TIIG

Merseyside & Cheshire
Local Authority Profile
Liverpool

Injuries in Older People
April 2012 to March 2015

November 2015

Simon Russell, Jennifer Brizell and Mark Whitfield

Centre for Public Health,
Faculty of Education, Health and Community,
Liverpool John Moores University,
Henry Cotton Campus,
15-21 Webster Street,
Liverpool, L3 2ET

cph.org.uk

0151 231 4500

tiig@ljmu.ac.uk

tiig.info

twitter.com/tiig_cph

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Key findings

- **Between April 2012 and March 2015 there were 205,843 injury attendances made by Liverpool residents to Emergency Departments (EDs) across Merseyside and Cheshire; of which 39,895 (19%) were made by people aged 65 years and over. This represents 19% of total injury attendances to EDs while representing 15% of the total population.**
- **Of attendees aged 65 years or over, 56% were female and 44% were male; where ethnicity was known, 88% of attendees were white.**
- **Across all EDs combined, 80% of attendances were classified as other injuries, 18% were falls, 1% were road traffic collisions and sports injuries.**
- **Females were more likely than males to attend an ED for falls (21% of total injuries compared to 14%).**
- **The time of day with the most attendances was between 10:00 and 11:59 (19%); the busiest day of the week was Monday (17% of attendances; and, the month with the highest average daily attendances was December (119 per day).**
- **People aged 65 years and over were more likely to arrive at the EDs by ambulance, be referred to an ED by the emergency services and be admitted into hospital than the average for all age groups combined. Older people were also more likely than other age groups to report their home as the injury location.**
- **Rates of injury attendances were found to correlate with deprivation, with increasing attendances found to be associated with increasing levels of deprivation.**
- **Rates of falls also correlated with deprivation but inconsistent categorisation of falls between EDs prevented more robust analyses.**

Older people in Liverpool

Liverpool is a city and metropolitan borough in Merseyside, in the North West of England. According to the mid-2013 census, Liverpool has a population of 470,780, of which 68,278 are people aged 65 years and over (ONS, 2015). Of people aged 65 years and over, 55% (37,868) are female and 45% (30,410) are male, compared to all age groups combined where 51% (238,139) are female and 49% (232,641) are male. People aged 65 and over in Liverpool represent 15% of the total population which is less than the average for Cheshire and Merseyside (19%), the North West region (18%) and England (17%). Despite having a lower proportion than other areas, the number of people aged 65 years and over is increasing in Liverpool and the UK generally. Owing to the post-war baby boom of 1946/47, the number of people who reached state retirement age in 2012 increased by 169,000 to 726,069 and the number of people turning or aged 65 is expected to continue increasing steadily (ONS, 2015).

Among older people, there are inequalities in life expectancy and general health, and it is often the poorest older adults who suffer the greatest disadvantage. Liverpool is one of the most deprived Local Authorities (LAs) in England and the Index of Multiple Deprivation (IMD) ranks the Borough as the second most deprived in the North West and the 5th most deprived in England (ONS, 2010).

Longer life expectancies do not always correlate with healthy life expectancy and it is important to understand the needs and risks for older people to ensure their later years of life are healthy and happy. A key aim of health and social care providers is to invest in local prevention services which offer advice, support and interventions which help healthy older people to live long and independent lives and help injured or unwell older people to regain independence and prevent or delay the onset of further health problems or injuries (DoH, 2009).

Falls comprise the majority of injuries among older people (DoH, 2001), can cause bone fractures and head traumas and can increase the risk of early death (NCIPC, 2014). Every five hours in England an older person dies as a result of a fall and fall-related injuries are the leading cause of death among older people (DoH, 2009). Liverpool which has a population of just over 450,000, will have approximately 25,200 falls among older people each year; approximately 3,600 of those will attend an ED and 1,800 will sustain a fracture, of which just under one third will be a fracture of the hip (DoH, 2009).

This Trauma and Injury Intelligence Group (TIIG) Local Authority Profile presents injuries suffered by older people in Liverpool using ED recorded data between April 2012 and March 2015. In the context of this report, older people are categorised as people aged 65 years and older, as agreed with local partners. This report will contextualise ED data by providing an overview of the population, highlighting who is at increased risk of injury and describing the specific level of need in Liverpool. This report also provides recommendations for local government and commissioners in terms of the efficient use of resources, and to health and social care providers in terms of delivering improved outcomes, with the overarching aim of enabling older people to live happy, healthy and independent lives.

