

The Impact Of An Aging Population On Care And Clinical Resource Utilisation In A Cardiac Unit.

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Conflict of interest

None

Competing interests?

Clinical

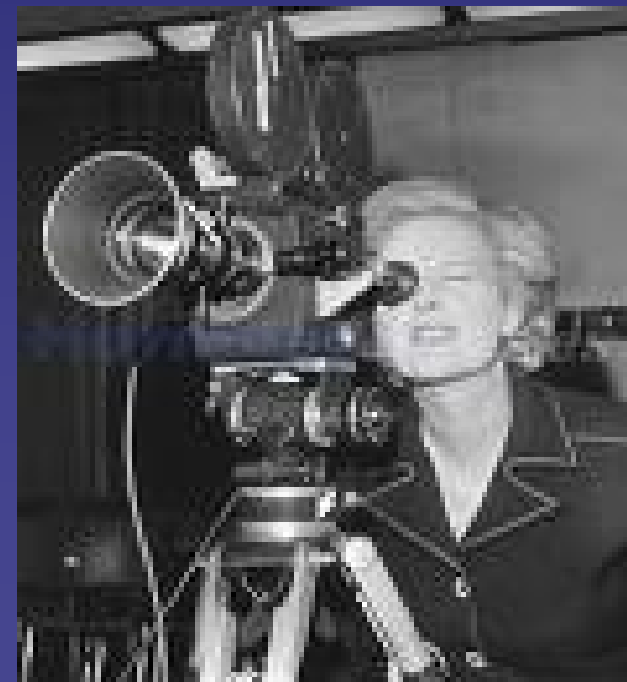
- Changing patient characteristic
- Operative mortality
- Staff development

Non clinical

- Waiting times
- Operating targets
- Government policies
- European working time directive
- Modernising medical careers
- Contracts

“Big brothers” are watching.

A recent Healthcare commission report indicted a non cardiac unit in a hospital for poor results, alleging that managers pursued targets to the detriment of pts and blamed poor utilisation of resources



Background

Clinical resource utilisation is a topical issue
in healthcare delivery

Directly linked to clinical productivity and
quality of care

Important to justify cost-effectiveness of care

Study Objectives

1. Relate temporal change in age with other risk factors in cardiac surgery patients
2. Compare the utilisation of clinical resources between young and elderly patients

Patients

- All patients who underwent primary CABG and/ or AVR or MV replacement/repair over a 9-year period between March 1998 and January 2007
- Prospectively collected clinical data were retrieved from the departmental database

