



SILVER CHAIN

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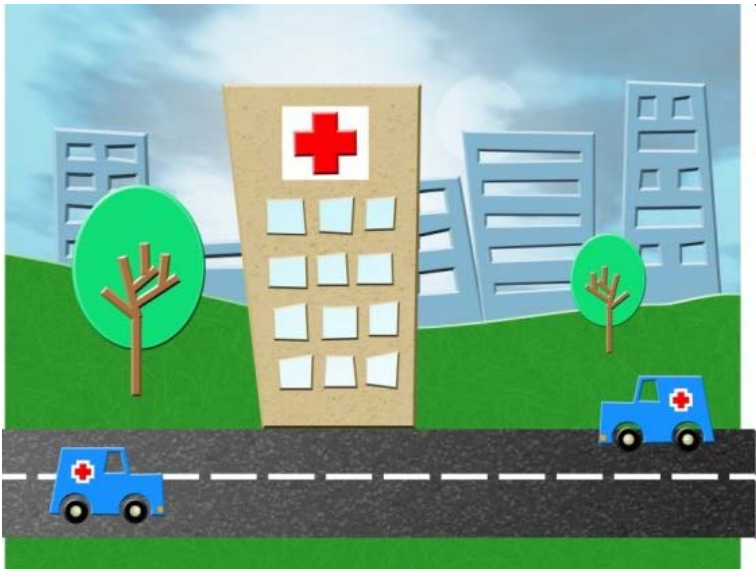
Predicting Hospital Admissions of Silver Chain Clients

Australian Association of Gerontology
National Conference
November 2008

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- Hospital admissions represent significant cost to the WA community
- Understand the characteristics of clients who have frequent/lengthy hospital stays
- Study built on previous research by Silver Chain

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- Identify Silver Chain clients who were admitted to hospital during the 5 ½ year period 1 July 1999 to 31 December 2004, and describe their admissions
- Describe the demographic and clinical characteristics of the Silver Chain clients who experienced these hospital admissions
- Determine if any characteristics could be use to predict which community care clients were likely to have frequent and/or lengthy hospital stays

How did we do it?



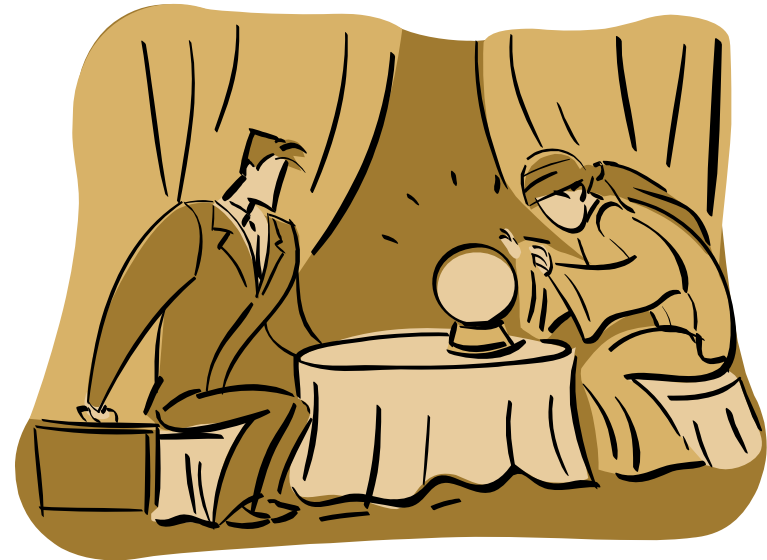
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- Linked data
- Data set included hospital records of 67,674 individuals who were Silver Chain clients at the time of their hospitalisation
- Intra-hospital admissions removed
- Included 286,185 admissions



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- Admissions
 - Length of stay
 - Number
 - Bed days
- Client characteristics
 - Demographics
 - Charlson Co-morbidity Index
 - Diagnosis
- Predicting long hospital stays