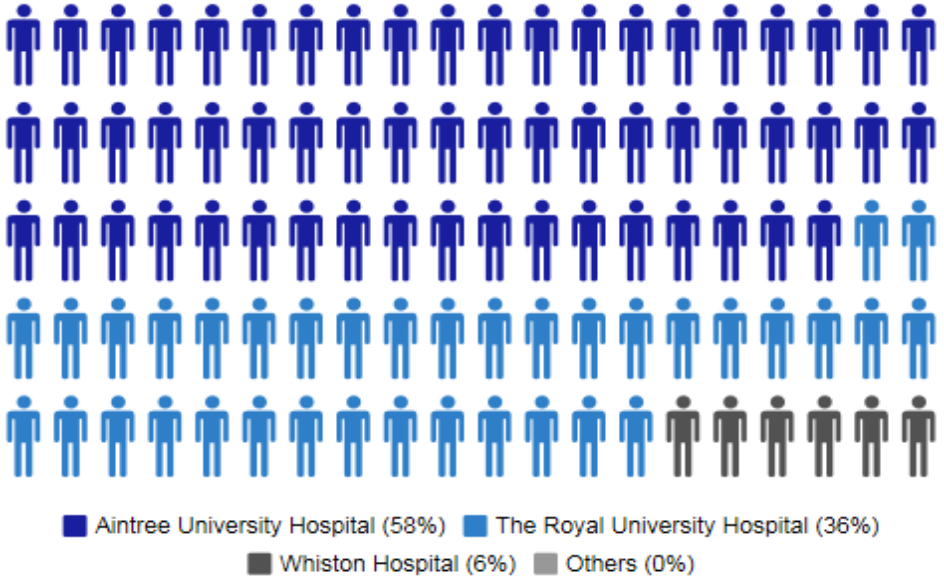
Injuries across Liverpool, April 2012 to March 2015

For all age groups, between April 2012 and March 2015 there were 205,843 injury attendances made by Liverpool residents to Emergency Departments (EDs) across Merseyside and Cheshire; 39,895 of these were made by people aged 65 years and over. Attendances by people aged 65 years and over accounted for 19% of total injury attendances to EDs while representing 15% of the total population of Liverpool. Of those, 22,977 (58%) attended Aintree University ED, 14,339 (36%) attended the Royal Liverpool University Hospital ED and 6% (2,439) of patients attended Whiston Hospital. There were 140 (<1%) combined attendances to Arrowe Park Hospital ED, Southport District General Hospital ED, Warrington Hospital ED, Countess of Chester Hospital ED, Leighton Hospital ED and Macclesfield District General Hospital ED.

Table 1. All injury attendances by people aged 65 years and over by Local Authority

Local Authority	2012/13	2013/14	2014/15	Total
Halton	3014	2896	2333	8243
Warrington	2583	3042	2434	8059
Cheshire East	6497	6652	6678	19827
Cheshire West	4662	4707	4329	13698
Knowsley	6540	5317	5042	16899
Liverpool	13970	13019	12906	39895
Sefton	14907	12755	13400	41062
St Helens	4679	3753	3210	11642
Wirral	6111	6293	6538	18942
Total	62963	58434	56870	178267

