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A Deductive Approach to Acute Medical Service Design

The problems facing emergency hospital care

- Emergency hospital admissions are increasing internationally, influenced by:
 - An ageing population
 - More complex disease
 - Increasingly specialised medical services
 - Relative lack of community services
 - Changing family support

The British Experience and Acute Medical Units

An Acute Medical Unit (AMU):

- Is a dedicated facility intended to act as a focus for acute management of patients that have presented as medical emergencies
- Provides safe, efficient and expert multi-disciplinary care
- Aims to provide care either for a designated period of time (24-72 hours), or until the patient is clinically stable

AMUs – one solution?

- Limited evidence from the UK shows:
 - Improved ED access block
 - Shorter length of stay (LOS)
 - Decreased inpatient mortality
 - Improvements in patient and staff satisfaction

AMUs in Australia and New Zealand

- AMUs are now being introduced in Australia and New Zealand and a 2009 survey identified 32 units
 - A comparison with the UK system demonstrates similarities but also important differences – ANZ units focus on lower acuity general medical patient assessment
- 4 (6) hour rule introduction into ED
 - This is prompting redesign of front door and unscheduled hospital services

Project Aim

Is it possible to identify a group of acute medical patients who will benefit from an AMU at the time of their presentation to ED?

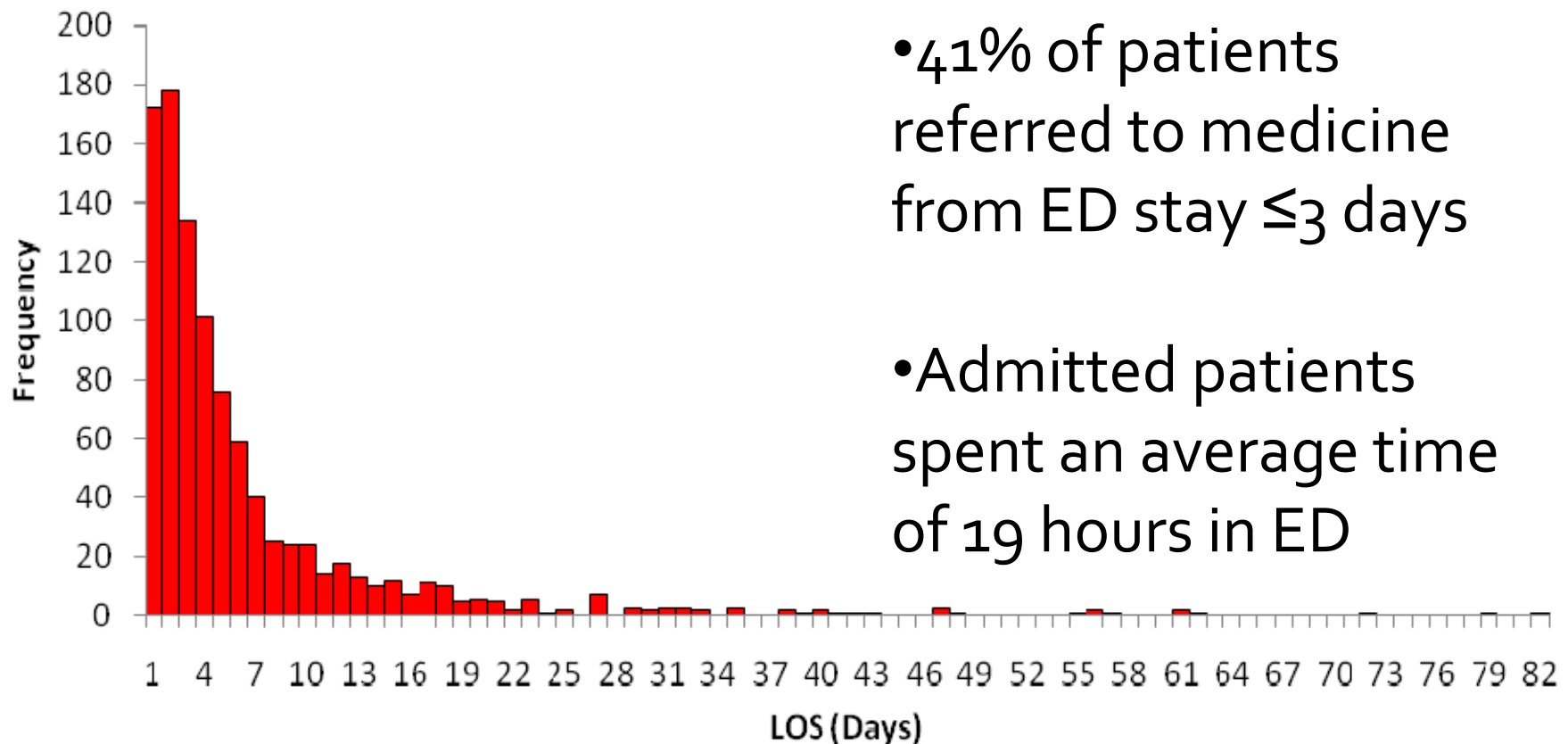
Methodology

One thousand consecutive patients presenting to a hospital ED and referred for medical assessment were studied retrospectively recording:

- Patient demographics
- Details of medical assessment and diagnosis
- Lengths of stay
- MET calls
- Need for critical care
- Readmission.

