THE CENTRE FOR
CSR
SEARCH RESEARCH

A study of people with dementia reported as missing during 2012 and 2013 held on the Northumbria Police Integrated Computerised Communications System

Contents

The Centre for Search Research
August 2015

Introduction

The purpose of this study was to provide statistics to assist with the rapid location of people with dementia who are reported missing in the Northumbria Police area. It is part of a much wider project involving academics from Edinburgh University and elsewhere, plus clinicians and carers. It can nevertheless be considered as a stand-alone investigation into persons with dementia who have gone missing in the Force area.

Permission was given to access data held on the Northumbria Police Integrated Computerised Communications System (NPICCS). The method used was to search the computerised Force Wide Incident Number system (FWIN) for records that had:

- a missing person incident opening code, plus
- the words 'dementia' or 'Alzheimer's' contained within the FWIN text, plus
- a reference number that referred to a record on the computerised vulnerable persons system

The data collected provided a group of 128 people with dementia who were the subject of missing person incidents during 2012 and 2013. **From now on these are referred to as the sample population.**

It has to be said that there were other instances of persons with dementia in the force area who went missing during this period and who were not on NPICCS, usually because they were located by family or friends before the incident might otherwise have been reported to the police.

A by-product of the study was the opportunity to compare these Northumbria Police statistics with national statistics produced by The Centre for Search Research as part of the UK Missing Person Behaviour Study.

The assistance of Ch. Supt. Gordon Milward was greatly appreciated during the data collection phase of the study.

Sample population general statistics

Table 1: sample population by year and gender

	female	male	total
2012	21	37	58
2013	34	36	70
	55	73	128

Table 2: sample population by age and gender

	female	male	total
40 to 49	2	1	3
50 to 59	1	6	7
60 to 69	10	6	16
70 to 79	23	31	54
80 to 89	17	27	44
90 to 99	2	2	4
	55	73	128

The ages ranged from 47 to 92 for females and 44 to 91 for males. Just over three quarters (77%) of the sample population were aged between 70 and 89.

Table 3: sample population by terrain and gender

	female	male	total
Farmland	2	0	2
Urban	50	71	121
Other	3	2	5
	55	73	128

The type of terrain in which the incident occurred was investigated because the UK Missing Person Behaviour Study (UKMPBS) had shown that for incidents involving people with dementia, there was a variation between different types of terrain particularly with regard to the location at which the missing person was found and the distance at which they were found from their last known point. The types of terrain reported in UKMPBS are given in the appendix.

The incidents with terrain types reported here as 'Other' involved the missing person travelling long distances between urban areas by train or car, and therefore did not take place in one type of terrain.

Table 4: sample population by level of dementia and gender

	female	male	total
Mild	11	25	36
Severe	6	8	14
Not reported	38	40	78
	55	73	128

The level of dementia was taken from NPICCS and is as reported to the police or inferred from the missing person record rather than a statement from a medically qualified person, and therefore should be treated with caution.

Outcome: the condition of the missing person when found

Table 5: sample population by outcome and gender

	female	male	total
Deceased	0	1	1
Injured	2	1	3
Unhurt	53	71	124
	55	73	128

Only 3% of the sample population resulted in the missing person being either dead or injured when located.

The location at which the missing person was found

This is arguably the most important information from the point of view of the officer who is managing the search for the missing person. The reason for this is that if in the past a large proportion of missing people with dementia have been found in particular locations (for example wandering in the street or returning to their own home address) then there might be good reason to

suppose that future similar missing persons will do the same. This analysis has made use of the terminology from the UKMPBS to facilitate comparison (see appendix).

Table 6: sample population by location found and gender

	female	male	total	%
Building	24	30	54	42
Travel aid	31	42	73	57
Other	0	1	1	1
	55	73	128	100

The term 'building' can refer to either a residential building that is intended for habitation (for example a house or a care home) or a public building (for example a shop, a railway station, a hospital). The term 'travel aid' refers to any defined route that a person might follow, typically a street or road, or maybe a footpath through a field or wood. The location type 'other' refers to the member of the sample population who was found dead in undergrowth on a golf course two weeks after going missing.

