



63° CONGRESSO
NAZIONALE SIGG
GLI ANZIANI:
LE RADICI DA PRESERVARE

ROMA 28 novembre
01 dicembre 2018

Decision making nel paziente complesso

Antonio Crucitti

Responsabile UOC Chirurgia Generale e Mininvasiva - Ospedale «Cristo Re»





Changes in the EU structure of population, by main age groups

Europeans aged over 65 will double:

- from 88 to 153 million
- about 30% of the EU population

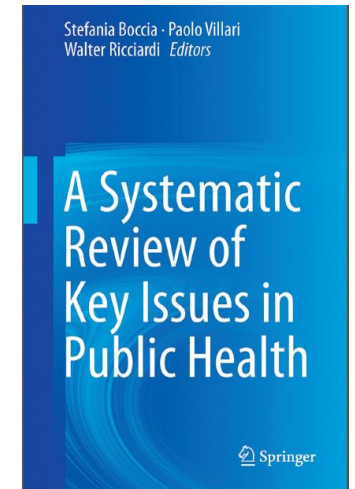
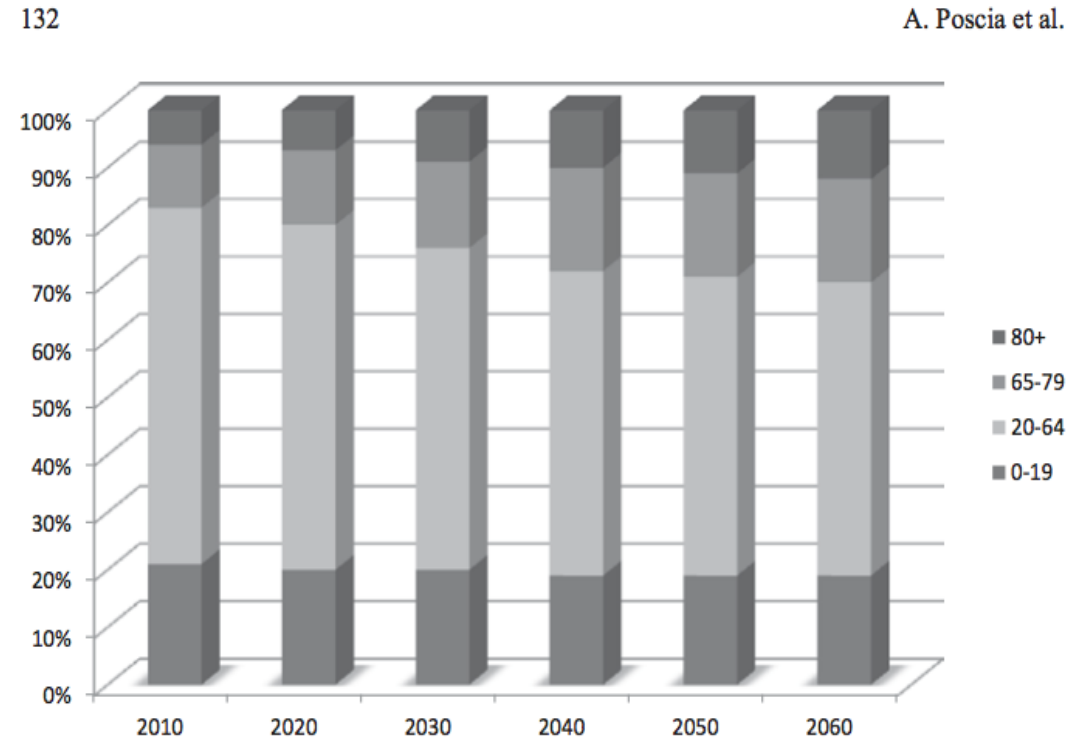
The rise of the “oldest old”

- over 80 will nearly triple from 24 to 62 million

Chapter 8 Public Health Gerontology and Active Aging

Andrea Poscia, Francesco Landi and Agnese Collamati

A. Poscia et al.





POPOLAZIONE ANZIANA

1° gennaio, anni 2007 e 2017



2007

11,7 milioni

20,1% della popolazione

466.700

0,8% della popolazione

10.386

0,02% della popolazione



65 ANNI E PIÙ

90 ANNI E PIÙ

ULTRACENTENARI

2017

13,5 milioni

22,3% della popolazione

727.000

1,2% della popolazione

17.000

0,03% della popolazione

Surgery in the elderly



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- Over the last decades longevity has increased significantly
- Today surgeons operate more and more patients over 80 years and older, «the octogenarians»

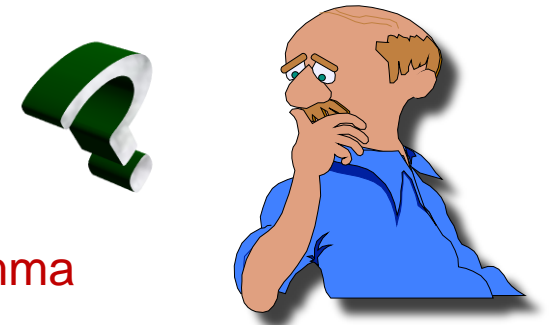
The purpose of the surgical care in the elderly is to obtain

- *Cost effective*
- *Tailored treatment*
- *Focusing on patients quality of life rather than five-years free survival*

Unfortunately despite age and functional status *some clinical scenarios can only surgically managed* :

- *Traumas and fractures*
- *Vascular accidents*
- *Gastrointestinal perforation*
- *Complication of locally advanced cancer*

are all situations where the clinicians face the dilemma



British Journal of Surgery [Explore this journal >](#)

Volume 103, Issue 2
January 2016
Pages e83–e92

[View issue TOC](#)

Special Issue:
Surgery in the elderly

Original article

Clinical and morphometric parameters of frailty for prediction of mortality following hepatopancreaticobiliary surgery in the elderly

D. Wagner, S. Büttner, Y. Kim, F. Gani, L. Xu, G. A. Margonis, N. Amini, I. R. Kamel, T. M. Pawlik

First published:

25 November 2015 [Full publication history](#)

Research Article

Parent and clinician preferences for location of end-of-life care: Home, hospital or freestanding hospice?

Alisha Kassam MD, MPH, Julia Skiadaresis BSc, Sarah Alexander MD, Joanne Wolfe MD, MPH

First published:

21 November 2013 [Full publication history](#)

Leading article

Tailoring surgery to elderly patients with cancer

R. A. Audisio

First published:

Surg Today (2010) 40:999–1010
DOI 10.1007/s00595-010-4354-5

SURGERY TODAY
© Springer 2010

Review Article

Optimizing the Management of Elderly Colorectal Surgery Patients

KOK-YANG TAN^{1,2}, FUMIO KONISHI², LAWRENCE TAN¹, WUI-KIN CHIN¹

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Available online at www.sciencedirect.com

ScienceDirect

EJSO xx (2016) 1–14

EJSO
The Journal of Cancer Surgery
www.ejso.com

Review

Delivering tailored surgery to older cancer patients:
Preoperative geriatric assessment domains and screening
tools – A systematic review of systematic reviews

M.G. Huisman^{a,b,c,e}, M. Kok^{b,c,d,e}, G.H. de Bock^d,
B.L. van Leeuwen^a

Systematic review

Systematic review and meta-analysis of risk factors for postoperative delirium among older patients undergoing gastrointestinal surgery

A. F. M. Scholz, C. Oldroyd, K. McCarthy, T. J. Quinn, J. Hewitt

First published:

16 December 2015 [Full publication history](#)

Leading article

Making the elderly fit for surgery

E. H. J. Hulzebos, N. L. U. van Meeteren

First published:

30 November 2015 [Full publication history](#)

- Many studies have shown **conflicting results** regarding postoperative outcomes (p.o. 30-day complication and mortality rates)

Surgery in the elderly



- Surgical mortality increases with every decades of age beyond 50 years, 40/50 % over 80 ys, regardless the type of surgery
- Regarding **major abdominal surgery** elderly patients were found to have increased rates of postoperative morbidity and mortality
- It was also found that these patients had increased rates of comorbidity, later stage of the disease and were more likely to have emergency surgery
- Surgery not be denied based on age alone
- Although elderly may tolerate an operation may not tolerate subsequent complication.
- Complication are associated with comorbid conditions and geriatric syndromes (i.e. frailty and cognitive disorders)
- The ability to restore independence and minimize the loss of function may take precedence over heroic life-extending interventions and surgical cures



Hasmi et al 2014,
Andersson et al. , 2013

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«Several risk predicting scores are proposed in this scenarios
but their ability to predict postoperative complication remains highly variable and imprecise».....