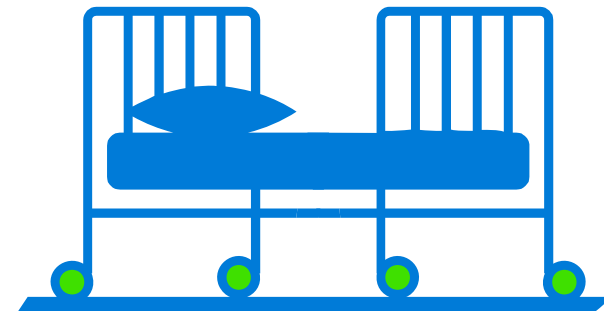


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- LOS - 7.6 days (sd 16.93; <1-1,250)
- Admissions - 4.2 (sd 6.2, 1-247)
- Total time spent in hospital 32.2 days (sd 49.3, 1-1,425)
- Bed days – 1,085
 - 886 metropolitan, 198 rural
 - 714 public hospital , 371 private hospitals
- Discharged:
 - 93% discharged home
 - 3% died in hospital
 - 1% discharged to RACF



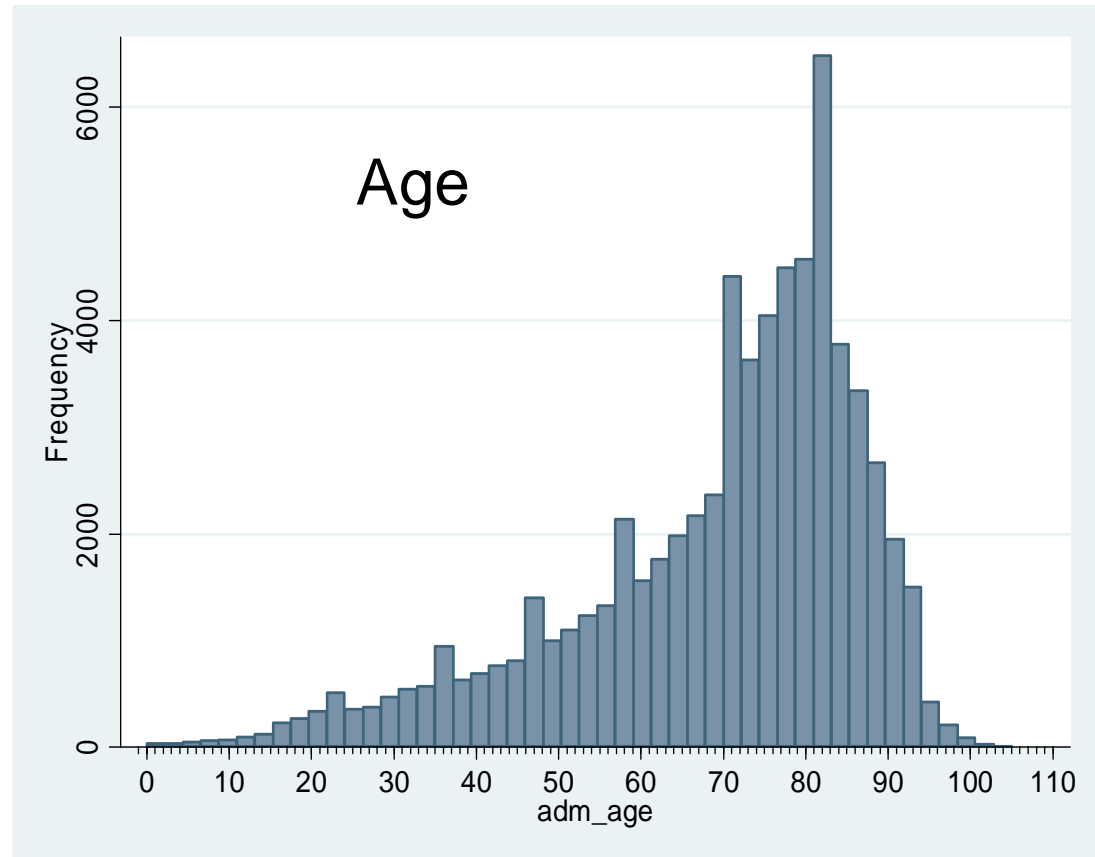
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Client Characteristics



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- 59% female
- Age 69 (0-105)
- 32% live alone
- 1.6% Aboriginal