Analysis showed that there was no significant difference between the locations at which males and females in the sample population were found. Similarly the level of dementia as reported had no bearing on the location at which they were found.

Analysis of the type of building in which the 54 members of the sample population reported as found in a building were located gave the following:

Table 7: sample population found in a building, by type of building and gender

	female	male	total	%
Public building	12	13	25	46
Residential property	12	17	29	54
	24	30	54	100

There was no significant difference between males and females in the sample population with regard to the type of building in which they were found.

Analysis of the 25 incidents in which the member of the sample population was found in a public building gave the following results:

Table 8: sample population numbers found in a public building

Shop or supermarket	6
Hospital	4
Pub	3
Railway station	3
Metro station	2
Sports centre	2
Airport, bus station, golf club,) health centre, police station)	once each
	25

Analysis of the 29 incidents in which the member of the sample population was found in a residential building gave the following:

Table 9: sample population numbers found in a residential building

		%
Their home address	18	62
Home address of a family member	8	28
Missing person's former home address	3	10
	29	100

In both tables 8 and 9 the numbers involved were too small to indicate significant gender differences. It is worth noting that the building in which the members of the sample population were most frequently located was described as their home address.

The analysis of the 73 incidents in which the member of the sample population was found on a travel aid gave the following:

Table 10: sample population found on a travel aid, by type of travel aid and gender

	female	male	total	*%*
Path or track	2	0	2	*3*
Street or road	29	42	71	*97*
	31	42	73	*100*

There was no significant gender difference between these locations.

Analysis of the locations at which members of the sample population found in a street or road were found gave the following:

Table 11: sample population numbers in a street or road

			%
In the street	59		*83*
On a bus	6	)	
In his or her car	3	)	*17*
In a garden	2	)	
In a taxi	1	)	
	71		*100*

Overall, the locations at which the members of the sample population were found could be summarised as follows by combining the results in tables 7 and 11:

Table 12: summary of locations at which the sample population were found

	total	*%*
In the street	59	*46*
Residential property	29	*23*
Public building	25	*19*
Elsewhere	15	*12*
	128	*100*

This is starting to reveal information that could be useful to the officer managing the search.

Mode of travel

An examination of the mode of travel used by the sample population gave the following:

Table 13: sample population by mode of travel and gender

	female	male	total	*%*
Walk	23	31	54	*42*
Not known	19	27	46	*36*
Bus	8	10	18	*14*
Car	1	3	4)	
Train	3	1	4)	*8*
Metro	0	1	1)	
Taxi	1	0	1)	
	55	73	128	*100*

where 'not known' means either that it was not recorded in NPICCS or it was recorded that the missing person did not remember.

There was no significant gender difference for the mode of travel. The statistics from tables 12 and 13 were combined to give the following:

Table 14: sample population by location found and mode of travel

	walk	bus	not known	other	total	*%*
In the street	36	6	17	0	59	*46*
Residential property	8	5	14	2	29	*23*
Public building	5	1	14	5	25	*19*
Elsewhere	5	6	1	3	15	*12*
	54	18	46	10	128	*100*

where the mode of travel 'other' means either car, train, metro or taxi, and the location 'elsewhere' means that the person was found either on a bus, in his or her car, in a garden, on a path, in a taxi or on a golf course (deceased).

Virtually all of the incidents took place in urban areas and most of them (about 85% according to the age profile) involved people who most likely had a bus pass. Urban areas tend to be well supplied with frequent bus services, which, coupled with the fact that many people living in urban areas will regularly walk to a bus-stop and get on a bus to travel a relatively short distance makes the bus / walk distinction in the statistics possibly blurred.

It is worth pointing out that while 56% of the sample population either walked or used a bus as their primary means of travel, if we assume that the 'not knowns' are counted as either walking or getting a bus, as seems highly likely, then the overall proportion of walkers and bus riders rises to 92%.

Distance found from last known point (LKP)

There are some points about the information relating to the distance at which the members of the sample population were found from the LKP that are worth making before we look at the results from the analysis.