Thorsen et al, 2014



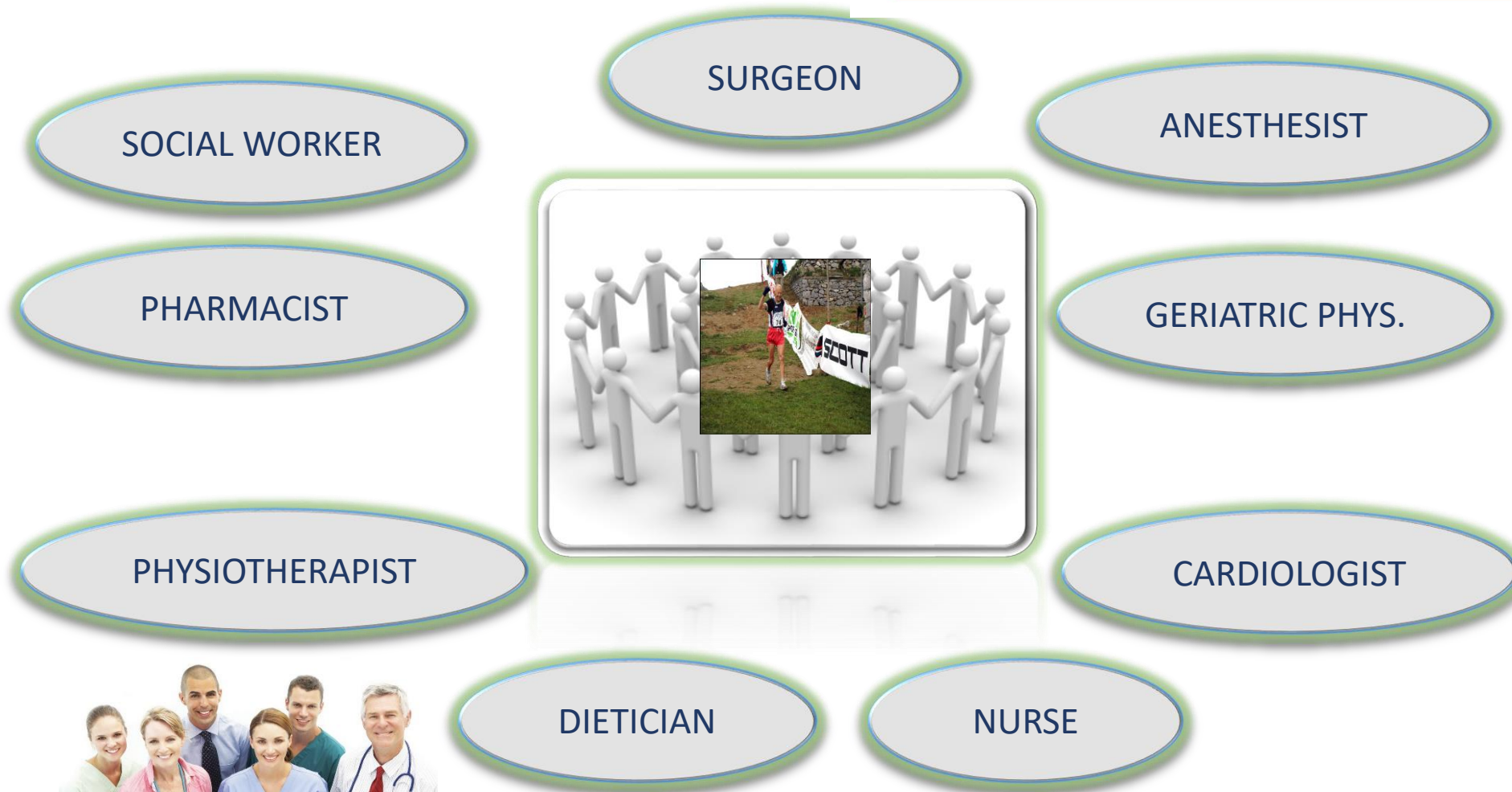
RISK STRATIFICATION - Comprehensive Geriatric Assessment

“.. a multidisciplinary evaluation in which the multiple problems of older persons are uncovered, described, and explained, if possible, and in which the resources and strenghts of the person are catalogued, need for services assessed, and coordinated care plan developed”

TABLE 1. Comprehensive Geriatric Assessment

Domain	Common Measures	Importance of Domain
Functional assessment	Activities of daily living ⁶¹ Instrumental activities of daily living ⁶² Number of falls in last 6 months ⁶³ Short physical performance battery (SPPB) ^{64,65} Grip strength ⁶⁶	1. Predicts postoperative morbidity, mortality ⁶⁷ 2. Poor performance associated with increased hospital length of stay ⁶⁸ 3. Predicts chemotherapy toxicity ⁶⁹
Comorbidity	Physical health section (OARS subscale) ⁶² Deyo Comorbidity Index ⁷⁰ Charlson Comorbidity Score ⁷¹	1. Associated with postoperative complications and mortality ^{4,72} 2. Influences chemotherapy response and toxicity ⁷³
Cognition	Mini-Mental State Examination (MMSE) ⁷⁴ Blessed orientation memory-concentration Test ⁷⁵	1. Associated with increased postoperative length of stay, disability and delirium ⁷⁶
Psychological state	Hospital anxiety and depression Scale ⁷⁷ Geriatric depression scale ^{78,79}	1. Linked to postoperative functional disability and mortality ^{80,81}
Social support	MOS social activity limitations measure ⁶¹	1. Social isolation is associated with increased mortality ^{82,83}
Nutrition	Body mass index ⁸⁴ Percentage of unintentional weight loss in last 6 months ⁸⁵ Mini-nutritional assessment ⁸⁶	1. Poor nutritional status is associated with increased postoperative infections ⁸⁷ 2. Linked to increased surgical mortality ⁸⁸ 3. Associated with poor chemotherapy ⁸⁵ response and tolerability
Medication assessment	Beers criteria ⁸⁹	1. Associated with increased mortality ⁹⁰ 2. “Inappropriate” medication use in older patients is associated with postoperative delirium and increased hospital length of stay ⁹¹

OARS indicates Older American Resources and Services Interview; MOS, Medical Outcomes Study.

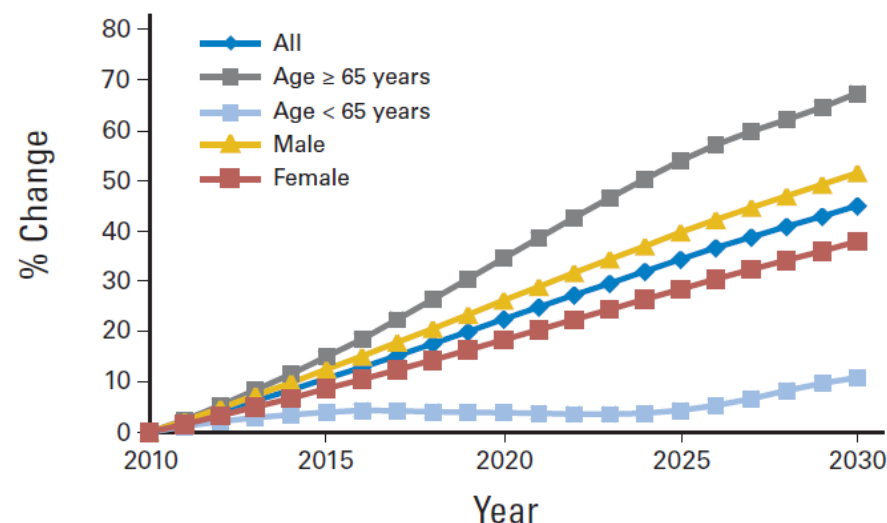
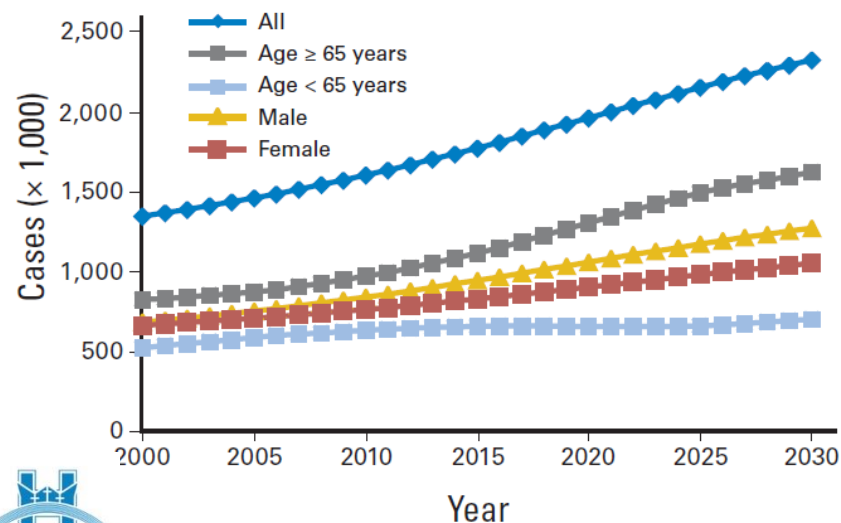


Cancer in the elderly



From 2010 to 2030, the total projected cancer incidence will increase by approximately 45%, from 1.6 million in 2010 to 2.3 million in 2030. This increase is driven by cancer diagnosed in older adults and minorities. **A 67% increase in cancer incidence is anticipated for older adults**, compared with an 11% increase for younger adults. A 99% increase is anticipated for minorities, compared with a 31% increase for whites. In 2030 elderly patients are projected to comprise 20% of total population his group is predicted to account for 70% of all cancer diagnoses in future

From 2010 to 2030, the percentage of all cancers diagnosed in older adults will increase from 61% to 70%, and the percentage of all cancers diagnosed in minorities will increase from 21% to 28%.