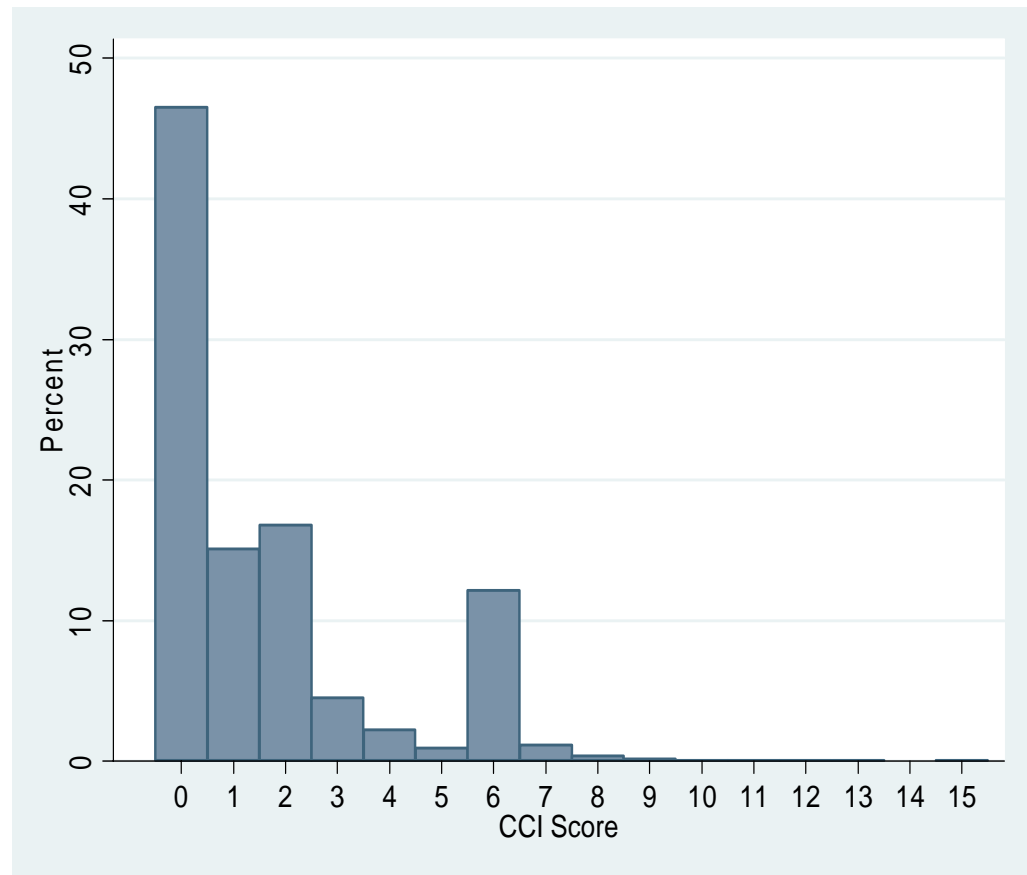


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Charlson Co-morbidity Index

- Calculated using diagnosis
- Mean CCI - 1.6 (sd 2.1, 0-15)
- LOS and number of admissions 



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Chronic Disease	Number	Percentage
Diabetes	18,178	28.86%
Chronic Heart Disease	13,075	19.32%
COPD	7,001	10.35%
Fracture	6,625	9.79%
Dementia	4,520	6.68%
Osteoporosis	3,411	5.04%
Cerebral Vascular Disease	2,958	4.37%



