

Understanding the Complex Patient

Multimorbidity and Frailty

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Complex patients have a major impact on hospital care

- This small presentation looks at complex patients from the perspective of Multiple Chronic Comorbidities and Frailty
- 2 basic types appear in our data
 - Multiple morbidity, with patients having a large number of coexisting chronic conditions
 - Patients with increasing frailty
- We are exploring several schemas for identifying these cases and allowing us to examine their impact on hospital mutilation.
- We focus here on 2 Multimorbidity schemas and 2 Frailty schemas and examine their impact on our jurisdiction admitted caseload.

Why focus on Extraordinary cases

- Increasing pressure on beds post Covid
- Increasing numbers of long stay cases
- Impact on Emergency Departments
 - Inability to admit Patients to wards
 - Increasing in long stay patients in the ED awaiting admission
 - Full Emergency Departments
 - Ambulance “Ramping”
 - Perception of Increased patients awaiting placement
 - Some shifting of blame
 - Different responsibilities for Aged care vs Hospital care
 - Looking at increased LOS requires analysis of contributing subgroups

Complex Patients

- DRG classification is pretty good at grouping together patients with similar characteristics
- Clinical similarity, LOS, Cost homogeneity
- However, some patients are outliers
 - Patients with high burden of disease - Multimorbid
 - Patients who are frail
 - Some who are both
 - Perhaps others as yet undefined
- Both have very significant increased hospital admitted days but are different in how this is achieved
 - Frail Patients have lengthened hospital stays
 - Multimorbid patients have slightly increased episode LOS but many more episodes
- This means that the approach to either is different

Approach to this analysis

- Local data analysed for Frailty and Multimorbidity at patient and episode level
 - Frailty can be recovered to some extent
 - To reflect this for this purpose frailty was considered to have currency in the financial year dataset
- Frailty and Multimorbidity are flagged for all IP, ED and OP encounters in Fin year
- WE have examined 2 approaches to both Frailty and Multimorbidity
 - Frailty – SNAP5 using FRIC and Initial Lancet Codes
 - Multimorbidity AIHW Severe Multimorbidity 3+ body systems vs Local 7+ chronic conditions
- This is undertaken to;
 - Project future activity
 - We currently are finalising a demand projection study for all Tasmanian Hospitals activity into the next 25 years
 - Examine Impact on Bed days for Frail and Multimorbid activity
 - Hospital funding
 - Discharge delay

Limitations to analysis in either Multimorbidity or frailty

- ICD coding
 - Coding is critical to capture frailty but not all concepts are normally coded – e.g. muscle wasting
- Not always coded under coding rules
 - Must be described as condition being managed or treated in notes
 - The average rate of capture of any known coexisting chronic condition for any particular episode is about 50%
 - Lessens value of Collection as reflecting Morbidity burden
 - But the aim of the collection is to describe care delivered in admitted episodes – not a research dataset

However

- Even with limited data the impacts of frailty can be observed
 - All public hospital admissions in Tasmania are linkable so all episodes related to the highest frailty score in a year can be linked to all episodes
 - Episodes over time can be reviewed to capture chronic conditions for multimorbidity
 - For frailty we can link the episode with the greatest frailty score to other episodes for an individual withing that financial year

Defining Multimorbidity

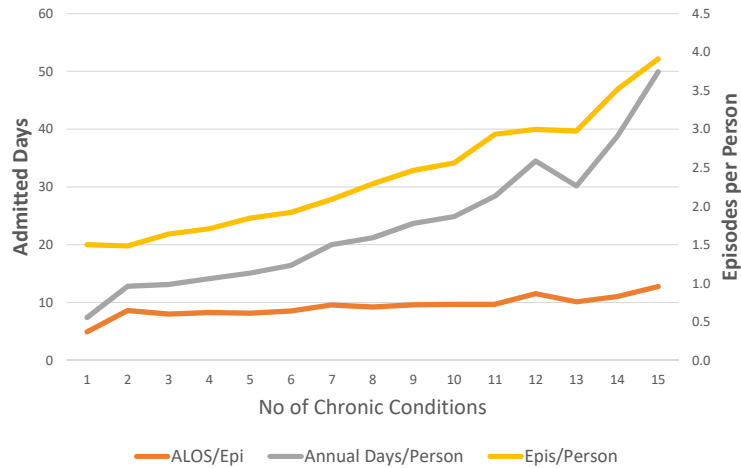
- Multimorbid Cases have been subject to significant analysis over the years
 - Increasing chronic disease results in increased LOS, Increased Visits, Increased cost, Increased risk of mortality
 - Often have problems outside of healthcare and may have poor social circumstances incl depression and harmful behaviours
- 2 Approaches have been used in the analysis
- AIHW method
 - Used by ABS to report on National rates of Multimorbidity
 - Level chosen for our focus –
 - **Complex Multimorbidity**
 - 3 or more Chronic Conditions impacting 3 or more body systems
- Local method
 - Developed over the past 10 years to provide a basis of analysis for Coded multimorbid episodes
 - Higher level of chronic diseases
 - 7+ Chronic Conditions with at least 3 body systems from a locally developed list of 50 chronic conditions
 - In this schema a very few people have large impact on hospital utilisation
- In both, the common approach is to examine chronic conditions coded over previous 7 years
 - Coding of chronic conditions is not always complete – we only code what was managed in episode so several episodes required to capture all relevant codes