1. There was a wide range of values, from zero to 650 km.
2. There were 16 incidents out of 128 (1 in 8 of them) in which the member of the sample population was found 0 km from their LKP – in other words, one in eight of them came back to the place from which they had originally gone missing. In fifteen of these this was their home address and in the one other it was the home address of a relative whom they had been visiting.
3. There were seven incidents in which the missing person was found at more than 50 km from their LKP. Four of these involved train journeys, two involved car journeys and in the other the mode of travel was not known but was suspected to be by train. The remaining two incidents where the mode of travel was known to involve travelling by car showed distances of 17 and 18 km; one of these involved the missing person being found confused and lost on a car journey to visit a relative who had previously moved to Canada, and the other was part of a shopping

expedition that involved travel by car and metro. With possibly one exception, these nine incidents (five involving train travel and four car travel) cannot be considered as 'local' trips and could reasonably be excluded from the rest of the study.

4. There was a problem relating to estimating the distance from their LKP that the missing person was found due to the way in which the location found was often reported. To illustrate this point: Chillingham Road is about 5 km long, and to record the find location as Chillingham Road without further detail when the missing person was last known to be in Glasgow does not affect the accuracy in any meaningful way, but if their last known location was in an adjacent street then it does. It was not always possible to resolve this from the information available on NPICCS.

The median distances give a simple way of comparing different modes of travel. Median distances were: walking 1.3 km, by bus 5.2 km, not known but presumed to be either walking or by bus 5.5 km (which suggests they were more likely to have travelled by bus), by car 35 km and by train almost 400 km. It seemed therefore that the incidents divided themselves into three groups:

1. The local travellers; these were either walking, on a bus, or presumed on a bus plus on a metro or in a taxi (one occurrence of each of these last two); this gave a total of 119 incidents with 54 walkers and 65 others. A comparison of the median distances suggested that they should be considered as two separate groups, namely the walkers and the others.
2. The non-local travellers who used cars and trains for their journeys, which were of a much greater distance.

There was nothing to be gained by further analysis of the non-local travellers in the context of distance travelled, and so attention was focused on the two groups of local travellers: those who were known to have walked and those who used other means of travel. Similarly, there was nothing further to be gained from the inclusion of the 16 members of the sample population who returned to their LKP.

Table 15: local travellers in the sample population, percentile distances (km) found from LKP, by mode of travel

	distances in km	
percentile	walk	others
	n = 49	n = 54
10	0.30	1.1
20	0.50	2.7
30	0.60	3.2
40	0.92	4.2
50	1.3	5.3
60	1.5	6.2
70	2.2	7.1
80	3.1	8.0
90	4.6	11
100	8.1	36

Note: table 15 does not include the 16 incidents in which the missing person turned up back where they started (zero km, 15 to their home address and 1 to the home address of the family member they were currently visiting).

There were no gender differences for the two sets of local travellers.

Hours missing

As with the record of the distance travelled, there were uncertainties regarding the time for which the person had been missing. Often the actual time at which the person had gone missing was not known; the time recorded in NPICCS was often the time at which they were reported missing rather than when they went missing, and might have been several hours later. Similarly, the time that they were found was often the time that their discovery was entered in the log rather than the actual time that they were located.

That apart, it is tempting to imagine that the longer a person has been missing then the further they are likely to be from their LKP. This was not the case for either of the two sets of local travellers. Excluding the sixteen persons who returned to their LKP, the coefficients of correlation were 0.17 for walkers and

0.04 for the others. These values suggest that the distance from their LKP at which the missing person was found was not related in any way to the time for which they had been missing.

Following a plan

A plan means any statement of intent that has been articulated or might be discerned from regular behaviour. Typical examples relating to members of the sample population were:

- They said they were going to the shops / pub / to visit a relative
- They had told someone they were unhappy in the care home and were going to see their son / daughter about leaving
- They went for their regular walk, which usually took them 30 minutes

They were subsequently reported as missing when they failed to arrive at their intended destination at the expected time. Reasons for this were generally along the lines of:

- They got lost on the way
- They were unable to remember where they were going
- They were delayed for reasons beyond their control

Being aware of a plan might help to point the search in the right direction, even though the member of the sample population wasn't always carrying it out correctly. More than half of the members of the sample population (67 out of 128, 52%) either had or were thought to have a plan of some sort rather than have wandered off from their LKP for no apparent purpose. When found, 48 of these (72%) were considered to have followed it either completely (37) or partially (11). This is an interesting statistic and suggests that knowledge of either the missing person's routine or intended actions could help in locating them in a significant proportion of incidents.

