. Five key factors that appear most significant in terms of increasing the likelihood of falls have been highlighted as
- Dementia
- Depression
- Multiple medications
- Visual impairment
- Inappropriate footwear (Lord *et al*, 2000)

These factors need to be explored further in terms of the Salisbury population.

7.   Limitations

As previously noted, this report is based just on hospital admission data. Since only around 20% of falls require medical attention, it is clear that this is only part of the picture.

Another limitation is that the admissions are reported in terms of numbers of episodes as oppose to numbers of people. Thus, Salisbury may have a higher rate of repeat fallers.

8.   Conclusions

Salisbury has higher admission rates for falls in the 65 and over age group, alongside Mere, Tidworth and Amesbury Community Areas, compared to the whole of Wiltshire. Furthermore, the rate is rising and at a rate quicker than the Wiltshire average.

It is evident that there is not a single explanation for the significantly high rate of falls in Salisbury. It can not simply be explained by demographic differences of this Community Area compared with other areas. Nor can it be explained by the overall high rates of emergency admissions to hospital in this age group in Salisbury.

In conclusion, the report highlights the need for strengthening falls prevention work locally. Strong evidence exists on what works to prevent falls and this is summarised in Annex 1.

9.   Recommendations:

- Present and discuss finding with the Health Select Committee and Wiltshire Falls and Bone Health Strategy Group.

- Strengthen and prioritise falls prevention work locally.

- Continue to explore the data further in order to inform prevention work:

    o Work has already started with Great Western Ambulance to collate data on 999 calls and ambulance attendance regarding falls in Wiltshire. This needs to be finalised and may then contribute to the wider falls picture.

    o Analysis of data relating to the proportion of disabled people in the 65 and over age group in each Community Area.

    o Further in-depth research into falls cases in the main high rate areas including Salisbury is required.

    o Ensure quarterly data monitoring systems are established.

Annex 1: Falls prevention – what works?

In July 2003, a Cochrane systematic review on Interventions for the prevention of falls in older people was updated (Gillespie *et al.* 2003). This has undergone peer review and is published in the Cochrane Library. This review has formed the basis for the evidence on effective falls prevention and informed the National Institute of Clinical Excellence falls assessment and prevention guidelines (NICE, 2004). The Wiltshire Falls and Bone Health Strategy highlights this evidence base.

The NICE clinical guideline on falls covers older people who live in the community, either at home, in a retirement complex, or in a residential or nursing home. In this guideline, an older person is defined as someone who is aged 65 or older. A summary of the recommendations from NICE is presented below:

1.1 Case/risk identification

1.1.1 Older people 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.

1.1.2 Older people reporting a fall or considered at risk of falling should be observed for balance and gait deficits and considered for their ability to benefit from interventions to improve strength and balance (Tests of balance and gait commonly used in the UK).

1.2 Multifactorial falls risk assessment

1.2.1 Older people who present for medical attention because of a fall, or report recurrent falls in the past year, or demonstrate abnormalities of gait and/or balance should be offered a multifactorial falls risk assessment. This assessment should be performed by a healthcare professional with appropriate skills and experience, normally in the setting of a specialist falls service. This assessment should be part of an individualised, multifactorial intervention.

1.2.2 Multifactorial assessment may include the following:

- identification of falls history
- assessment of gait, balance and mobility, and muscle weakness
- assessment of osteoporosis risk
- assessment of the older person's perceived functional ability and fear relating to falling
- assessment of visual impairment
- assessment of cognitive impairment and neurological examination

- assessment of urinary incontinence

- assessment of home hazards

- cardiovascular examination and medication review.

1.3 Multifactorial interventions

1.3.1 All older people with recurrent falls or assessed as being at increased risk of falling should be considered for an individualised multifactorial intervention. In successful multifactorial intervention programmes the following specific components are common (against a background of the general diagnosis and management of causes and recognised risk factors):

- strength and balance training

- home hazard assessment and intervention

- vision assessment and referral

- medication review with modification/withdrawal.

1.3.2 Following treatment for an injurious fall, older people should be offered a multidisciplinary assessment to identify and address future risk and individualised intervention aimed at promoting independence and improving physical and psychological function.

1.4 Strength and balance training

1.4.1 Strength and balance training is recommended. Those most likely to benefit are older community-dwelling people 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.

1.5 Exercise in extended care settings

1.5.1 Multifactorial interventions with an exercise component are recommended for older people in extended care settings who are at risk of falling.

1.6 Home hazard and safety intervention

1.6.1 Older people who have received treatment in hospital following a fall should be offered a home hazard assessment and safety intervention/modifications by a suitably trained healthcare professional. This should normally be part of discharge planning and be carried out within a timescale agreed by the patient or carer, and appropriate members of the healthcare team.

1.6.2 Home hazard assessment is shown to be effective only in conjunction with follow-up and intervention, not in isolation.

1.7 Psychotropic medications

1.7.1 Older people on psychotropic medications should have their medication reviewed, with specialist input if appropriate, and discontinued if possible to reduce their risk of falling.

1.8 Cardiac pacing

1.8.1 Cardiac pacing should be considered for older people with cardioinhibitory carotid sinus hypersensitivity who have experienced unexplained falls.

1.9 Encouraging the participation of older people in falls prevention programmes

1.9.1 To promote the participation of older people in falls prevention programmes the following should be considered.

- Healthcare professionals involved in the assessment and prevention of falls should discuss which changes a person is willing to make to prevent falls.

- Information should be relevant and available in languages other than English.

- Falls prevention programmes should also address potential barriers such as low self-efficacy and fear of falling, and encourage activity change as negotiated with the participant.

1.9.2 Practitioners who are involved in developing falls prevention programmes should ensure that such programmes are flexible enough to accommodate participants' different needs and preferences and should promote the social value of such programmes.

1.10 Education and information giving

1.10.1 All healthcare professionals dealing with patients known to be at risk of falling should develop and maintain basic professional competence in falls assessment and prevention.

1.10.2 Individuals at risk of falling, and their carers, should be offered information orally and in writing about:

- what measures they can take to prevent further falls

- how to stay motivated if referred for falls prevention strategies that include exercise or strength and balancing components

- the preventable nature of some falls

- the physical and psychological benefits of modifying falls risk

- where they can seek further advice and assistance

- how to cope if they have a fall, including how to summon help and how to avoid a long lie.

References:

Gillespie LD, Gillespie WJ, Robertson MC, Lamb SE, Cumming RG, Rowe BH. 2003. *Interventions for preventing falls in elderly people*. Cochrane Database Systematic Review. [Online] Available from: http://www.ncbi.nlm.nih.gov/pubmed/14583918 Accessed on 22nd February 2013.

Lord SR, Sherrington C, Menz HB (2000). *Falls in older people: risk factors and strategies for prevention.* Cambridge University Press.

NICE. 2004. *CG 21 - The assessment and prevention of falls in older people.* [Online]. Available from: http://publications.nice.org.uk/falls-cg21/guidance Accessed on 3rd December 2012.