Some numbers

- ABS Method
 - % of population
 - Self-assessed – ABS -AIHW – 8.5% Aus – Tas 11.5%
 - Tas – oldest population and higher social disadvantage
- Profoundly multimorbid
 - <2% of resident coded population coded with 7+ conditions
 - Likely an underestimate of impacted as many have limited admitted hospital contact
 - 11% of admitted patients are Severely multimorbid and use 35% of hospital Beds
 - Huge impact on Episodes and cost

Impact on Increasing Chronic Conditions

While LOS increases slightly with increased Comorbidity. The main driver to Increased Hospital Stay results from increasing number of Acute Hospital Admitted Episodes per person. However the episode increase LOS does adversely impact on ABF. The more conditions a patient has, the greater the impact on hospital admissions and cost



Impact on person

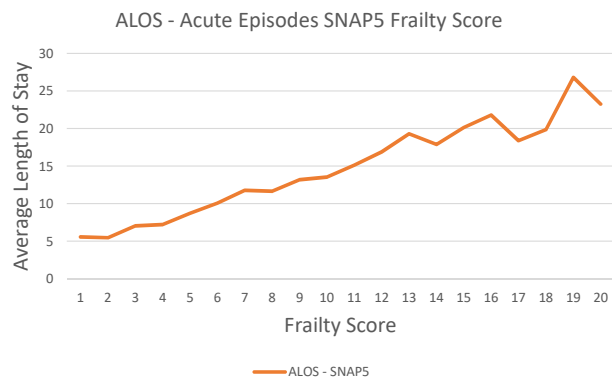
- Often multiple problems across many services
- Hospital LOS a little longer than normal – Classification basically working to recognise increased morbidity in each episode
- However
- Many more episodes
 - So longer LOS in full year
- ED presentations are increased
- OPD visits are more common
- Impact on life increases

Defining Frailty

- Generally, a clinical consideration
 - Key features
 - weight loss
 - Weakness
 - Reduced walking speed
- CFS – clinical frailty Scale
 - Would be useful if measured every overnight episode
- Frailty from Diagnosis codes shown to have some relevance
 - However, capture of codes that most indicate frailty such as weakness muscle loss and weight loss are limited
- 2 Approaches used
 - Replication of Initial Codes from the Lancet paper using local data (Severe Frailty)
 - A frailty score is built into Australian SNAP-5 (Frailty Related Index of Comorbidities), schema using some of the Codes used in the Lancet paper (in ICD-10-am codes) – (Frailty SNAP)

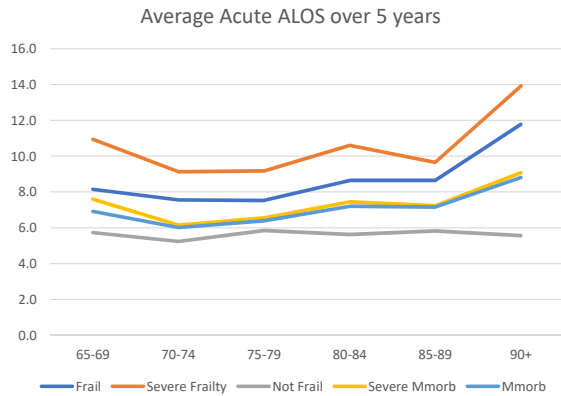
Impact of Increasing Frailty Score on Episode Length

- Maximum score for frailty reported in any episode during a year have been compared with ALOS for all Acute episodes in that year.
- Frailty state considered to stay for that year
- There is a steady incense in acute episode LOS with increasing Frailty score



Impact of Frailty at Episode Level

- At Acute Episode level
- Increasing frailty has the major impact on LOS
- Multimorbidity has higher than average ALOS
- Without Frailty and Multimorbidity, age does not have a great influence on Acute average length of stay



Effects of Multimorbidity and Frailty

Patient Group	Died	Disch to Care type	ED >24Hrs	% beds Occupied	% Person Admitted
All Episodes	2.5%	0.9%	12%	100%	100%
Not Mmorb or Frail	0.7%	0.3%	6%	38%	74%
Mmorb AIHW	7%	1.3%	20%	51%	24%
Severe Mmorb	13%	1.4%	24%	35%	11%
Frail SNAP FRIC	17%	6%	28%	34%	6%
Frailty Severe	17%	11%	29%	29%	4%
Severe Mmorb and Frailty	22%	8%	30%	17%	1.9%

Impact on Hospital Stay in a Year for the complex patients

- Average Annual Hospital Days for all care types
- Across all public hospitals
- Frailty is a very large driver for hospital stay at the individual level

All Episodes	6.3
Not Mmorb or Frail	3.5
Mmorb AIHW	13.5
Severe Mmorb	19.7
Frail_SNAP FRIC	32.5
Frailty Severe	41.7
Severe Mmorb and Frailty	46.2

In Summary

- A surprisingly high number of overnight beds are occupied by Frail patients and patients with high burden of chronic disease
- Multimorbid patients have frequent admissions and have many complex problems
 - Strong association with social determinants
 - A key aspect of care is prevention of hospitalization and this is starting to involve Hospital @home, increased primary support
 - The rate of multimorbidity seems to be gradually increasing in line with population ageing
- The frail are often not so complex but are unable to go or manage at home
 - Many are requiring supported accommodation and nursing home care
 - They often remain in acute hospital beds awaiting appropriate ongoing care – (often in Maintenance care types)
 - This has worsened since Covid
 - We are awaiting the completion of our demand projections project to examine future trends
- Both measures in each of Frailty and Multimorbidity appear to reliably indicate greatly increased impact on hospital resources, bed use and mortality, they are different only in the severity of impact.
 - There is a large subgroup are both frail and multimorbid with worse outcome and impact than either alone



Thank You

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Details of Multimorbidity and Frailty schema available on request