Figure 1. Attendances by people aged 65 years and over by Emergency Department

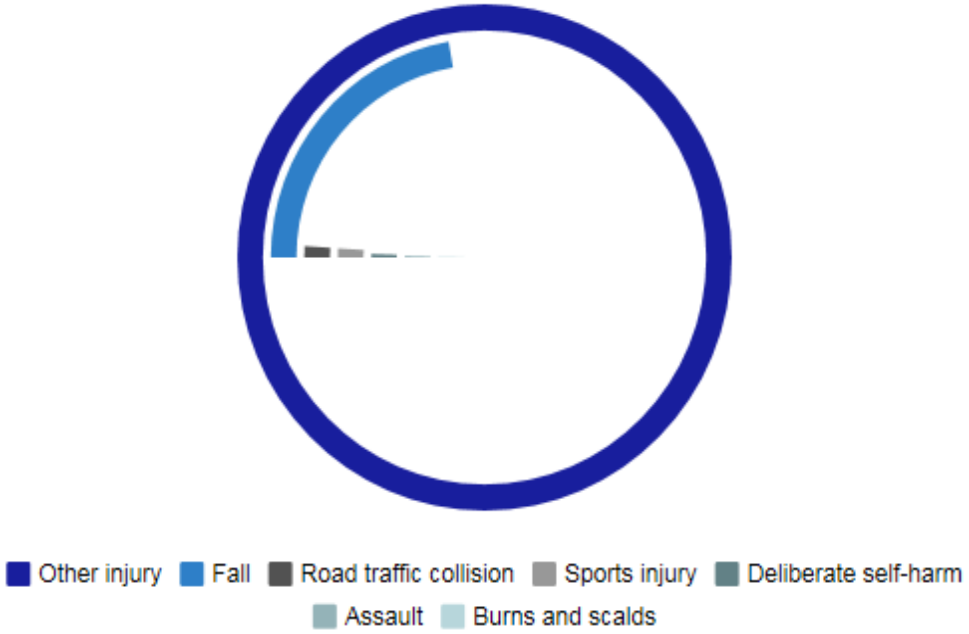


In terms of gender, 56% (22,204) of attendees aged 65 years and over were female and 44% (17,691) were male. Of people aged 65 years or over, 15,095 (38%) were aged between 65 and 74 years, 15,829 (40%) were aged between 75 and 84 years, and 8,971 (22%) were aged 85 years or over. In terms of ethnicity,[1] 14,859 (88%) of injury attendees from Liverpool were White, 1,230 (7%) were unknown, 247 (1%) were Black, 183 (1%) were from any other ethnic group and 132 (1%) were Chinese. There were 146 combined attendances by patients of Bangladeshi, Indian and other ethnic groups (1%). Table 2 displays injury attendances of Liverpool residents by financial year and injury group;[2] injuries overall decreased by 8% over this three year period.

Table 2. Injury attendances by Liverpool residents aged 65 years and over by financial year and injury group

Injury group	2012/13	2013/14	2014/15	Total	%[3]
Assault	27	47	19	93	0
Burns and scalds	30	21	25	76	0
Deliberate self-harm[4]	50	56	51	157	0
Falls	2400	1734	2971	7105	18
Other[5]	11194	10956	9695	31845	80
Road traffic collision	134	109	69	312	1
Sports injury	135	96	76	307	1
Total	13970	13019	12906	39895	100

Figure 2. Injury groups for people aged 65 years and over



"Among older people, there are inequalities in life expectancy and general health, and it is often the poorest older adults who suffer the greatest disadvantage."

[1] University Hospital Aintree, Arrowe Park Hospital, Southport District General Hospital and Warrington Hospital do not collect data on ethnicity. Unknown ethnicities from EDs who do collect this information have been included.

[2] Countess of Chester Hospital, Leighton Hospital, Macclesfield District General Hospital, Southport District General Hospital and Warrington Hospital do not categorise falls; these EDs accounted for 84 records.

[3] Due to rounding percentages may not add up to 100.

[4] Deliberate self-harm includes 94 records of overdose.

[5] Other injury includes 40 records of firework injuries, 12 unknown injuries and 11 records of injuries from ingestion.

Table 3, displaying injury attendances by age group and gender, shows that females were more likely to present to an ED for falls compared to males.

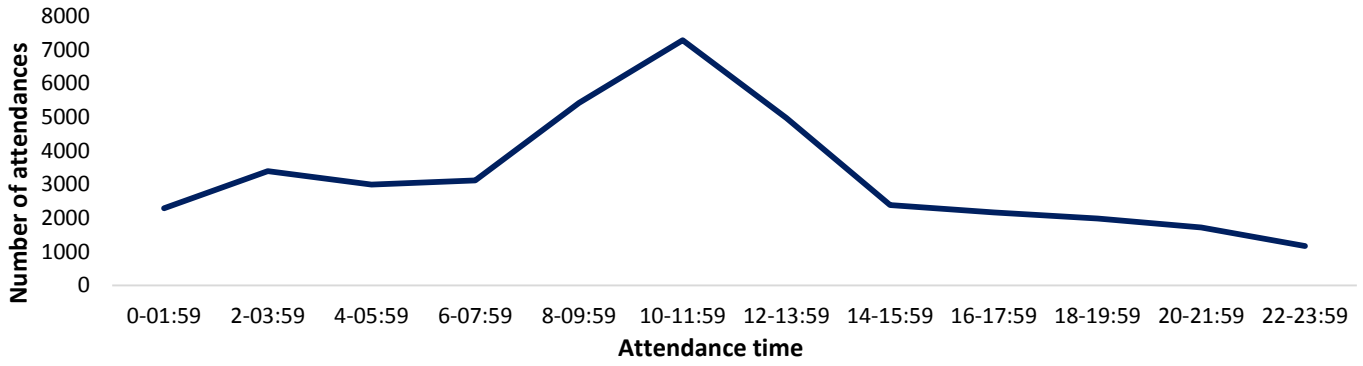
Table 3. Injury attendances by Liverpool residents aged 65 years and over by injury group, age group and gender[6]