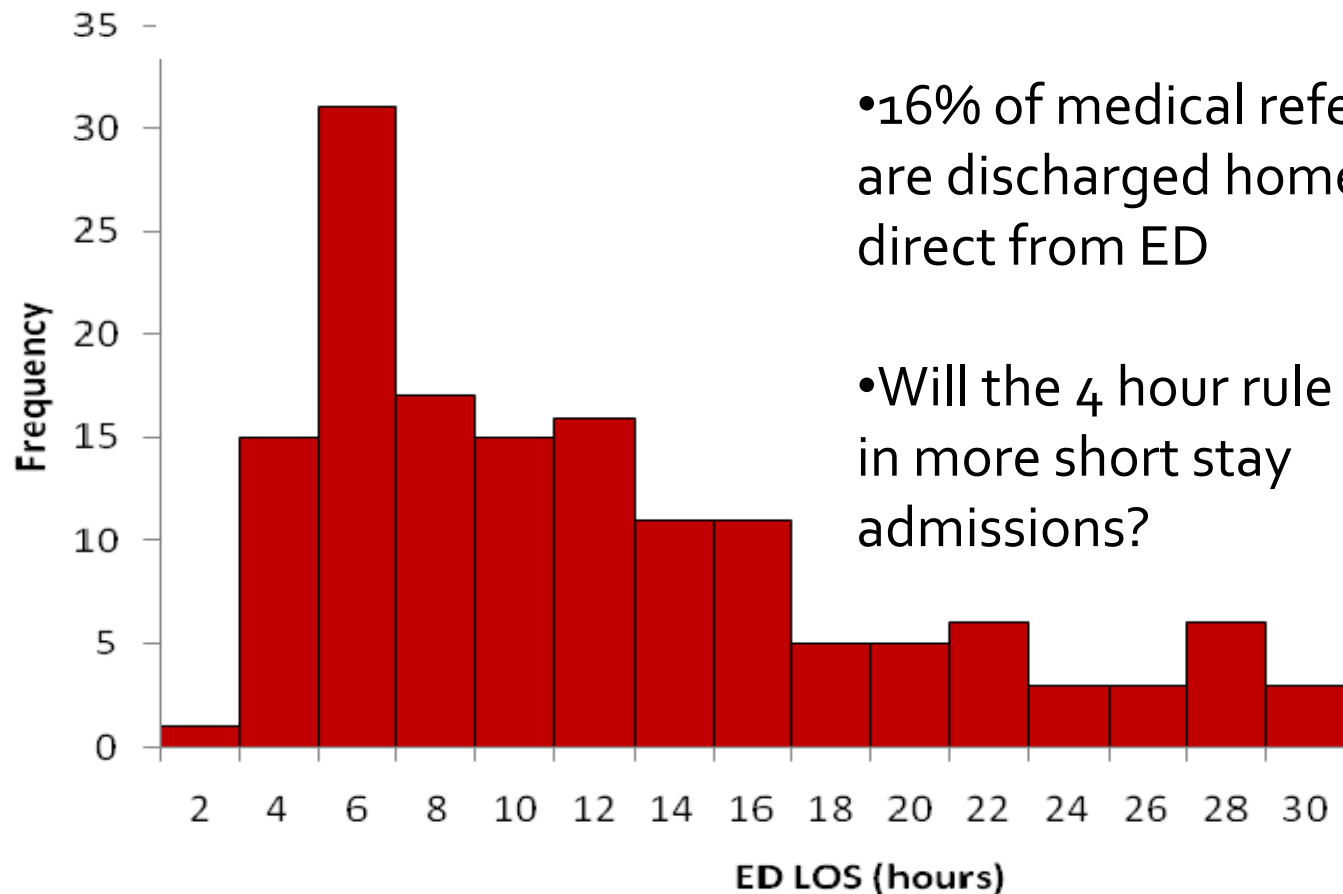
Results – LOS

LOS - All ED Medical Referrals



Results - LOS

ED LOS for patients discharged home