ASSESSMENT OF ONCO-GERIATRIC PATIENT



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The American Journal of Surgery (2016) 212, 889-895

The American
Journal of Surgery

Original Article

Ann Coloproctol 2016;32(5):161-169
<https://doi.org/10.3393/ac.2016.32.5.161>

Annals of
Coloproctology

pISSN 2287-9714 eISSN 2287-9722
www.coloproctol.org

Use of a Comprehensive Geriatric Assessment to Predict Short-Term Postoperative Outcome in Elderly Patients With Colorectal Cancer

Surg Today (2010) 40:999-1010
DOI 10.1007/s00595-010-4354-5

Yoon Hyun Lee, Heung-Kwon Oh, Duck-Woo Kim, Myong Hoon Ihn¹, Jee Hyun K Sung Il Kang, Gwang Il Kim², Soyeon Ahn³, Sung-Bum Kang

Department of Surgery, Seoul National University Bundang Hospital, Seongnam; ¹Department of Surgery, Sooi Hospital, Gumi; ²Department of Internal Medicine, Seoul National University Bundang Hospital, Seongnam; ³Research Collaborating Center, Seoul National University Bundang Hospital, Seongnam, Korea

Aging Clin Exp Res
DOI 10.1007/s40520-016-0642-2

ORIGINAL ARTICLE

Surgery for colorectal cancer in elderly: a comparative analysis of risk factor in elective and urgency surgery

Carlo Boselli¹ · Roberto Cirocchi¹ · Alessandro Gemini¹ · Veronica Grassi¹ · Stefano Avenia² · Andrea Polistena² · Alessandro Sanguinetti² · Maria Federica Burattini¹ · Daniele Pironi³ · Alberto Santoro³ · Renata Tabala⁴ · Nicola Avenia²

SURGERY TODAY
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Review Article

Optimizing the Management of Elderly Colorectal Surgery Patients

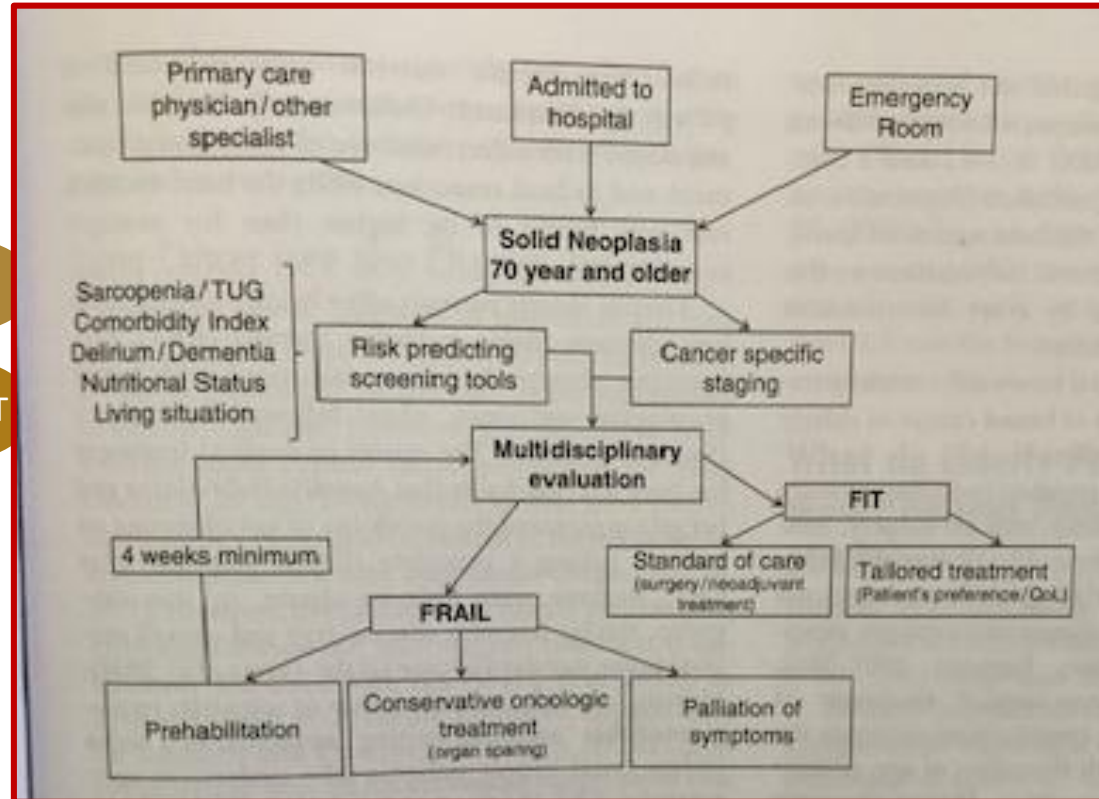
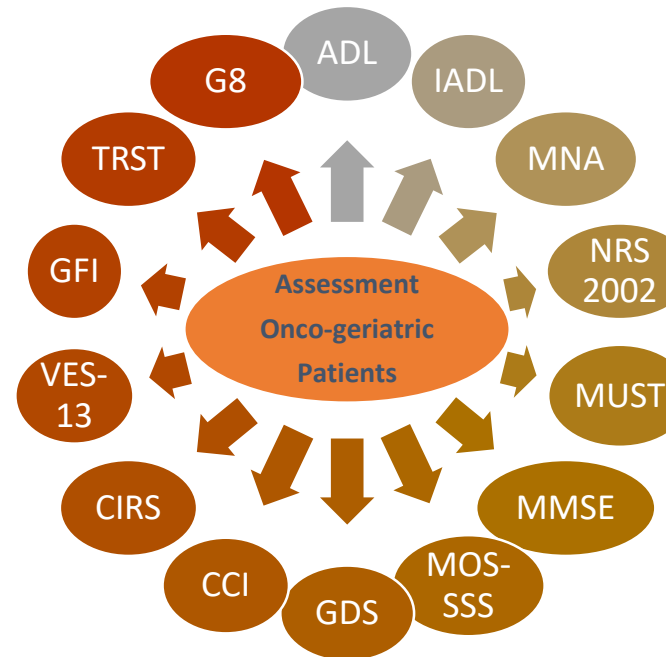
KOK-YANG TAN^{1,2}, FUMIO KONISHI², LAWRENCE TAN¹, WUI-KIN CHIN¹, HEAN-YEE ONG¹, and PHYLLIS TAN¹

¹Geriatric Surgery Service, Alexandra Health, Khoo Teck Puat Hospital, 90 Yishun Central, 768828, Singapore
²Department of Surgery, Jichi Medical School, Saitama Medical Center, Saitama, Japan

- Multidimensional evaluation in geriatric surgical patients and cooperation between surgeons and geriatricians are uncommon. Nevertheless the good results of ERAS protocol, even in geriatric patients, the necessity to evaluate new prehabilitation programs and other strategies to achieve better functional results are mandatory. Larger prospective or randomized observational studies are needed in onco-geriatric surgery.



ASSESSMENT ONCO-GERIATRIC PATIENTS



*Perioperative care of the elderly
Clinic and Organizational aspects
G. Bettelli Cambridge Univ. Press, 2018*

Integrated approach to onco-geriatric patients

«...Based on current evidence, it is **very difficult to reach a consensus** regarding the best domain of Geriatric Assessment...»



BACKGROUND/OBJECTIVES:

Randomized and nonrandomized single-center studies suggest that preoperative geriatric evaluation improves postoperative outcomes in older adults. The generalizability and population-level effect of preoperative geriatric evaluation has not been determined. Our objective was to measure the adjusted association between preoperative geriatric evaluation and postoperative outcomes.

SETTING:

Publicly funded universal healthcare system in Ontario, Canada.

PARTICIPANTS:

All adults aged 65 and older having major, elective, noncardiac surgery from 2002 to 2014 (N = 266,499).

INTERVENTION:

We studied geriatric consultations and comprehensive assessments performed in the 4 months prior to surgery. These were identified using validated methods.

MEASUREMENTS:

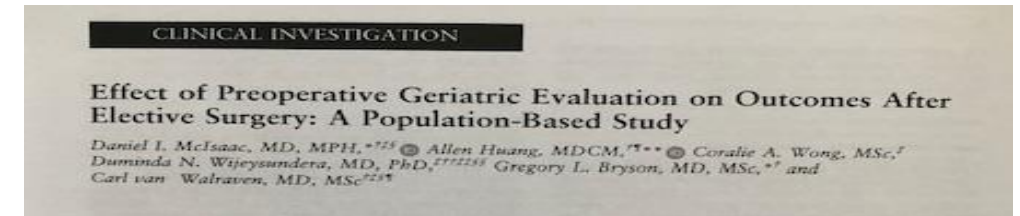
Ninety-day survival (primary outcome), in-hospital complications, length of stay, 30-day readmissions, need for supported discharge, and 90-day costs of care.

RESULTS:

The 7,352 participants (2.8%) who had a preoperative geriatric evaluation had longer 90-day survival than those who who did not (adjusted hazard ratio = 0.81, 95% confidence interval = 0.68-0.95). Length of stay and complication rates did not differ between groups, but participants evaluated by a geriatrician preoperatively had higher rates of supported discharge, readmission rates, and costs of care. Sensitivity analyses supported the association between preoperative geriatric assessment and 90-day survival.