Patients

All patients
n=6,971

Young (<70yr)
n=4127

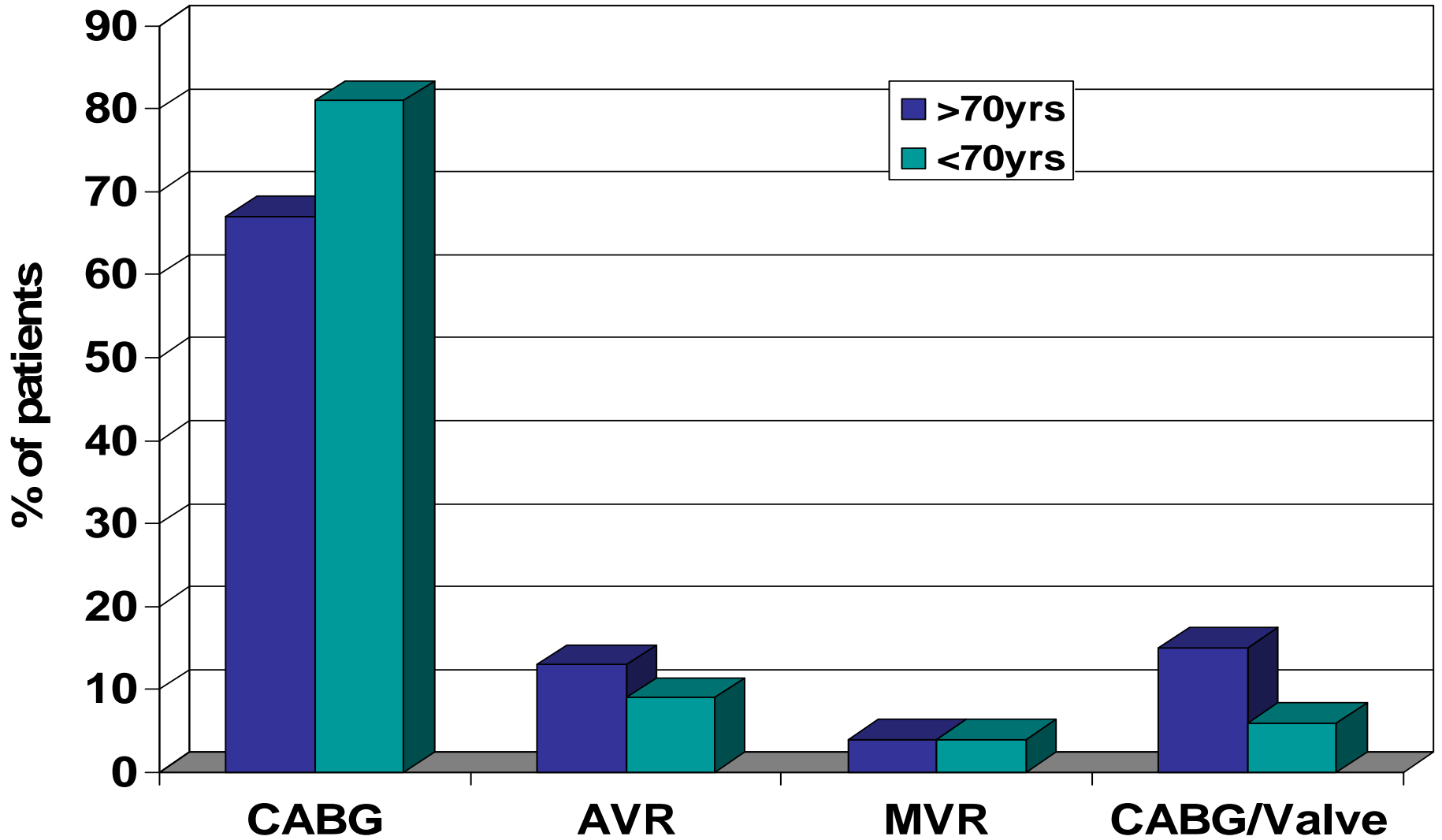
Elderly (\geq 70yr)
n=2664

Baseline characteristics

	Elderly	Young
No of patients	2664	4127
Female	35%	22%
Non elective op	26%	21%
Mean EuroScore	6±2	3±2

$p < .0001$

Operations



Measures of resource utilisation

1. Adaptation of principles of the Therapeutic intervention scoring system
 - Measure of the intensity of treatment
(Keene et al Crit care med 1983)
2. “Progression-through-care”
 - Duration of mechanical ventilation
 - Length of ICU stay
 - Readmission to ICU
 - Period of hospitalisation
 - Discharge to convalescence facility

Medications

	Elderly	Young	Excess
Inotropes	32%	20%	12%
Anti-arrhythmics	42%	26%	16%
Antibiotics	15%	11%	4%
Total excess risk			32%

Transfusions

	Elderly	Young	Excess
Blood	48%	33%	15%
FFP	9%	6%	3%
Platelets	8%	6%	2%
Cryoprecipitate	1%	1%	0

Total excess transfusion risk 20%

Further interventions

	Elderly	Young	Excess
• Resternotomy	8%	4%	2%
• Sternal re-wiring	2%	1%	1%
• Gen surgical*	6%	3%	3%
• CVVHD	2%	1%	1%

Total excess risk 7%

Devices

	Elderly	Young	Excess
IABP/VAD	4%	3%	1%
PPM	2%	1%	1%
Swan Ganz	1%	1%	0
Total excess risk			2%

Progression of care

	Elderly	Young	Excess
ICU stay >24hrs	36%	28%	8%
ICU readmission	5%	2%	3%
LOS >12 days	26%	13%	13%
Discharge to convalescence	12%	5%	7%

31%

Summary

Factors associated with escalated hospital costs and resource utilisation were predominant in elderly pts:

1. high predicted operative risk
2. non-elective operation
3. blood transfusion
4. invasive monitoring
5. prolonged ventilation
6. mechanical and pharmacologic haemodynamic support
7. postop AF and hospital-acquired infections
8. long ICU and hospital stays