Comparison with previous episodes of being missing

The data from NPICCS showed the following:

Table 16: sample population and the incidence of previous episodes

		%
Reporting party said that it had not happened before	51	*40*
Not reported or unknown	42	*33*
Previous episodes admitted by reporting party	35	*27*
	128	*100*

These statistics are fairly imprecise. On a number of occasions it was admitted that the person had gone missing previously even though there was no report in NPICCS because the missing person had been located by friends or family or had arrived at their destination before it was felt necessary to involve the police. In eight of the incidents where previous episodes were admitted (23% of them) the missing person was said to have behaved in a similar manner, typically eventually returning to their home address. This is a very approximate statistic but could be useful on future occasions.

Guidelines for the Immediate Response to a missing dementia sufferer incident

These are points to bear in mind when a person with dementia is reported missing. They are based on the statistics reported in this paper from the analysis of the incidents relating to the sample population.

- In the majority of cases (97%) the missing person was found alive and unhurt
- No difference was found between incidents involving missing female and male members of the sample population or between different levels of dementia
- For those who were known to have walked away from their last known point 67% were found walking in the street
- For those who were thought to have travelled on a bus 53% were found in a building (most likely to be their home address or the home address of a relative) and 36% were found in the street
- One in eight of the members of the sample population returned to their last known point; the average time before they returned was 4½ hours and the maximum was 7¾ hours
- For those who did not return to their last known point, 50% of those who were known to have walked away were found within 1.3 km of their last known point and 50% of those who were thought to have travelled on a bus at some point were found within 5.3 km
- Of those known to have some kind of plan or routine 72% followed or tried to follow it
- Of those who had been missing previously 23% behaved in a similar manner

Key questions that need to be asked:

- Had they told anyone where they were going?
- Did they have a regular routine and might they be following it?
- Have they been missing on a previous occasion, and if so where did they go?
- Were they known to have *walked* away from their last known point?

Suggested strategy

- Check any locations that they had told someone they intended to head for.
- Check places they are known to visit as part of their regular routine.
- Check any locations they visited on previous occasions when they went missing.
- For those known or suspected to be walking, check the streets and roads within 1.5 km of their last known point
- Check the home addresses of the missing person; their home address could be a care home.
- Check the home addresses of family members.

Appendix: Extracts from the UK Missing Person Behaviour Study

UK statistics for people with dementia

a. **Category definition**: this category contains all missing persons with some form of dementia, including those suffering from Alzheimer's Disease. Gibb and Woolnough[1] provide a useful discussion on different forms of dementia.

b. **All searches**: n = 194

Table: people with dementia, by terrain and gender, all searches

	female	male	other*	total
urban	29	62	8	99
farmland	21	41	3	65
woodland	4	6	1	11
moorland	0	8	0	8
water margin	3	3	0	6
plantation	1	2	0	3
crag / broken ground	1	1	0	2
	59	123	12	194

* 'other' means that the gender was not reported

c. **Fatality rate**: the fatality rate for this category was 18%. This is not significantly different to the overall fatality rate for all the other categories in the study. There was no discernible gender difference or difference between the fatality rates for different types of terrain.

d. **Outcome – condition if found**: significantly more people with dementia were found injured than was the case for all other categories. There was no discernible gender difference or difference between the outcomes for different types of terrain.

Table: people with dementia, outcome, all searches

	all searches	
	n	%
fatal	34	18
injured	31	16
no trace	6	3
unhurt	123	63

e. Location found: there was a significant difference between the locations in which people with dementia missing in farmland and urban areas were found, and in addition there was a significant gender difference for people missing in farmland.