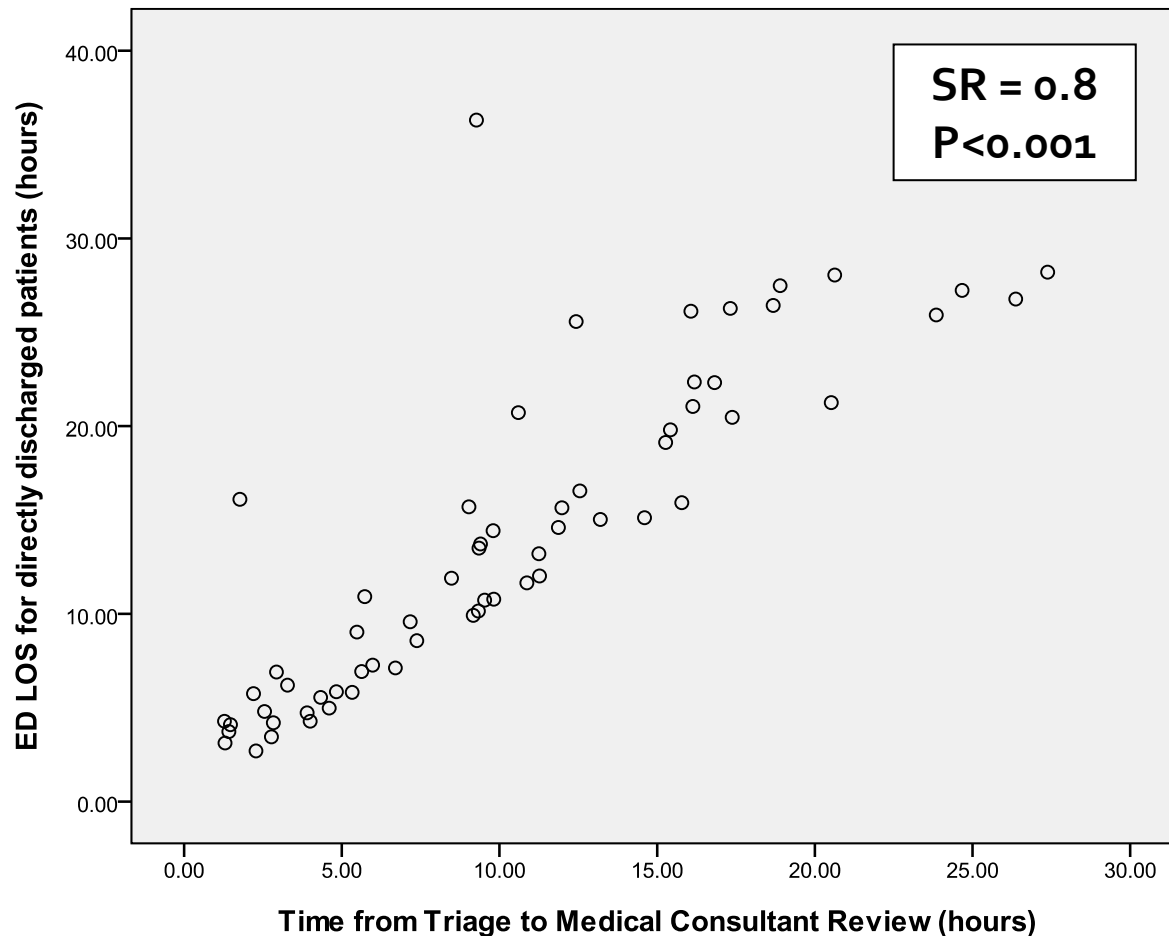


- 16% of medical referrals are discharged home direct from ED

- Will the 4 hour rule result in more short stay admissions?