Age	65-74				75-84				85+			
Gender	Male		Female		Male		Female		Male		Female	
Injury group	N	%[4]	N	%[4]	N	%	N	%[4]	N	%	N	%[4]
Assault	34	0	19	0	13	0	18	0	***	0	<10	0
Burns and scalds	15	0	17	0	11	0	18	0	5	0	10	0
Deliberate self-harm[5]	47	1	41	1	23	0	26	0	***	0	<20	0
Falls	842	11	1100	14	1072	15	1777	21	614	21	1700	28
Other[6]	6350	85	6324	83	6108	83	6548	77	2237	77	4278	70
Road traffic collision	104	1	69	1	53	1	51	1	17	1	18	0
Sports injury	66	1	67	1	53	1	58	1	19	1	44	1
Total	7458	100	7637	100	7333	100	8496	100	2900	100	6071	100

Time, day and month of attendance

Figure 3 displays attendances by people aged 65 years or over by time group. Where time groups were recorded (38,891), attendances peaked between 10:00 and 11:59 (7,281; 19%); attendances were lowest between 22:00 and 23:59 (1,165; 3%).

Figure 3. Injury attendances by Liverpool residents aged 65 years and over by time group



[6] Numbers less than five have been suppressed (***) in line with patient confidentiality. If there is only one number less than five in a category then two numbers will be suppressed at the next level to prevent back calculations from totals.

Monday had the most attendances overall for people aged 65 and over for all EDs combined with 17% (6,606) of total attendances; Sunday had the fewest attendances for EDs combined with 12% (4,710) of total attendances. December had the highest rate of attendances with an average of 119 attendances per day (3,674 in total), while September had the lowest rate with an average of 102 attendances per day (3,072 in total).

Arrival, referral and disposal

Table 4 displays the arrival mode to EDs for people aged 65 years and over compared to all age groups combined, and shows that a higher proportion of attendees aged 65 years and over arrived at EDs by ambulance compared to all age groups combined.

Table 4. Arrival mode by Liverpool residents aged 65 years and over compared to all age groups combined[6]

	People aged 65 and over		All age groups combined	
Arrival mode	N	%	N	%
Ambulance	23883	60	62667	30
Foot	2696	7	21500	10
Other	4602	12	32585	16
Police	<20	0	638	0
Private transport	6793	17	71810	35
Public transport	746	2	6368	3
Taxi	1157	3	10251	5
Unknown	***	0	24	0
Total	39895	100	205843	100

Table 5 displays the referral source to EDs for people aged 65 years and over compared to all age groups combined which shows that a higher proportion of attendees aged 65 years and over were referred by emergency services and a lower proportion were referred by friends or relatives compared to all age groups combined.

Table 5. Referral source for Liverpool residents aged 65 years and over compared to all age groups combined

	People aged 65 and over		All age groups combined	
Referral source	N	%[4]	N	%[4]
Carer	112	0	192	0
Educational establishment	30	0	357	0
Emergency services	7917	20	21116	10
Friend/relative	221	1	26899	13
GP	3819	10	10239	5
Health professional	1031	3	8357	4
Other[7]	6776	17	29371	14
Police	42	0	1486	1
Self-referral	19919	50	106856	52
Work	28	0	970	0
Total	39895	100	205843	100

Table 6 displays the disposal method for Liverpool residents aged 65 years and over by injury group and shows that approximately half of all attendances resulted in an admission to hospital for people aged 65 years and over, with the exception of attendances for assaults and road traffic collisions, where a higher than average proportion were discharged with no further treatment required. For all injury groups, compared to all age groups combined, a substantially higher proportion of attendances for people aged 65 years and over were admitted to hospital (56% compared to 26%) and a lower proportion were discharged with no follow up treatment required (28% compared to 45%).