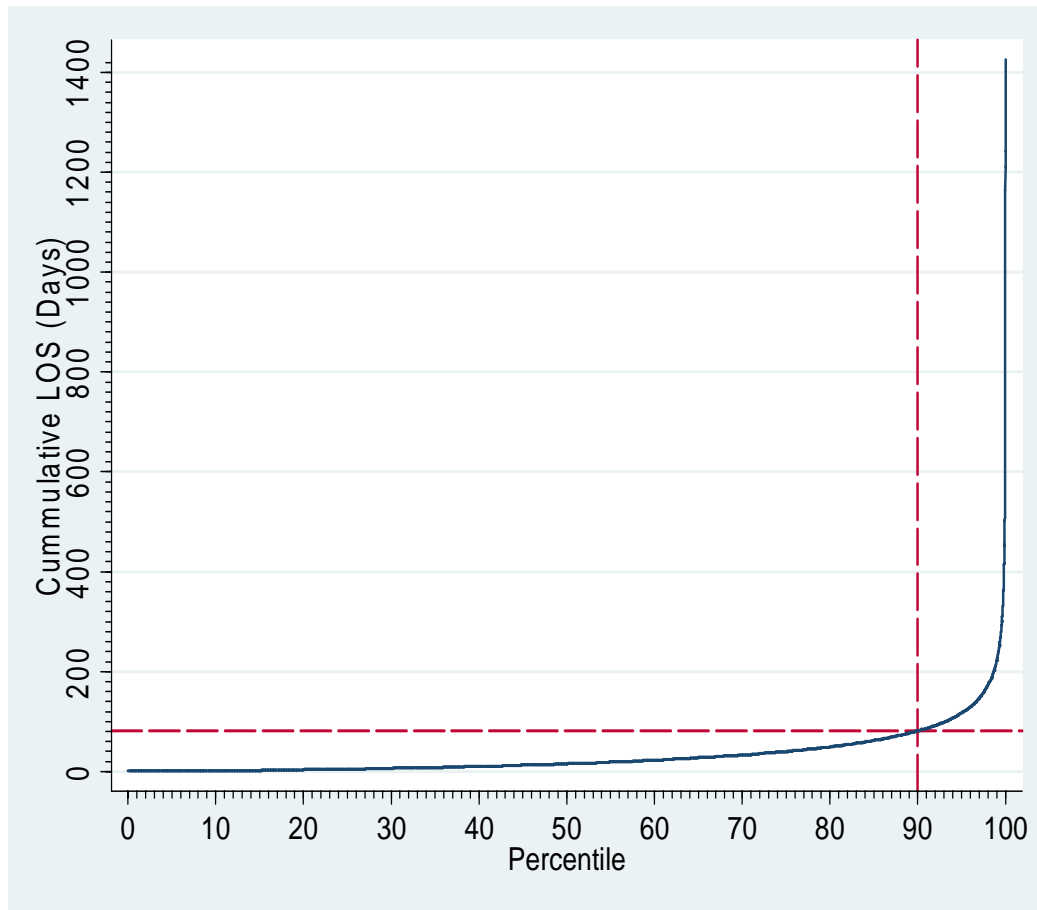
51% of clients had a diagnosis of at least one chronic disease

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Predicting Long Cumulative Admissions



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- 81+ days (mean 141.6)
- Range 81- 1,425 days
- 10.6% of all clients
- 44.7% of days clients spent in hospital
- 477 bed days

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Predicting Long Cumulative Admissions cont...



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Chronic Disease	Odds Ratio	Confidence Interval (95%)
Osteoporosis	5.26	4.87-5.67*
Fracture	3.55	3.42-3.79*
Chronic Heart Disease	3.34	3.17-3.53*
COPD	3.32	3.11-3.53*
Cerebral Vascular Disease	3.26	2.95-3.60*
Dementia	3.03	2.82-3.27*
Diabetes	2.57	2.45-2.71*



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Predicting Long Cumulative Admissions cont...



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Factor	Odds Ratio	95% Confidence Interval	Percentage Change
Fracture	2.94*	2.74-3.16	194%
Number of Chronic Diseases	2.78*	2.58-2.99	178%
Osteoporosis* Fracture	1.50*	1.31-1.73	50%
Lives Alone	1.27*	1.20-1.34	27%
CCI	1.15*	1.14-1.17	15%
Age	1.00*	0.99-1.00	-1%
Female	0.92**	0.87-0.97	-8%
Dementia	0.85**	0.76-0.95	-15%
COPD	0.77*	0.69-0.85	-23%
Chronic Heart Disease	0.72*	0.65-0.79	-28%
Diabetes	0.63*	0.57-0.69	-37%

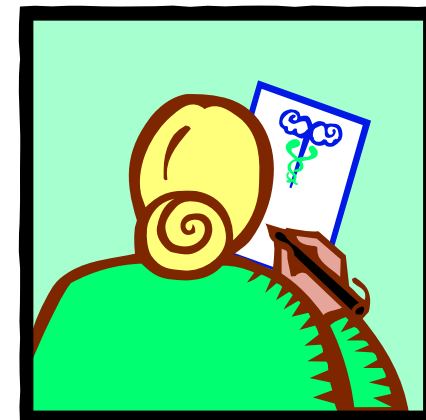
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Where to now?



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- How can we use this information to reduce clients' risk of long or frequent hospital stays?
 - Routine collection of diagnosis
 - Osteoporosis and falls risk assessment



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Further Information



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For more information contact:

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