Results – Consultant Review

Medical referrals discharged from ED



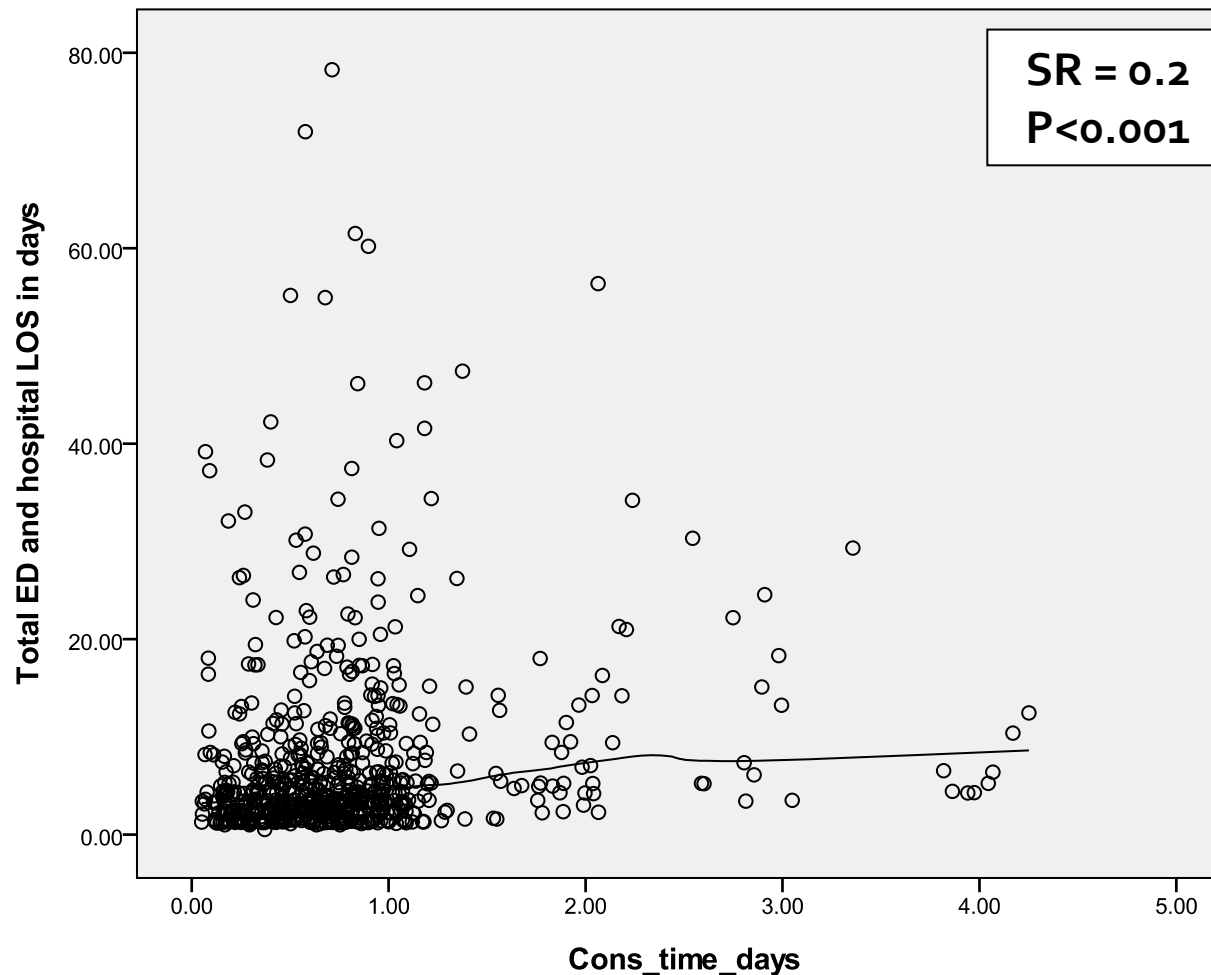
There is a positive correlation between LOS and timeliness of review by a consultant.

70% patients are triaged between 8am and 8pm – potential for early senior review

Early senior review may improve efficiency and quality of care.