Table 6. Disposal of Liverpool residents aged 65 years and over by injury group[6]

Injury group		Admitted	Discharged	Other	Referred	Total
Assault	N	31	36	11	15	93
	%	33	39	12	16	100
Burns and scalds	N	36	22	***	<20	76
	%	47	29	4	20	100
Deliberate self-harm	N	84	48	<10	<20	157
	%	54	31	6	10	100
Falls	N	3798	2066	139	1102	7105
	%	53	29	2	16	100
Other	N	18011	8859	875	4100	31845
	%	57	28	3	13	100
Road traffic collision	N	80	164	11	57	312
	%	26	53	4	18	100
Sports injury	N	135	98	9	65	307
	%	44	32	3	21	100
Total	N	22175	11293	1057	5370	39895
	%	56	28	3	13	100

Location of injury

Table 7 displays incident location by injury group for people aged 65 years and over which shows that a higher proportion of injuries among older people in Liverpool occurred at home and fewer occurred in a public place compared to all age groups combined.

[7] For people aged 65 years and over, 'Other' includes 19 records referred from NHS direct and unknown sources.

Table 7. Incident location for Liverpool residents aged 65 years and over compared to all age groups combined[8, 8]

Location	People aged 65 and over		All age groups combined	
	N	%[4]	N	%
Educational establishment	5	0	5922	3
Home	32296	86	133876	70
Other	3158	8	26228	14
Public place	1869	5	20417	11
Unknown	12	0	168	0
Work	116	0	5094	3
Total	37456	100	191705	100

LSOA breakdown

Table 8 displays the number and rate of attendances for the top ten Lower Super Output Areas (LSOAs) for people aged 65 years and over.

Table 8. Top ten LSOAs in terms of all injury attendance rates per 100 population for Liverpool residents aged 65 years and over

LSOA		65 and over population	Total attendances	Rate of attendances per 100 population
Name	Code			
Liverpool 004B	E01006662	431	1719	398.8
Liverpool 005A	E01006654	257	576	224.1
Liverpool 001C	E01006655	244	513	210.2
Liverpool 004A	E01006661	317	485	153.0
Liverpool 002E	E01006783	196	469	239.3
Liverpool 011B	E01006603	292	427	146.2
Liverpool 006D	E01006791	311	404	129.9
Liverpool 009D	E01006613	286	398	139.2
Liverpool 003C	E01006784	162	382	235.8
Liverpool 010A	E01006598	234	377	161.1

[8] Whiston Hospital does not record incident location and all records from this ED have been omitted.

Figure 4 displays the rate of all injury attendances per 100 population by Liverpool residents aged 65 years and over. As displayed, the majority of LSOAs with the highest rates of attendance are clustered in the north of the Local Authority.

Figure 4. All injury attendance rates per 100 population for Liverpool residents aged 65 years and over, April 2012 to March 2015