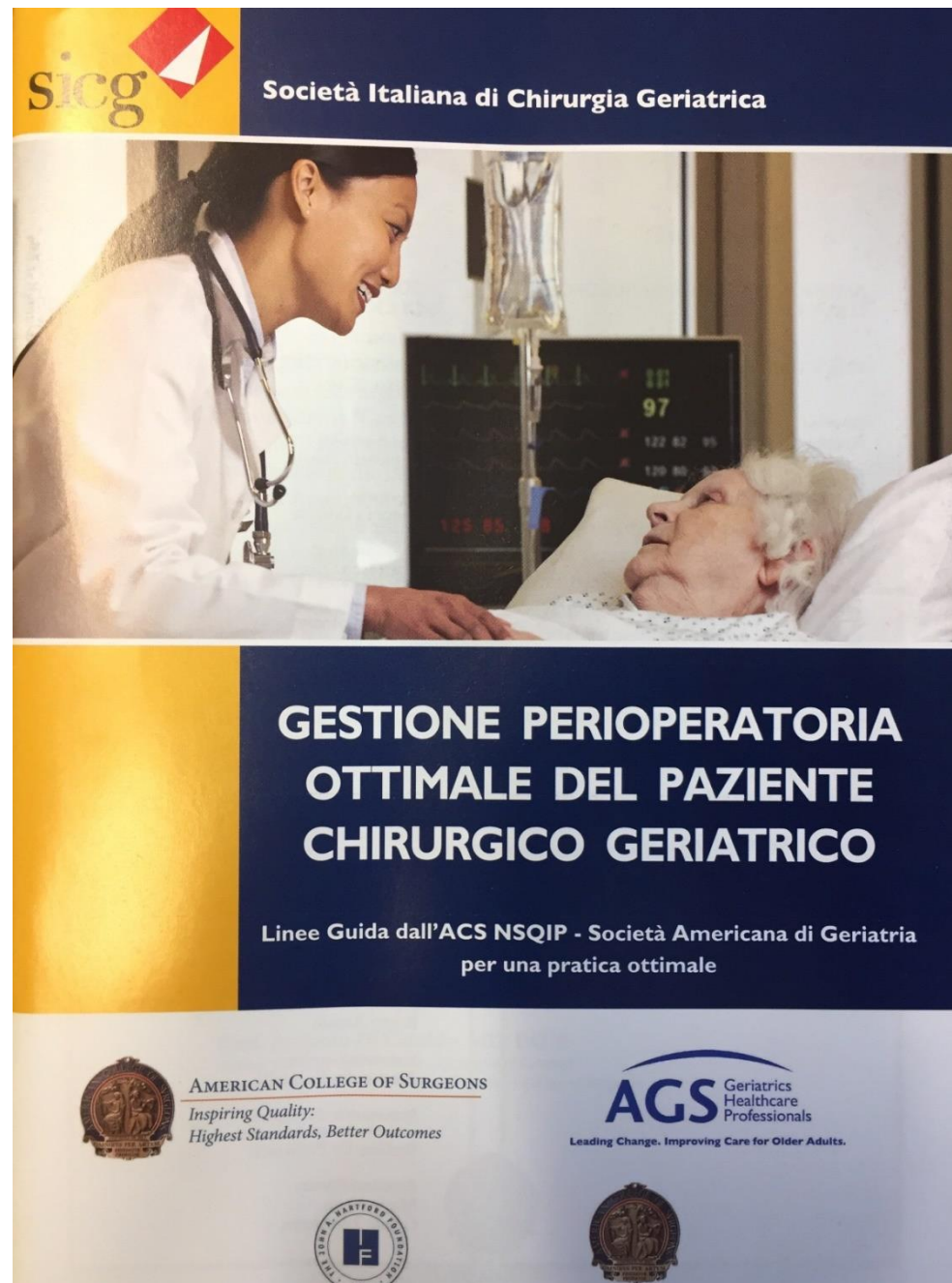
CONCLUSION:

In individuals aged 65 and older undergoing major, elective, noncardiac surgery, preoperative geriatric evaluation was associated with longer 90-day survival, but it is used infrequently. Given these results, and those of previous small studies, the influence of a geriatric evaluation on postoperative outcomes should be determined in a multicenter randomized trial.



PERIOPERATIVE MANAGEMENT

Un piccolo contributo!



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Cancer surgery in the elderly



- Despite the evidence that cancer is a disease of the elderly, very little level 1 evidence are reported
- Patients over 70 are often excluded from clinical randomized trials.
- EUROCARE-5: 21 million cancer diagnosis, 116 cancer registries, in 30 European countries reported an unfavorable cancer-related survival rates, among the oldest patients.
- The difficulty is the standard of care.
- QoL and patients perspectives can no longer be considered «secondary outcomes»,
- These patients have to stay in the center of care process.

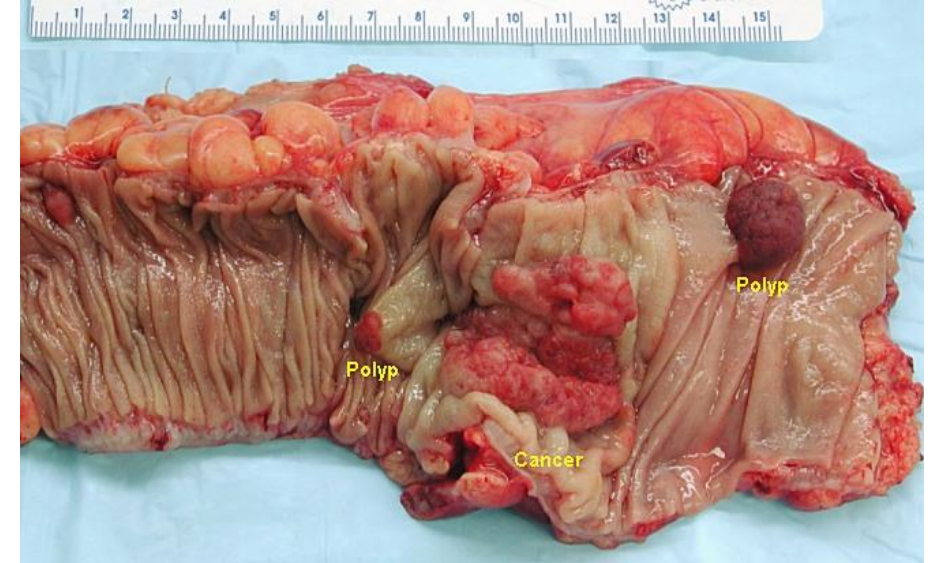


(Zulman et al 2011, De Angelis et al 2014)

Cancer surgery in the elderly



- Surgery is still the main strategy
- Septic complication
- Organ failure
- Perioperative treatment pathways
- Alternative non-invasive treatments should always be discussed
- Prehabilitation should be offered to patients with poor functional status



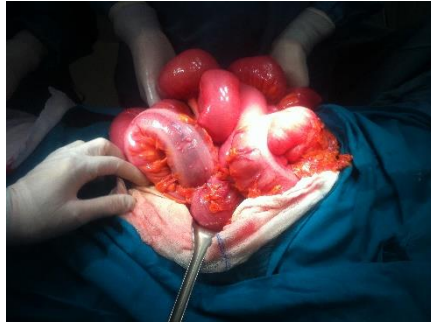
Emergency surgery in the elderly



- Represent up to 26% of all hospital admissions
- Mortality increases (threefold in comparison with young)
- Making diagnosis is particular challenging in senior adults
- Personalized approach: the diagnostic pathway , life expectancy, patients desire
- Communication: as clear as possible



Emergency surgery in the elderly



ARTICLES

Surgery for colorectal cancer in elderly patients: a systematic review

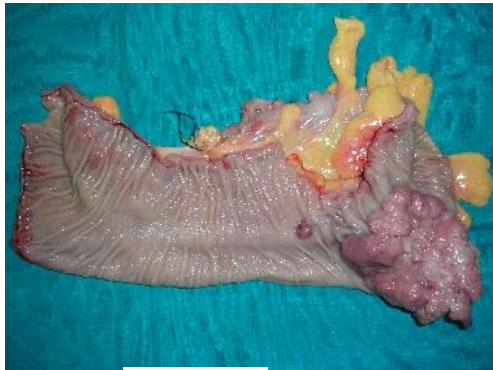
Colorectal Cancer Collaborative Group

34.194 pts

Emergency presentation

75-84 anni
18%

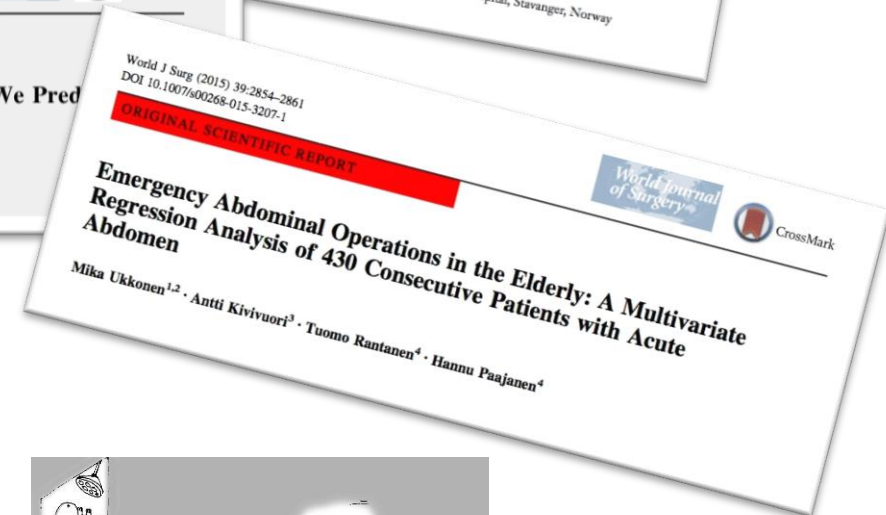
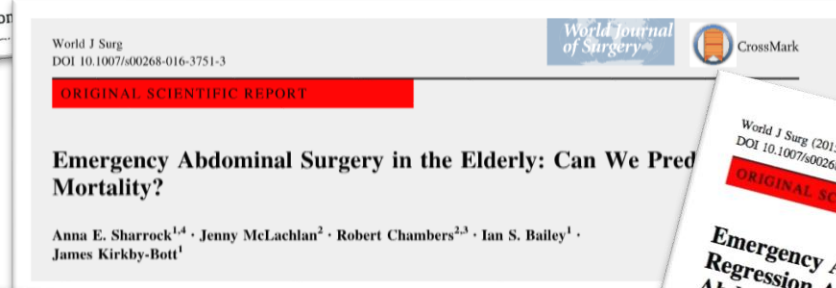
>85 anni
29%



Surgery	75-84 years	> 85 years
Curative intent	5660 (73%)	1302 (67%)
Palliative	2145 (28%)	630 (33%)
Emergency	1546 (18%)	611 (29%)
Elective	6858 (82%)	1506 (71%)



Antonio Crucitti



Emergency - Increasing Literature

International Journal of Surgery 28 (2016) 13–21



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Original research

A 15-year retrospective analysis of the epidemiology and outcomes for elderly emergency general surgical admissions in the North East of England: A case for multidisciplinary geriatric input



Ross C. McLean, Iain J.D. McCallum, Steve Dixon, Paul O'Loughlin*

Department of Colorectal Surgery, Queen Elizabeth Hospital, Gateshead, NE9 6SX, UK

105.000 emergency surgical admission > 70 years in NE England, in three periods

2000-2004

2005-2009

2010-2014

Emergency surgery in the elderly



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Table 1

Demographic and clinical characteristics of elderly emergency general surgical admissions by age group.