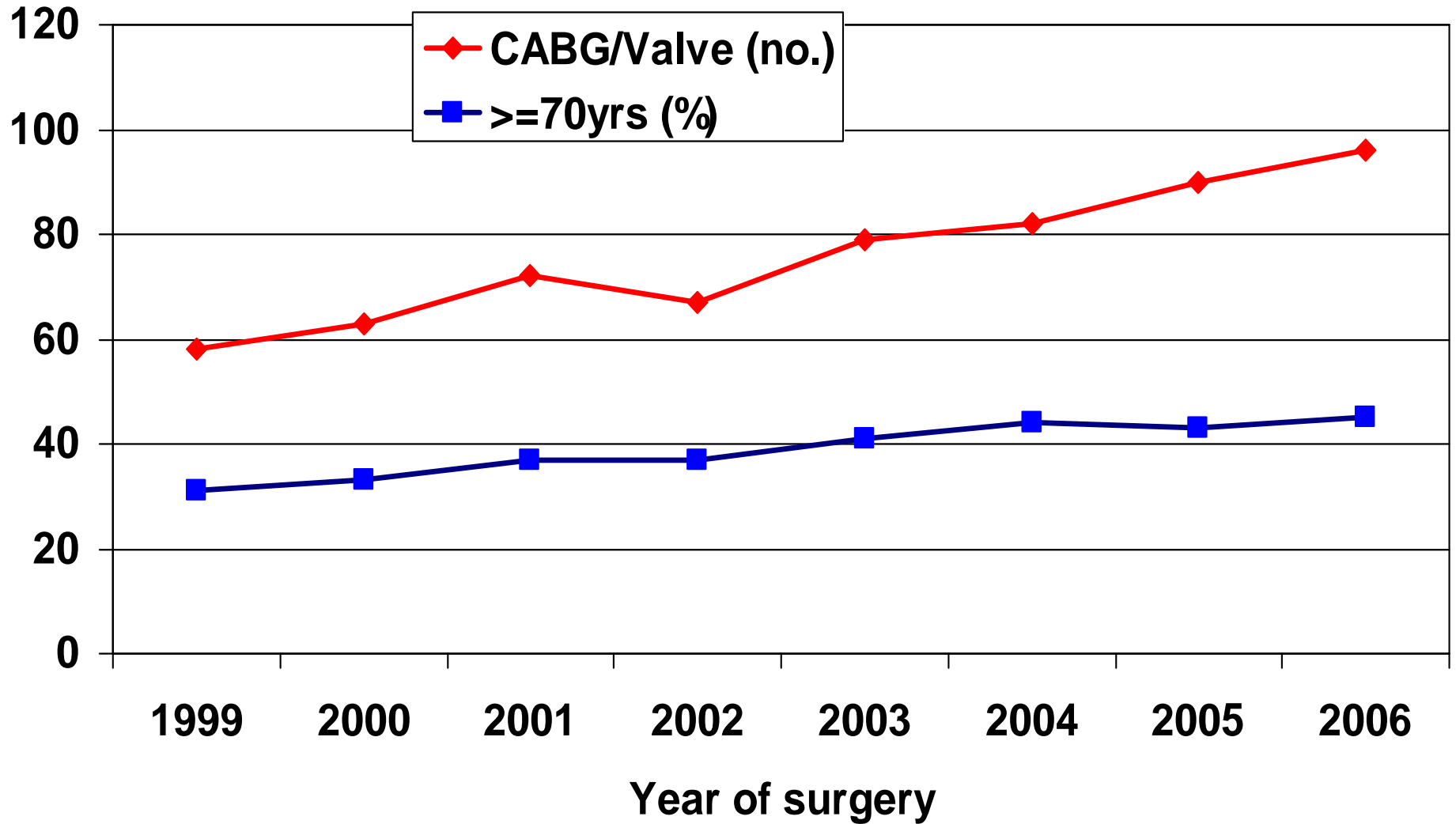
Summary - II

- Overall, the cumulative excess risk for clinical resources utilisation for pts ≥ 70 yrs compared to younger pts was at least 91%.
- The treatment was cost-effective - observed mortalities (4.4% in elderly, 1.3% in young) were less than predicted

Comment

The challenges of a changing demographics of cardiac surgery patients should be an important consideration in management of clinical resources to achieve surgical targets

Increasing risk profile of surgery patients



Conclusion

- The elderly utilise more clinical resources after cardiac surgery
- A strategy for meeting the emerging challenges of cardiac surgery in the current era should include a capacity to deal with the additional burden a growing elderly population places on clinical care and resources
- A coordinated clinical and institutional approach is necessary to continue to meet set targets within the context of an overall strategy that supports improvement in operative outcomes

Thank you