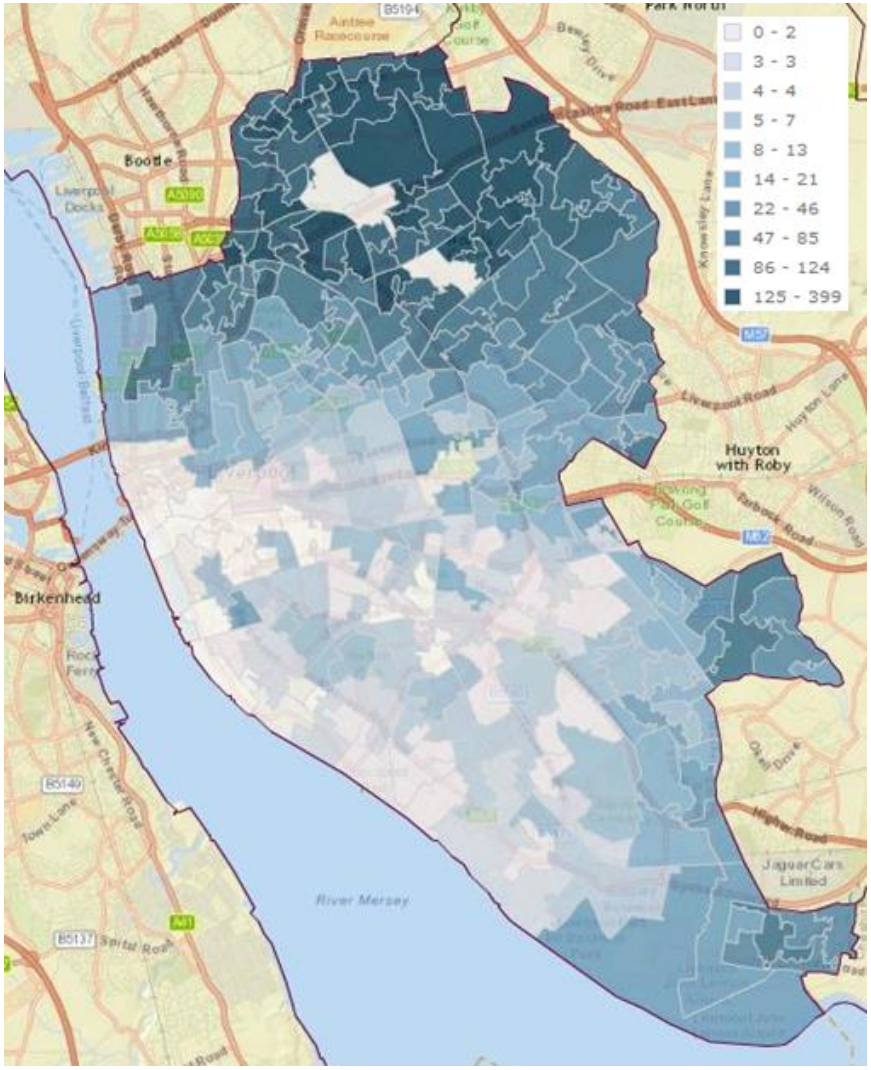
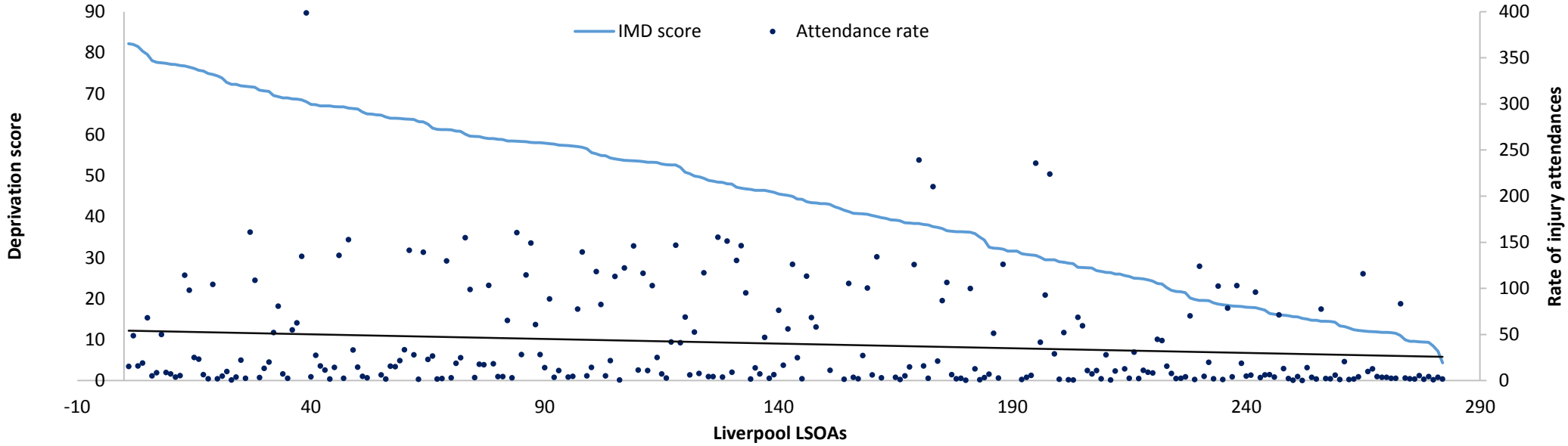


Figure 5 displays all injury attendance rates per 100 population for Liverpool residents aged 65 years and over, with a linear trend line, plotted against deprivation scores, where higher scores represent higher levels of deprivation, for each LSOA. As shown, attendance rates generally declined with decreasing level of deprivation.