		Age (years)			Overall [N (%)]	p-Value
		70–79 [N (%)]	80–89 [N (%)]	≥90 [N (%)]		
Number of admissions		57 913 (55.2)	39 501 (37.6)	7588 (7.2)	105 002	
Gender	Male	30 404 (52.5)	17 563 (44.5)	2385 (31.4)	50 352 (48.0)	<0.001
	Female	27 508 (47.5)	21 938 (55.5)	5202 (68.6)	54 648 (52.0)	
Charlson score	Mean score (95% CI)	9.8 (9.7,9.8)	11.3 (11.2,11.4)	11.7 (11.5,11.9)	10.46 (9.8)	<0.001
	0–4	26 031 (44.9)	16 985 (43.0)	841 (11.1)	43 857 (41.8)	<0.001
	≥5	31 882 (55.1)	22 516 (57.0)	6747 (88.9)	61 145 (58.2)	<0.001
Deprivation Quintile	1 (Most)	12 170 (25.6)	7692 (23.8)	1344 (21.6)	21 206 (24.6)	<0.001
	2	11 786 (24.8)	7882 (24.4)	1454 (23.4)	21 122 (24.5)	
	3	8598 (18.1)	6135 (19.0)	1240 (19.9)	15 973 (18.6)	
	4	6791 (14.3)	4906 (15.2)	977 (15.7)	12 674 (14.7)	
	5 (Least)	8135 (17.1)	5749 (17.8)	1204 (19.4)	15 088 (17.5)	
Admission Method	A&E	16 363 (35.3)	11 283 (35.6)	2109 (35.1)	29 755 (35.4)	0.719
	GP	18 934 (40.8)	12 767 (40.3)	2484 (41.4)	34 185 (40.7)	
	Consultant Clinic	2291 (4.9)	1567 (4.9)	301 (5.0)	4159 (4.9)	
Clinical Risk Group	Other	8781 (18.9)	6046 (19.1)	1113 (18.5)	15 940 (19.0)	0.480
	1 (Lowest)	24 995 (43.5)	17 063 (43.6)	3360 (44.7)	45 418 (43.6)	
	2	16 996 (29.6)	11 646 (29.7)	2198 (29.2)	30 840 (29.6)	
	3	10 655 (18.6)	7135 (18.2)	1352 (18.0)	19 142 (18.4)	
	4 (Highest)	4780 (8.3)	3304 (8.4)	614 (8.2)	8698 (8.4)	
Day of Admission	Monday	10 078 (17.5)	6768 (17.2)	1348 (17.2)	18 194 (17.4)	0.128
	Tuesday	9002 (15.6)	6183 (15.7)	1200 (15.9)	16 385 (15.7)	
	Wednesday	8546 (14.8)	6078 (15.5)	1159 (15.4)	15 783 (15.1)	
	Thursday	8574 (14.9)	5954 (15.2)	1113 (14.8)	15 641 (15.0)	
	Friday	9061 (15.7)	6071 (15.5)	1130 (15.0)	16 262 (15.6)	
	Saturday	6195 (10.8)	4115 (10.5)	826 (11.0)	11 136 (10.7)	
	Sunday	6147 (10.7)	4120 (10.5)	767 (10.2)	11 034 (10.6)	
Day of Operation	Monday	1079 (13.6)	679 (13.8)	127 (12.9)	1885 (13.6)	0.167
	Tuesday	1303 (16.4)	808 (16.5)	172 (17.5)	2283 (16.5)	
	Wednesday	1312 (16.5)	842 (17.2)	184 (18.7)	2338 (16.9)	
	Thursday	1424 (17.9)	834 (17.0)	150 (15.3)	2408 (17.4)	
	Friday	1296 (16.3)	820 (16.7)	180 (18.3)	2296 (16.6)	
	Saturday	830 (10.4)	477 (9.7)	101 (10.3)	1408 (10.2)	
	Sunday	714 (9.0)	444 (9.1)	68 (6.9)	1226 (8.9)	
	Yes	7958 (13.8)	4904 (12.5)	982 (13.0)	13 844 (13.3)	
	No	49 645 (86.2)	34 385 (87.5)	6561 (87.0)	90 591 (86.7)	
Operation within 48 h	Yes	4274 (53.7)	2630 (53.6)	521 (53.1)	7425 (53.6)	<0.001
	No	3684 (46.3)	2274 (46.4)	461 (46.9)	6419 (46.4)	



Original research

A 15-year retrospective analysis of the epidemiology and outcomes for elderly emergency general surgical admissions in the North East of England: A case for multidisciplinary geriatric input

Ross C. McLean, Iain J.D. McCallum, Steve Dixon, Paul O'Loughlin*

Department of Colorectal Surgery, Queen Elizabeth Hospital, Gateshead, NE9 6SX, UK



Table 2
Demographics and clinical characteristics of elderly admissions split by 5 year time periods.

"Changes over time"

		Year period			Overall [N (%)]	p-value
		2000–04 [N (%)]	2005–09 [N (%)]	2010–14 [N (%)]		
Total number of admissions (all ages)		94 246	141 330	142 995	378 571	
Over 70s admissions (% of total)		27 772 (29.5)	39 328 (27.8)	37 902 (26.5)	105 002 (27.7)	<0.001
Age	Mean (95% CI)	79.0 (79.0,79.1)	79.2 (79.2,79.3)	79.5 (79.4,79.6)	79.3 (79.2,79.3)	<0.001
	70–79	15 921 (57.3%)	21 773 (55.4%)	20 219 (53.3%)	57 913 (55.2%)	<0.001
	80–89	9877 (35.6%)	14 874 (37.8%)	14 750 (38.9%)	39 501 (37.6%)	
	≥90	1974 (7.1%)	2681 (6.8%)	2933 (7.7%)	7588 (7.2%)	
Gender	Male	13 480 (48.5%)	18 864 (48.0%)	18 008 (47.5%)	50 352 (48.0%)	0.009
	Female	14 291 (51.5%)	20 464 (52.0%)	19 893 (52.5%)	54 648 (52.0%)	
Charlson score	Mean Score (95% CI)	8.6 (8.5,8.7)	10.5 (10.4,10.6)	11.8 (11.7,11.9)	10.5 (10.4,10.5)	<0.001
	0–4	14 821 (53.4%)	15 340 (39.0%)	13 696 (36.1%)	43 857 (41.8%)	<0.001
Deprivation quintile	≥5	12 951 (46.6%)	23 988 (61.0%)	24 206 (63.9%)	61 145 (58.2%)	
	1 (Most)	5855 (27.5%)	8088 (24.5%)	7263 (22.8%)	21 206 (24.6%)	<0.001
	2	4960 (23.3%)	8373 (25.4%)	7789 (24.5%)	21 122 (24.5%)	
	3	3978 (18.7%)	6035 (18.3%)	5960 (18.7%)	15 973 (18.6%)	
	4	3066 (14.4%)	4696 (14.2%)	4912 (15.5%)	12 674 (14.7%)	
Admission method	5 (Least)	3438 (16.1%)	5782 (17.5%)	5868 (18.5%)	15 088 (17.5%)	
	A&E	4040 (20.3)	10 814 (34.0)	14 901 (46.2)	29 755 (35.4)	<0.001
	GP	9512 (47.8)	14 818 (46.5)	9855 (30.5)	34 185 (40.7)	
	Consultant Clinic	853 (4.3)	1362 (4.3)	1944 (6.0)	4159 (4.9)	
Clinical risk group	Other	5515 (27.7)	4853 (15.2)	5572 (17.3)	15 940 (19.0)	
	1 (Lowest)	12 252 (44.3)	17 264 (44.0)	15 902 (42.8)	45 418 (43.6)	<0.001
	2	7559 (27.3)	11 536 (29.4)	11 745 (29.4)	30 840 (29.6)	
	3	5632 (20.3)	7107 (18.1)	6403 (17.2)	19 142 (18.4)	
	4 (Highest)	2240 (8.1)	3338 (8.5)	3120 (8.4)	8698 (8.4)	
Day of admission	Monday	4860 (17.5)	6957 (17.7)	6377 (17.1)	18 194 (17.4)	0.007
	Tuesday	4306 (15.5)	6163 (15.7)	5916 (15.8)	16 385 (15.7)	
	Wednesday	4236 (15.3)	5972 (15.2)	5575 (14.9)	15 783 (15.1)	
	Thursday	4139 (14.9)	5971 (15.2)	5531 (14.8)	15 641 (15.0)	
	Friday	4377 (15.8)	6101 (15.5)	5784 (15.5)	16 262 (15.6)	
	Saturday	3021 (10.9)	4033 (10.3)	4082 (10.9)	11 136 (10.7)	
	Sunday	2832 (10.2)	4131 (10.5)	4071 (10.9)	11 034 (10.6)	
Day of operation	Monday	493 (13.7)	629 (12.5)	763 (14.6)	1885 (13.6)	0.008
	Tuesday	567 (15.8)	859 (17.1)	857 (16.4)	2283 (16.5)	
	Wednesday	661 (18.4)	874 (17.4)	803 (15.4)	2338 (16.9)	
	Thursday	627 (17.4)	867 (17.3)	914 (17.5)	2408 (17.4)	
	Friday	582 (16.2)	859 (17.1)	855 (16.4)	2296 (16.6)	
	Saturday	354 (9.8)	499 (9.9)	555 (10.6)	1408 (10.2)	
	Sunday	311 (8.7)	438 (8.7)	477 (9.1)	1226 (8.9)	
Operation	Yes	3595 (12.9)	5025 (12.8)	5224 (14.0)	13 844 (13.3)	<0.001
	No	24 176 (87.1)	34 303 (87.2)	32 112 (86.0)	90 591 (86.7)	
Operation within 48 h	Yes	1847 (51.3)	2680 (53.3)	2898 (55.4)	7425 (53.6)	0.928
	No	1748 (48.6)	2345 (46.7)	2326 (44.5)	6419 (46.4)	

95% CI = 95% confidence interval for mean.