Results – Consultant Review

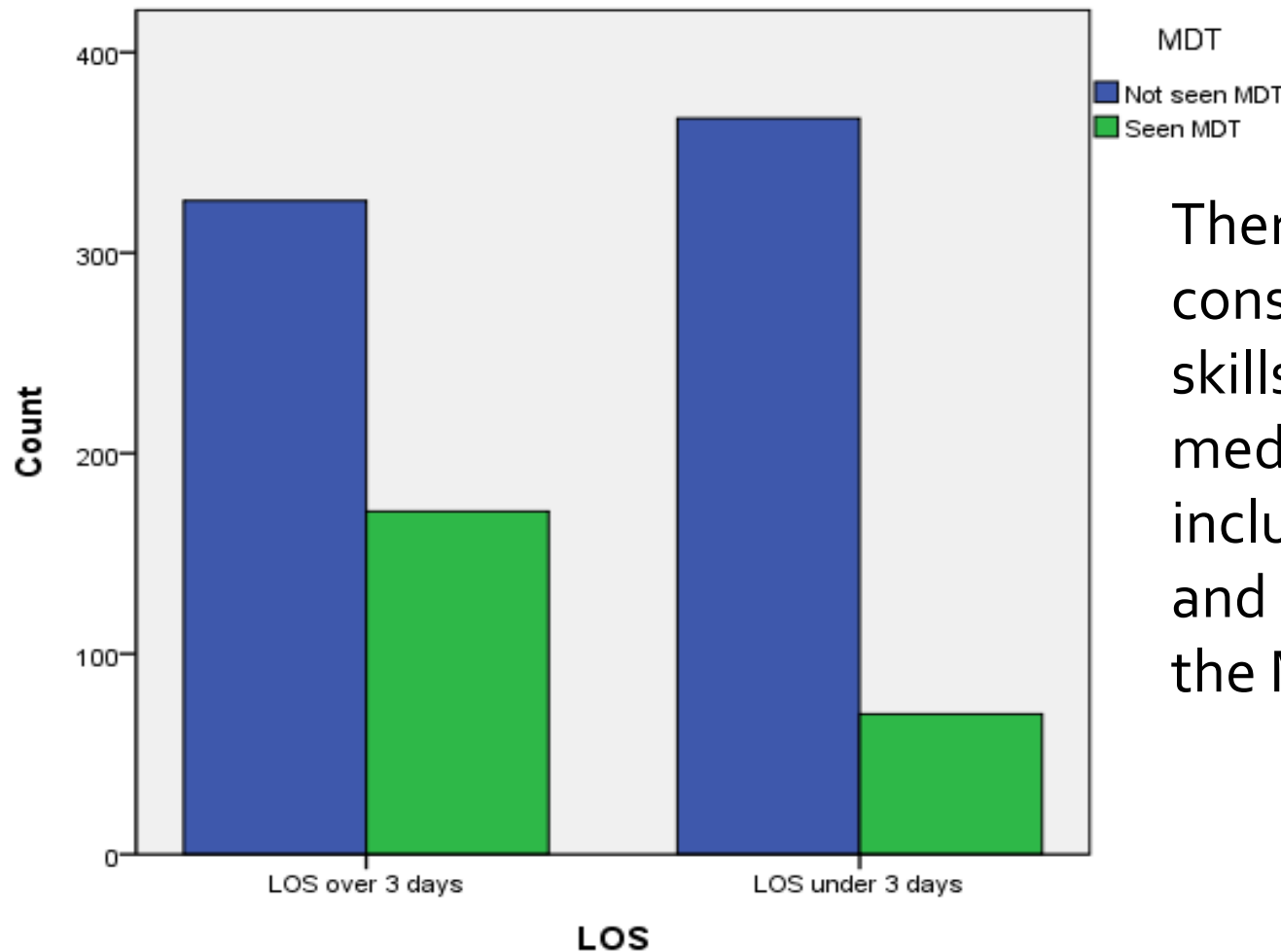
Admitted Patients



There is still a positive correlation but it is less strong. This may be due to influence from confounders such as:

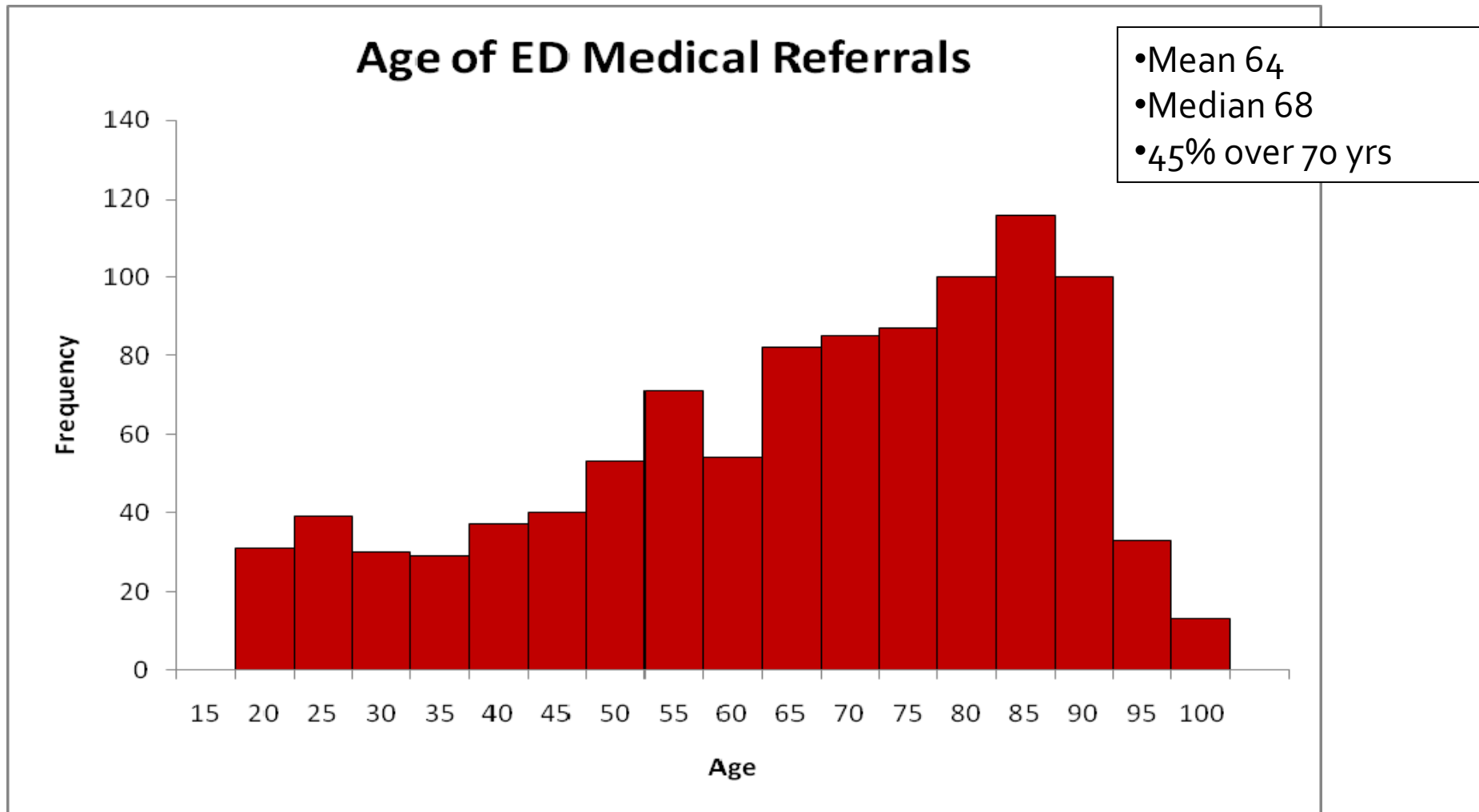
- Medical and hospital records influencing data accuracy
- Consultants prioritising review of complex and sick patients with a longer LOS
- MDT involvement
- Transportation
- Pharmacy and prescriptions