Figure 5. All injury attendance rates per 100 population for Liverpool residents aged 65 years and over for each LSOA by deprivation score, April 2012 to March 2015



Falls

Falls accounted for 18% (7,105) of all injury attendances for people aged 65 years and over in Liverpool, however, this is likely to be substantially lower than the actual proportion. While both the Royal Liverpool Hospital and Aintree Hospital EDs (which account for 94% of injury attendances by Liverpool residents) categorise falls, they accounted for 28% and 9% respectively of injuries among people aged 65 years and over, implying a large number of falls are being categorised as other injuries at both EDs.

"More patients aged 65 and over are admitted to A&E following an injury than any other age group"

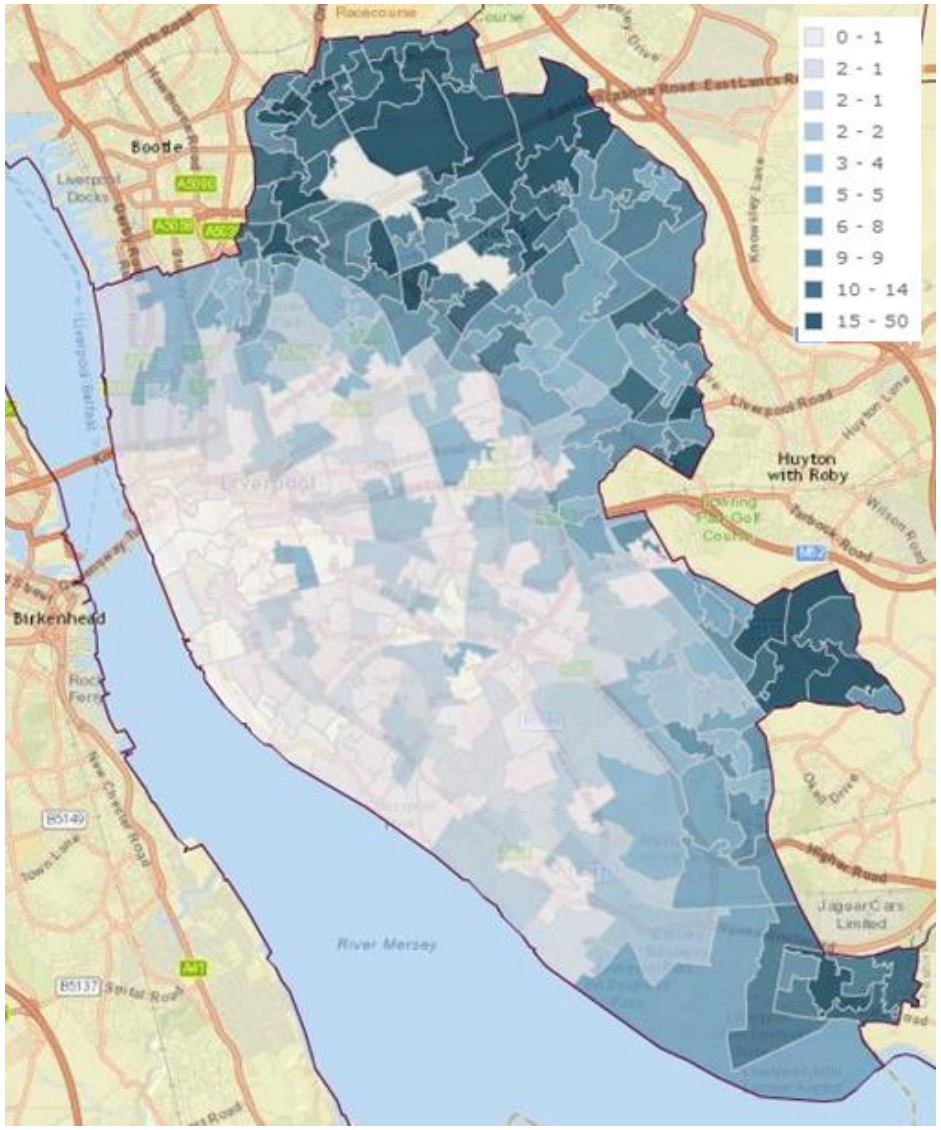
Table 9 displays the number and rate of attendances for the top ten Lower Super Output Areas (LSOAs) for people aged 65 years and over.