Note: Comparisons between categorical variables with time periods by chi-square test for trend. Comparisons between continuous variables and time periods by ANOVA.



Emergency surgery in the elderly

Length of hospital stay – Readmission within 30 days – In hospital mortality



Table 3

Length of stay, readmission rate and in-hospital mortality by patient demographics and clinical characteristics.

		Length of hospital stay in days [mean (95% CI)]	p-value	Readmission within 30 days of discharge [N (%)]	p-value	Mortality (in-hospital) [N (%)]	p-value
Overall		10.29 (16.9)		7805 (11.2)		9834 (9.4)	
Age group	≤70	4.5 (4.5,4.6)	<0.001	18 595 (10.3)	0.170	3410 (1.5)	<0.001
	70–79	9.9 (9.8,10.1)		4203 (11.0)		4132 (7.1)	
	80–89	10.9 (10.7,11.0)		2984 (11.2)		4491 (11.4)	
	≥90	10.2 (9.9,10.5)		618 (11.7)		1211 (16.0)	
Gender	Male	10.0 (9.8,10.1)	<0.001	3737 (11.4)	0.031	4570 (9.1)	0.002
	Female	10.6 (10.5,10.7)		4068 (10.9)		5264 (9.6)	
Charlson score	0–4	8.0 (7.9,8.1)	<0.001	3241 (10.5)	<0.001	1718 (3.9)	<0.001
	≥5	12.0 (11.8,12.1)		4564 (11.6)		8116 (13.3)	
Deprivation quintile	1 (Most)	10.2 (10.0,10.4)	0.003	1344 (10.1)	0.008	2095 (9.9)	<0.001
	2	10.0 (9.8,10.2)		1454 (10.0)		2024 (9.6)	
	3	10.0 (9.7,10.3)		1099 (9.7)		1461 (9.1)	
	4	9.9 (9.7,10.2)		899 (10.1)		1118 (8.8)	
	5 (Least)	9.5 (9.3,9.7)		856 (8.9)		1263 (8.4)	
Admission method	A&E	9.8 (9.7,10.0)	<0.001	2738 (12.9)	<0.001	2721 (9.6)	<0.001
	GP	9.5 (9.3,9.6)		1933 (10.1)		2790 (8.3)	
	Consultant Clinic	14.8 (14.3,15.4)		194 (10.2)		280 (6.9)	
	Other	11.4 (11.2,11.7)		1125 (16.2)		1176 (7.4)	
Clinical risk group	1 (Lowest)	6.86 (6.75,6.97)	<0.001	3491 (11.3)	0.074	1084 (3.0)	<0.001
	2	11.3 (11.1,11.5)		2248 (11.0)		1831 (7.4)	
	3	15.0 (14.7,15.2)		1411 (11.3)		2679 (16.3)	
	4 (Highest)	14.6 (14.2,15.0)		580 (10.2)		3067 (40.1)	
Day of admission	Monday	10.5 (10.2,10.7)	<0.001	1242 (10.5)	0.071	1471 (9.8)	<0.001
	Tuesday	10.3 (10.1,10.6)		1195 (11.1)		1370 (10.0)	
	Wednesday	10.4 (10.2,10.7)		1160 (11.0)		1266 (9.7)	
	Thursday	10.7 (10.4,11.1)		1160 (11.1)		1237 (9.6)	
	Friday	10.3 (10.1,10.6)		1269 (11.6)		1284 (9.6)	
	Saturday	9.6 (9.4,9.9)		841 (11.0)		1017 (11.4)	
	Sunday	10.0 (9.7,10.3)		886 (11.8)		1045 (11.8)	
Day of operation	Monday	15.5 (14.7,16.3)	0.039	121 (10.8)	0.710	231 (15.2)	0.010
	Tuesday	16.3 (15.6,17.1)		140 (10.1)		267 (14.3)	
	Wednesday	16.8 (15.9,17.6)		131 (9.4)		301 (16.3)	
	Thursday	16.5 (15.8,17.2)		137 (9.3)		296 (15.3)	
	Friday	16.11 (15.4,16.9)		147 (10.9)		291 (15.4)	
	Saturday	16.6 (15.6,17.5)		92 (10.3)		209 (18.4)	
	Sunday	14.8 (13.8,15.7)		77 (10.5)		194 (18.8)	
Operation	Yes	16.2 (15.9,16.5)	<0.001	845 (10.1)	0.002	1789 (15.9)	<0.001
	No [N = 13 884]						
	No	9.4 (9.31,9.53)		6908 (11.3)		6901 (9.3)	
	[N = 90 591]						
Operation within 48 h	Yes [N = 7425]	11.6 (11.2,11.9)	<0.001	465 (10.5)	0.238	892 (14.9)	<0.001
	No [N = 6419]	21.5 (21.0,22.0)		380 (9.7)		897 (17.2)	

➔ Oldest age group

➔ Charlson score

➔ Deprivation quintile

➔ Clinical risk group

➔ % of operation



Original research
A 15-year retrospective analysis of the epidemiology and outcomes for elderly emergency general surgical admissions in the North East of England: A case for multidisciplinary geriatric input
Ross C. McLean, Iain J.D. McCallum, Steve Dixon, Paul O'Loughlin*
Department of Colorectal Surgery, Queen Elizabeth Hospital, Gwent, NP23 5GU, UK



95% CI = 95% confidence interval for mean.

Note: Comparisons between readmission and mortality rates with patient factors by chi-square test for trend. Comparisons between length of stay and patient factors by AI



Emergency surgery in the elderly

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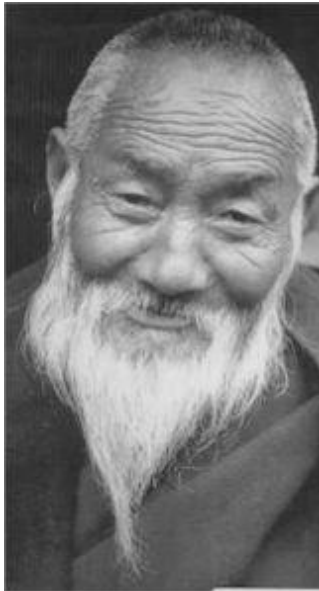


Original research

A 15-year retrospective analysis of the epidemiology and outcomes for elderly emergency general surgical admissions in the North East of England: A case for multidisciplinary geriatric input

Ross C. McLean, Iain J.D. McCallum, Steve Dixon, Paul O'Loughlin*

Department of Colorectal Surgery, Queen Elizabeth Hospital, Gateshead, NE9 6SX, UK



given the deficiencies in coding data it is likely that factors such as co-morbidity are underestimated. There is little reason to imagine that such a trend will not continue this workload is predicted to increase over 50% by 2037 [1]. Improvements in outcomes in terms of mortality and efficiency in terms of length of stay are apparent and may suggest that future challenges are not insurmountable. Additionally, the relative stability of the 'Top 10' diagnoses over time suggests that this workload is largely predictable. However new models of care, likely with increased input from MCOP specialists, will be required as well as the continued evolution of surgical evidence and practice. To ensure that such evidence applies to the population in the future, studies must include elderly patients and should include both mortality data and functional outcomes for the patient after treatment.



Patients more complex, higher mean age

SURGERY in the elderly: role of MIS ? - Laparoscopy

- *Hospital stay*
- *Intraoperative blood loss*
- *Return normal bowel function*
- *Wound infections*
- *Postop cardiac complications*
- *Operative time*
- *Effects of pneumoperitoneum*
- *Prolonged anaesthesia and cognitive functions*

Surg Endosc (2013) 27:19–30
DOI 10.1007/s00464-012-2414-1



Laparoscopic versus open colorectal resection in the elderly population

Katherine Gralley · Sheraz R. Markar ·
Alan Karthikesalingam · Rima Aboud ·
Paul Ziprin · Omar Faiz

Table 3 Oncological quality of surgery

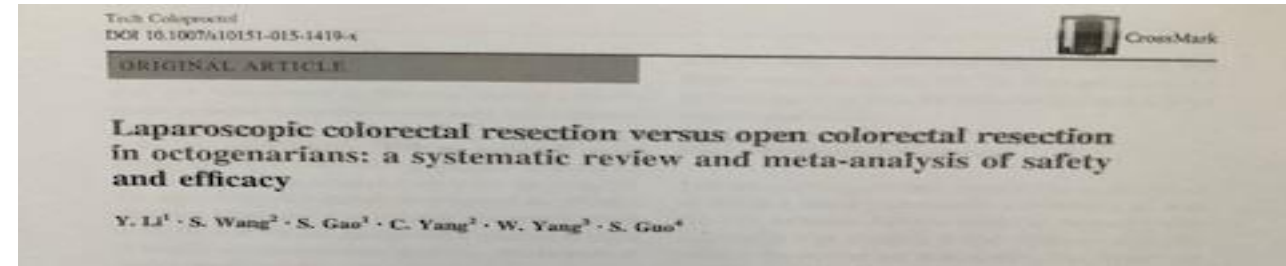
Characteristic	Open	Laparoscopic	p-value
No. of lymph nodes collected, mean \pm SD	24.8 \pm 10.1	22.7 \pm 11.4	0.158
Pathological proximal margin (mm), mean \pm SD	109 \pm 53	109 \pm 65	0.984
Pathological distal margin (mm), mean \pm SD	74 \pm 40	85 \pm 50	0.104
Positive rates of circumferential margin, n (%)	4 (4.0)	3 (3.0)	0.700

Conclusion

The results of this pooled analysis demonstrate the potential short-term advantages of laparoscopic colorectal resection in the elderly population with a reduction in length of hospital stay, intraoperative blood loss, incidence of postoperative pneumonia, time to return of normal bowel function, and incidence of postoperative wound infection. Further studies are required to examine long-term survival following laparoscopic and open colorectal resections in the elderly population.