Results - MDT

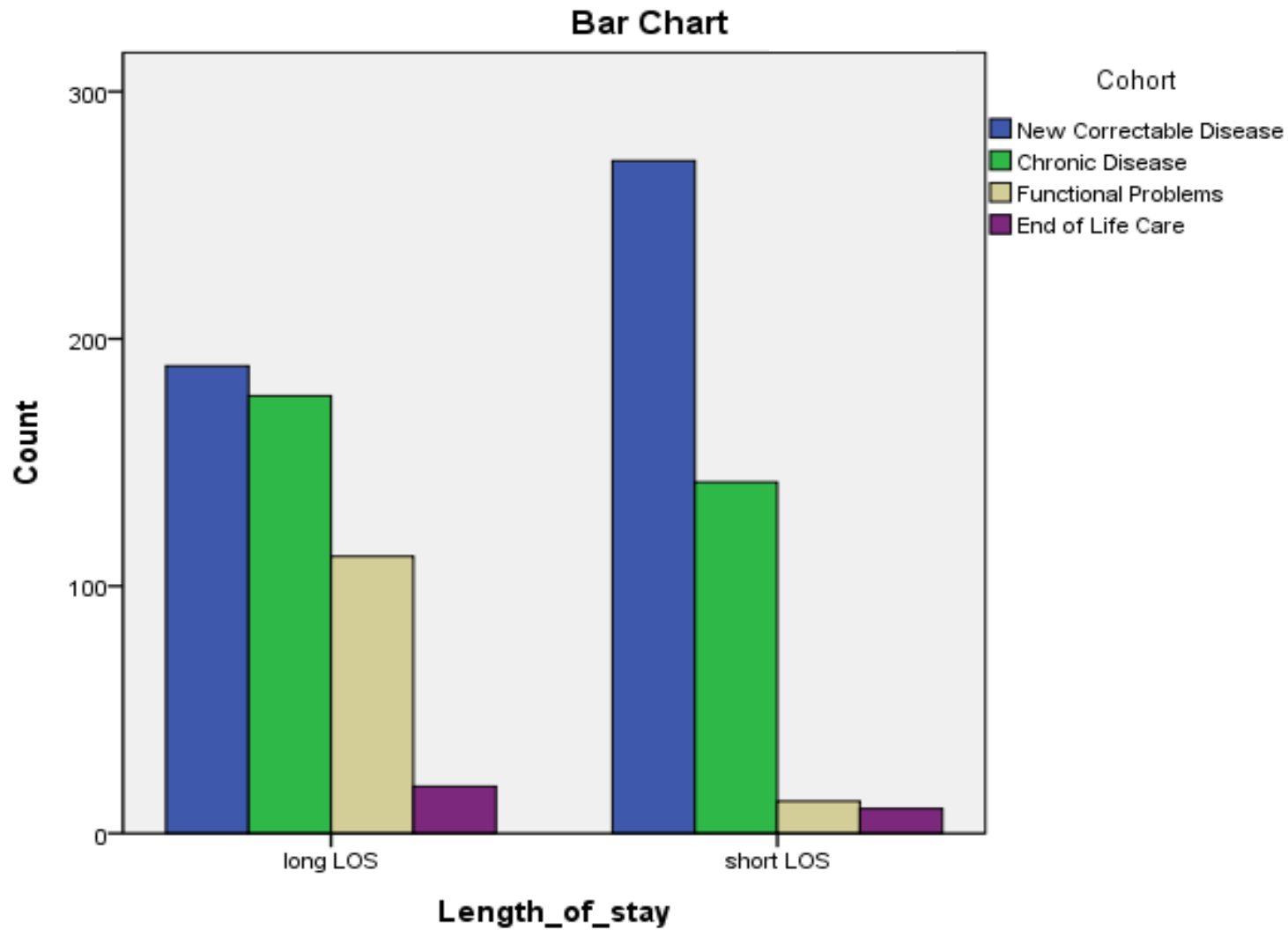


There is a need to consider staffing and skills-mix in an acute medical service. This includes nursing staff and other members of the MDT

Results – Age



Results – *patient needs*



Results – *unstable patients*

Traditionally, in Australia, patients are stabilised in ED before transfer. Not all unstable patients require critical care – some will be transferred from ED to a ward.

- In our patients with a triage early warning score ≥ 4 ;
 - 20% required critical care/CCU
 - 5% a MET call
 - 48 hour mortality was 5%

Short stay patients have a low incidence of MET calls (0.7%) and critical care admissions (1.4%)

Conclusions

- The functionality of an AMU should be driven by an understanding of local patient need and in the hospital we have studied its emphasis of care should be on:
 - Short stay patients
 - Unstable patients not requiring critical care
 - Patients with diagnostic uncertainty (caring for them until clear management plans are in place)
- Staff skills-mix is a key consideration
- Robust methods to identify the deteriorating patient must be in place routinely

Policy Implications

- Safety, quality and efficiency of care may benefit from AMU establishment.
- Admissions policies should be locally appropriate and subject to audit.
- Timely senior medical review is essential in managing acute medical patients.
- An AMU may help to facilitate safe implementation of the 'Four-Hour Target'.

References

- The Acute Medical Task Force. Royal College of Physicians 2007
- Scott I, Vaughan L, Bell D. International Journal for Quality in Health Care 2009. 21(6); 397-407