Table 9. Top ten LSOAs in terms of fall attendance rates per 100 population for Liverpool residents aged 65 years and over

LSOA		65 and over	Total fall	Rate of fall attendances
Name	Code	population	attendances	per 100 population
Liverpool 004B	E01006662	431	216	50.1
Liverpool 045C	E01006708	308	80	26.0
Liverpool 005A	E01006654	257	70	27.2
Liverpool 025B	E01006574	242	59	24.4
Liverpool 045B	E01006707	292	54	18.5
Liverpool 059C	E01006755	228	54	23.7
Liverpool 040D	E01006771	295	47	15.9
Liverpool 004A	E01006661	317	45	14.2
Liverpool 006D	E01006791	311	44	14.1
Liverpool 002E	E01006783	196	43	21.9

Figure 6 displays the rate of fall attendances per 100 population by Liverpool residents aged 65 years and over. As displayed the majority of LSOAs with the highest rates of attendance are clustered in the north of the Local Authority.

Figure 6. Fall attendance rates per 100 population for Liverpool residents aged 65 years and over, April 2012 to March 2015



Recommendations

- Consider mechanisms to improve the categorisation of injury groups, particularly in relation to falls at the Royal Liverpool Hospital and Aintree Hospital EDs. This can be achieved through multi-agency working and meetings between the TIIG team, stakeholders and EDs.
- Consider mechanisms to include the incident location data item to the IT system at Whiston Hospital ED. This can primarily be achieved through liaison between the TIIG team and the systems team within the ED.
- Conduct further analyses to understand the disproportionate gender split in terms of injury attendances. Community partners and preventative interventions could be improved by ascertaining whether the higher number of females presenting to EDs is due to higher incidence of injuries or unwillingness by males to seek medical services when injuries occur.
- Conduct further analyses to understand why a relatively high proportion of attendees aged 65 years and over were referred to EDs by emergency services and a relatively lower proportion were referred by friends or relatives compared to all age groups combined. Such a trend could imply that older people are sustaining more serious injuries or that older people do not have the support networks available to younger people. If older people are lacking support, explore mechanisms to improve outreach and support services for older people.
- Explore why older people presenting for deliberate self-harm were admitted and referred for further treatment less than other injury groups. Deliberate self-harm has high rates of repeat attendances and is a high risk factor for suicide. Consider evaluating the process of how self-harm is dealt with among older people within EDs; for example consider giving psycho-social assessments for all patients presenting for self-harm and offering psychiatric follow-up appointments where appropriate.
- Consider ways that TIIG data can feed into strategies to reduce the risk of falls for older people. Older adults who have a history of falls are significantly more likely to fall again (WHO, 2004); therefore patients attending EDs for falls, can be referred to various follow up treatments or preventative interventions. In addition to medical treatment for injuries, patients may also require: mental health assessments to identify feelings of social isolation or depression; rehabilitation or counselling to reduce the fear of falling again; regular eye tests to maximize vision; and, enrolment on exercise programs to increase leg strength and improve balance.
- In addition to older people who have previously fallen, individuals at elevated risk of falling are patients: who suffer from neurological conditions or cognitive problems; who are visually impaired; who are recovering from infections; and, who have mobility issues or are suffering from bone or joint conditions such as arthritis (The Health Foundation, 2012). ED attendees, especially elderly patients, suffering from any of the above conditions may be appropriate for specific follow up treatments.
- Consider the high proportion of injuries for people aged 65 years and over that occur in the home. Community interventions may seek to make homes safer in a number of ways, including reducing tripping hazards, adding grab bars or railings at strategic points, and improving lighting within the home.
- Explore why rates of attendance for people aged 65 years and over are highest in the LSOA in the north of the Local Authority. Such exploration may include a further analysis of the relationship between deprivation and injury, and an assessment of extrinsic factors, or dangerous environments, which may include busy roads, hazards for pedestrians or risk factors in or around people's homes.

These recommendations are unlikely to be achieved without sustained working between cooperating agencies. However their implementation would be likely to initiate substantial positive change by preventing and reducing unintentional and intentional injuries among older populations in Liverpool.

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