- Safe and feasible
- Faster functional recovery
- Colorectal surgery has the greater amount of Literature



1066 laparoscopic colorectal resections
vs
1034 open colorectal resection

laparoscopic approach was:

safer, lower risk of infection, less i.o. blood loss, shorter lenght of stay and reduced incidence of postoperative ileus

Robot-assisted surgery in elderly and very elderly population: our experience in oncologic and general surgery with literature review

Graziano Ceccarelli¹ · Enrico Andolfi¹ · Alessia Biancafarina¹ · Aldo Rocca^{1,2} ·
Maurizio Amato³ · Marco Milone³ · Marta Scricciolo¹ · Barbara Frezza¹ ·
Egidio Miranda¹ · Marco De Prizio¹ · Andrea Fontani¹

- *Age not a contraindication for MIS and Robotic*
- *Skilled surgeons*
- *Oncologic results comparable*
- *Customer decision (case by case)*



In our review, robot-assisted surgery is a safe and effective technique for the aging patient population, especially for major abdominal cancer surgery. There was no increased risk of death or morbidity compared to younger patients in the three groups examined. An higher conversion rate was observed in our experience for patients 65–79 years. Prolonged operative time and in any cases steep positions (Trendelenburg) have not represented a problem for the majority of patients. Nevertheless, considering the high direct costs, minimally invasive robot-assisted surgery should be done on a case-by-case basis, tailored to each patient with their specific histories and comorbidities.

In clinical practice, the decision for surgical treatment in elderly patients must also be made on a case-by-case basis. A multidisciplinary approach is the best pathway of managing; efforts reducing associated morbidity are essential. In conclusion, one may never be too old to have a minimally invasive robotic approach.

Nei pazienti anziani c'è una maggior % di malnutrizione (>38.5%)

L'ESPEN ha stabilito le linee guida per la NE per la fase po del pz anziano

- Il termine ERAS è acronimo di **Enhanced Recovery After Surgery**, ovvero processo di recupero post-chirurgico potenziato/migliorato.
- L'ERAS è un percorso di assistenza perioperatoria multimodale in grado di ottenere un precoce recupero dei pazienti sottoposti ad interventi chirurgici maggiori.
- L'ERAS rappresenta un cambiamento della assistenza perioperatoria in quanto aggiorna le pratiche assistenziali con le più recenti evidenze scientifiche prevedendo una valutazione multidisciplinare integrata in tutto il percorso terapeutico del paziente sottoposto a chirurgia maggiore.
- ***E' stato dimostrato che l'impiego di protocolli ERAS riduce i tempi di degenza postoperatoria del 30%, le complicanze postoperatorie del 50% e, non ultimo, i costi dell'assistenza ospedaliera.***

- Elderly patients have higher levels of comorbidity, frailty and social care requirements and by minimizing of stress reactions, ERAS protocols should avoid stressing vulnerable and compromised organs in this subgroup of patients.
- Sarcopenia has been shown to promote p.o. complication.
- On 310 pts consecutively operated of colorectal cancer 30 day, mortality rate in sarcopenic patents was 8.8% vs 0.7% in non sarcopenic pts.

Preoperative	Perioperative	Postoperative
Preoperative information, education and counseling	Favor laparoscopic surgery	Early removal of bladder catheter
Stop smoking and alcohol consumption	Anesthesia allowing rapid awakening	Stop IV fluids as soon as possible
No preoperative bowel preparation	No fluid overloading and use of vasopressors	Early oral fluids
Clear fluids up to 2 h and solids up to 6 h before surgery	Thoracic epidural for open surgery	Early feeding and use of ONS if needed
Preoperative oral carbohydrate treatment	No epidural for laparoscopic surgery	Use of laxative agents
Avoidance of long- or short-acting sedative medication	PONV prophylaxis	Early mobilization
Prophylaxis against thromboembolism	Prevent hypothermia	Minimize hyperglycemia
Antimicrobial prophylaxis	No routine use of nasogastric tubes	Postoperative thoracic epidural analgesia
	No routine use of drains	

Legend: PONV: Post-operative nausea and vomiting, ONS: Oral nutritional supplements

Reisinger et al,2017

Postoperative Management

Table 34.2 ERAS guidelines for different types of surgery

Author, journal, year	Surgery
A. Thorell, <i>World Journal of Surgery</i> , 2016	Bariatric surgery
G. Nelson, <i>Gynecologic Oncology</i> , 2015	Gynecologic/oncology surgery
M. J. Scott, <i>Acta Anaesthesiologica Scandinavica</i> , 2015	Gastrointestinal surgery
K. Mortensen, <i>British Journal of Surgery</i> , 2014	Gastrectomy
Y. Cerantola, <i>Clinical Nutrition</i> , 2013	Radical cystectomy for bladder cancer
K. Lassen, <i>World Journal of Surgery</i> , 2012	Pancreaticoduodenectomy
U. O. Gustafsson, <i>World Journal of Surgery</i> , 2012	Elective colonic surgery
J. Nygren, <i>World Journal of Surgery</i> , 2012	Elective rectal/pelvic surgery
E. Meloul, <i>World Journal of Surgery</i> , 2016	Liver resection
C. J. Dort, <i>JAMA OHNS</i> , 2017	Head and neck Cancer surgery
C. Temple-Oberle, <i>Plastic & Reconstr Surgery</i> , 2017	Breast reconstruction



Enhanced recovery care after colorectal surgery in elderly patients. Compliance and outcomes of a multicenter study from the Spanish working group on ERAS

Abstract

Purpose ERAS (enhanced recovery after surgery) programs have proven to reduce morbidity and hospital stay in colorectal surgery. However, the feasibility of these programs in elderly patients has been questioned. The aim of this study is to assess the implementation and outcomes of an ERAS program for colorectal cancer in elderly patients.

Methods This is a multicenter observational study of a cohort of elderly patients undergoing colorectal surgery within an ERAS program. A total of 188 consecutive patients over 70 years who underwent elective colorectal surgery within an ERAS program at three institutions during a 2-year period were included. The compliance with the ERAS protocol interventions was measure. Complications were evaluated according to Clavien-Dindo classification. Data on length of stay and readmission rates were analyzed.

Results Early intake and early mobilization were the most successfully carried out interventions. There was a global compliance rate of 56 % of patients for whom compliance was achieved with all measured interventions. The median 13 % had major complications; of them, 8 % patients were reoperated. The readmission rate was 6.4 %.

A total of 240 elderly patients with colorectal carcinoma (aged ≥ 70 years) undergoing open colorectal surgery was randomly assigned into two groups, in which the patients were managed perioperatively either with traditional or fast track approaches.



Conclusions ERAS after colorectal surgery in elderly patients presents as safe and feasible based on good reported outcomes of compliance rates, complications, readmissions, and needs for reoperation.

Fast-track surgery decreases the incidence of postoperative delirium and other complications in elderly patients with colorectal carcinoma

Yitao Jia • Guixing Jin • Shangwei Guo • Bin Gu •
Zujian Jin • Xing Gao • Zhongxin Li

Table 3 Comparison of postoperative recovery and complications between the FTS and traditional group

	FTS (117)	Traditional (116)	p value
LOS (day)	9.01 \pm 1.75	13.21 \pm 1.32	<0.001
Functional recovery			
Time to pass flatus (h)	48.50 \pm 9.59	77.66 \pm 7.18	<0.001
Serum albumin (g/L)	28.05 \pm 2.82	26.26 \pm 4.12	<0.001
Glucose (mmol/L)	8.30 \pm 2.49	10.25 \pm 2.43	<0.001
ALT (IU/L)	34.65 \pm 12.25	34.88 \pm 11.82	0.738
AST (IU/L)	30.43 \pm 10.78	29.47 \pm 10.40	0.356
Cr (μ mol/L)	77.05 \pm 23.80	75.11 \pm 25.04	0.675
BUN (mmol/L)	5.63 \pm 3.60	5.62 \pm 3.08	0.831
Complications (cases)			
Infection of incision	6	8	0.570
Pulmonary infection	6	19	0.006
Urinary infection	5	13	0.047
Anastomotic leakage	3	2	1.000
Intestinal obstruction	4	6	0.736
Heart failure	4	13	0.022
DVT	4	7	0.340

188 pts. >70 ys. Older patients !!!



EXPERT REVIEW

Enhanced recovery after surgery—ERAS—principles, practice and feasibility in the elderly

Olle Ljungqvist¹ · Martin Hubner²

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- ❖ Available data all point in the direction that ERAS protocols are beneficial for older and fragile patients who are able to adapt to the ERAS criteria.
- ❖ Another interesting treatment modal that is emerging is the concept of **prehabilitation**. This is a program where patients take on physical training and take additional whey protein supplementation to strengthen their mobility. Studies are emerging indicating that it is the most vulnerable and fragile with the lowest physical capacity that gains the most from these programs. This may develop into an import additional preparation for the older and fragile patient.
- ❖ More elderly patients should receive such perioperative treatment, and it is highly likely that they will have similar length of stay and the same rate of postoperative readmissions and complications as the younger patients.