Table: people with dementia, location found by terrain and gender

	farmland female		farmland male		urban		others	
	n	%	n	%	n	%	n	%
travel aid	8	42	12	29	35	36	1	4
building	5	26	8	20	29	30	2	7
linear feature	2	11	12	29	17	17	5	21
open ground	1	5	7	17	11	11	8	29
trees	3	16	1	2	1	1	7	21
water	0	0	1	2	4	4	5	18
not recorded	0	0	0	0	1	1	0	0

The following additional information was provided with regard to five incidents for which the location was reported as 'open ground': hit a natural barrier and sat down, stuck in dense undergrowth, asleep on a park bench, found in thick bushes and found in a patch of overgrown nettles and grass.

Table: people with dementia, location found by terrain and gender, detail

	farmland female		farmland male		urban		others	
	n	*%*	n	*%*	n	*%*	n	*%*
travel aid								
path / track	2	*11*	6	*15*	7	*7*	1	*4*
road	6	*32*	6	*15*	28	*29*	0	*0*
building								
building / shelter	1	*5*	3	*7*	8	*8*	1	*4*
habitation	4	*21*	5	*12*	21	*21*	1	*4*
linear feature								
stream / ditch	1	*5*	6	*15*	7	*7*	3	*11*
wall / fence line	1	*5*	6	*15*	10	*10*	2	*7*
trees								
forest / woodland	2	*11*	1	*2*	1	*1*	5	*18*
forest edge/clearing	1	*5*	0	*0*	0	*0*	2	*7*

f. **Distance found from IPP**: there was no significant difference between the distances travelled by people with dementia and all the other categories in the study; there was, however, a significant difference between people with dementia missing in farmland and in urban environments.

Table: people with dementia, distance found from IPP, by terrain type

percentile	farmland km	urban km		percentile	others km
10	0.40	0.16		20	0.64
20	0.50	0.30		40	1.0
30	0.70	0.50		60	2.0
40	1.0	1.0		80	2.5
50	1.2	1.7		100	9.9
60	2.0	2.7			
70	3.0	4.0			
80	5.2	5.0			
90	8.8	8.7			
100	84	33			

g. Possible scenarios: based on the information given above for this category, some of the following comments will probably occur in the most likely scenarios for missing people with dementia. In practice, the search manager should not rule out other plausible scenarios.

- o   the missing person is likely to be found alive (82% of incidents)
- o   for incidents in farmland, females are most likely to be found on a travel aid (42%) or in a building (26%); males are equally likely (29%) to be found on a travel aid or next to a linear feature, or in a building (20%)
- o   in urban areas, the missing person is most likely to be found on a travel aid (36%) or in a building (29%)

UK Missing Person Behaviour Study: terrain types

crag / broken ground … rugged upland
farmland … lowland arable or pasture
moorland … remote areas of upland or wilderness where rocky outcrops are in the minority
plantation (dense) … developed forest or plantation
urban … within the confines of a city, town or village or hamlet
water margin … coastline, shoreline of large bodies of water or rivers, as well as the water itself
woodland (open) … parkland or wooded area where passage is relatively easy

UK Missing Person Behaviour Study: outcome - the condition of the subject if found

fatality … dead when found
injured … needed significant medical treatment when found
unhurt … did not need significant medical treatment when found
no trace … not found

UK Missing Person Behaviour Study: location - the feature that best describes where the person was found

building / shelter … any man-made structure not usually used or intended for human habitation

forest / woodland … any forest or plantation where progress is difficult except on paths, tracks or roads

forest edge / clearing … open woodland, or adjacent to a forest or wood, or a significant open area within a forest or wood

habitation … a man-made structure used or intended for human habitation

open ground …   not on, in or immediately adjacent to any other location described here

path / track … not metalled (paved), may be suitable for vehicles

road … metalled (paved), classified or unclassified

stream / ditch … a drainage that can be easily crossed on foot

wall / fence line … any man-made structure enclosing an area of land

water / water's edge … in or adjacent to a body of water that could not be easily crossed on foot

Reference

1   Gibb GJ, Woolnough P. *Missing Persons.* Aberdeen: Grampian Police, 2007, pp 28–29; available from http://www.searchresearch.org.uk/www/ukmpbs/