Postoperative management



- Postoperative care begins at the end of surgical procedure
- Continues in the operating room till discontinuation of anesthesia
- Admission to surgical ward, till to hospital discharge
- Postoperative adverse events occur in between 10/70 % of elderly patients depending on age, comorbidity and disease leading to surgery

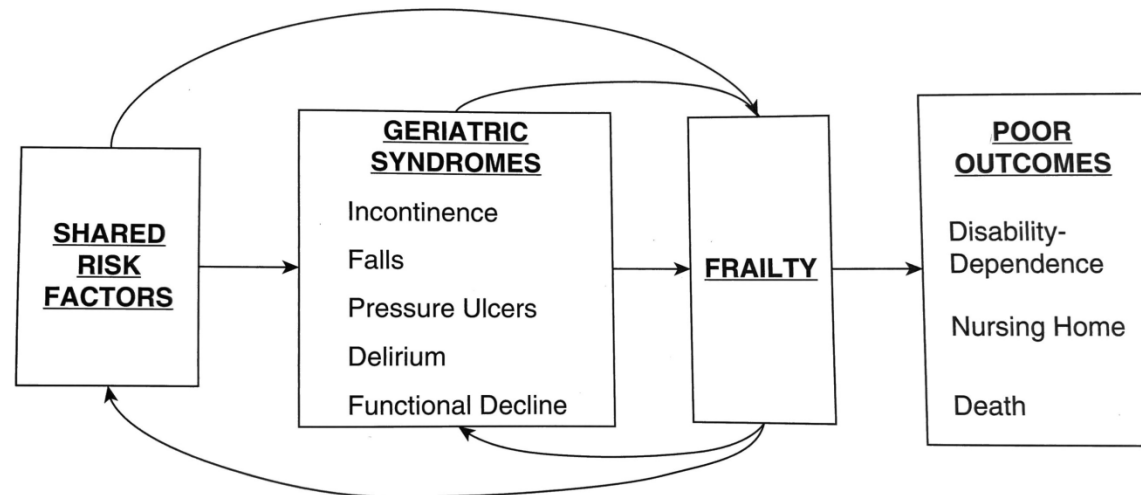
The goal is to: prevent, recognizing and managing postoperative complication is pivotal in elderly patients care
minimize the EPSs (early postoperative complications)

Delirium/cognitive impairment, P.O. pain, pulmonary infection, urinary infection, nutritional status, fall risk, IVU, functional decline, pressure ulcer

Often multifactorial

Condition that occurs when the accumulated effects of impairments in multiple system render person vulnerable to situational challenge

- Occur frequently in older
- Precipitating by one or more trigger
- Partly inter-related
- Often linked to functional decline
- Often negative for outcomes



*Perioperative care of the elderly. Clinic and Organizational aspects
G. Bettelli Cambridge Univ. Press, 2018*

Are preventable?

Unfortunately not every risk factor detected during preoperative period can be corrected but:.....

Valutazione giornaliera per	Strategie di Prevenzione/Gestione
Delirium/alterazione cognitiva	<ul style="list-style-type: none"> Controllo del dolore Ottimizzazione dell'ambiente fisico (igiene del sonno, protocolli di sonno, minimizzare le limitazioni del movimento, incoraggiare la famiglia ad essere al letto del paziente) Aiuti visivi e uditivi accessibili Rimuovere i cateteri Monitoraggio per sindrome di astinenza Minimizzare i farmaci psicoattivi Evitare farmaci potenzialmente inappropriati (per esempio, i farmaci indicati dai criteri di Beers)
Dolore perioperatorio acuto	<ul style="list-style-type: none"> Educazione continua riguardante la sicurezza e l'efficace utilizzo di trattamenti istituzionali Storia clinica di dolore Controllo del dolore multimodale e individualizzato Titolazione di dose vigile
Complicazioni polmonari	<ul style="list-style-type: none"> Fisioterapia toracica e spirometria incentivata Immobilizzazione/deambulazione precoce Precauzioni all'aspirazione
Rischio di cadere	<ul style="list-style-type: none"> Precauzioni universali alle cadute Aiuti visivi e uditivi accessibili Utilizzo dei bagni prestabilito Trattamento appropriato del delirium Mobilizzazione/deambulazione precoce Terapia fisica/occupazionale precoce se indicata

Capacità di mantenere una nutrizione adeguata	<ul style="list-style-type: none"> Strumenti di assistenza alla camminata Riprendere la normale alimentazione appena possibile Rendere disponibili le dentiere Supplementi se indicati
Prevenzione delle IVU	<ul style="list-style-type: none"> Documentazione giornaliera dell'indicazione al catetere di Foley Attenzione ai cateteri, igiene delle mani, precauzioni barriera
Declino funzionale	<ul style="list-style-type: none"> Modelli e pathway di trattamento Strutturale: corridoi sgombri, orologi grandi e calendari Approcci multidisciplinari Mobilizzazione precoce e/o PT/OT Partecipazione familiare Supporto nutrizionale Minimizzare le legature del paziente
Ulcere da decubito	<ul style="list-style-type: none"> Ridurre/minimizzare la pressione, la frizione, l'umidità, le forze longitudinali Mantenere una nutrizione adeguata Cura delle ferite
Vedi la sezione II.B in queste linee guida e le Linee Guida Pratiche dell'ASA per la Gestione Acuta del Dolore nelle Impostazioni Perioperatorie	

Care transition and hospital discharge



And after surgery ?

I pazienti dovrebbero essere sottoposti a valutazioni oggettive prima di essere dimessi e un piano di follow-up appropriato dovrebbe essere iniziato:

a. Nutrizione (Mini Nutritional Assessment) b. Cognizione (3-Item Recall o Mini Mental State Exam) c. Capacità di deambulare (Timed Up e Go Test) d. Stato funzionale e. Presenza di delirium

Se un paziente anziano viene sottoposto ad un intervento chirurgico in elezione, o non in elezione che richieda ricovero e che viene dimesso dall'ospedale ad una casa di riposo, allora dovrebbero essere fornite delle istruzioni di ricovero scritte e dovrebbero essere eseguiti i seguenti passaggi:

Il team di assistenza sanitaria dovrebbe documentare e comunicare la storia clinica del paziente, i suoi risultati, tutti gli eventi o le problematiche postoperatorie con il medico che ha trattato in prima linea il paziente

TAKE HOME MESSAGES...



- The **growth** in the **number and proportion** of the older adults is unprecedented in the history and create an **urgent need** of caregiving ...
- Surgical elderly population is significantly **changing** over times
- The number of older people undergoing **complex surgical procedures** has increased faster than the rate of population ageing
- Among the elderly those who are vulnerable or frail particularly **deviate from the standard curves**
- **Complete and adequate application** of a validated risk prediction model for acute care based on «**frailty syndromes**» is mandatory (AdL, IAdL, CGA, Cr-Possum, GDS, CIRS ...)
- **Prehabilitation** have to be considered



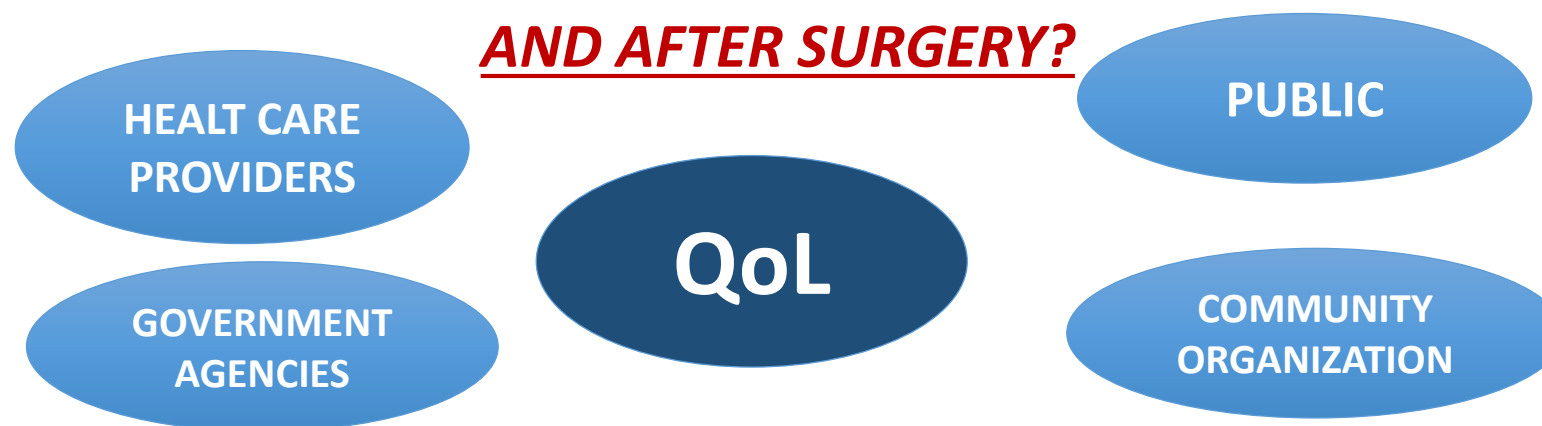
TAKE HOME MESSAGES...



- **MIS and Robotic** (customer case) are not a controindication also for **more complex surgical procedures**
- **In perioperative period ERAS protocols** may play a significant role
- **In postoperative period** the goal is to **minimize the EPSs** (early postoperative complications)
- Despite **impressive advance** in anesthesiology, surgical technology, less invasive procedures, **chronologic age** remains one of the the strongest independent variable in predicting worse surgical outcomes
- A multidimensional / multidisciplinary approach is the key to rejecting the gut-feeling type of decision and ... rediscover the true essence of medicine : **personalized care for our patients**



TAKE HOME QUESTIONS....



Surgery have not only to be intended to increase survival
but also ***to mantain the quality of remaining life***



Grazie!

