

Hôpital du Valais
Spital Wallis



Prise en charge ortho-gériatrique des fractures de hanche: l'expérience valaisanne

Dr Martial Coutaz
Service de Gériatrie

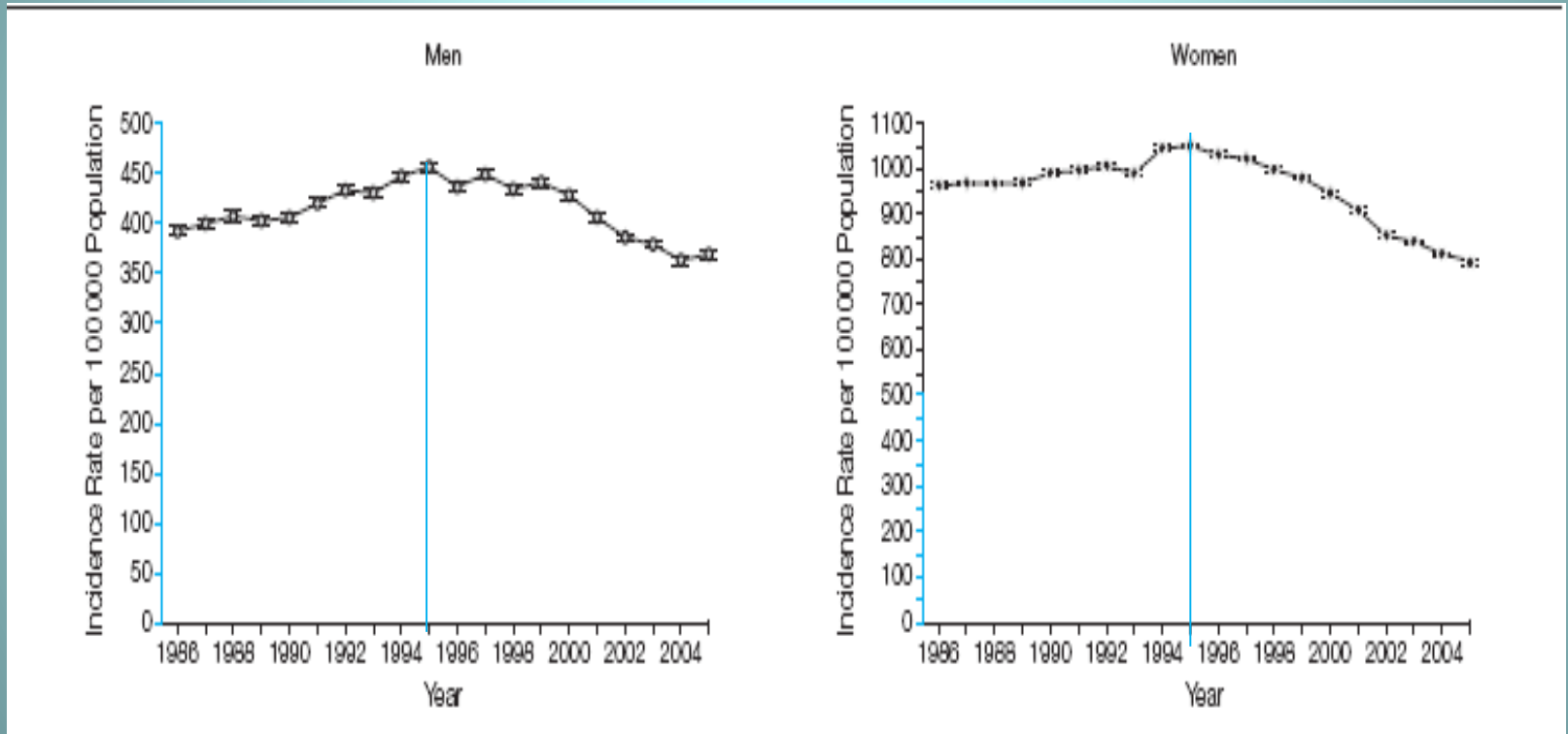
Hôpital du Valais

Objectifs

- **Epidémiologie**
- Modèles de prise en charge
- Facteurs d'intervention dans la filière
- Unité d'ortho-gériatrie de l'hôpital du Valais

Incidence of Hip Fractures in the United States

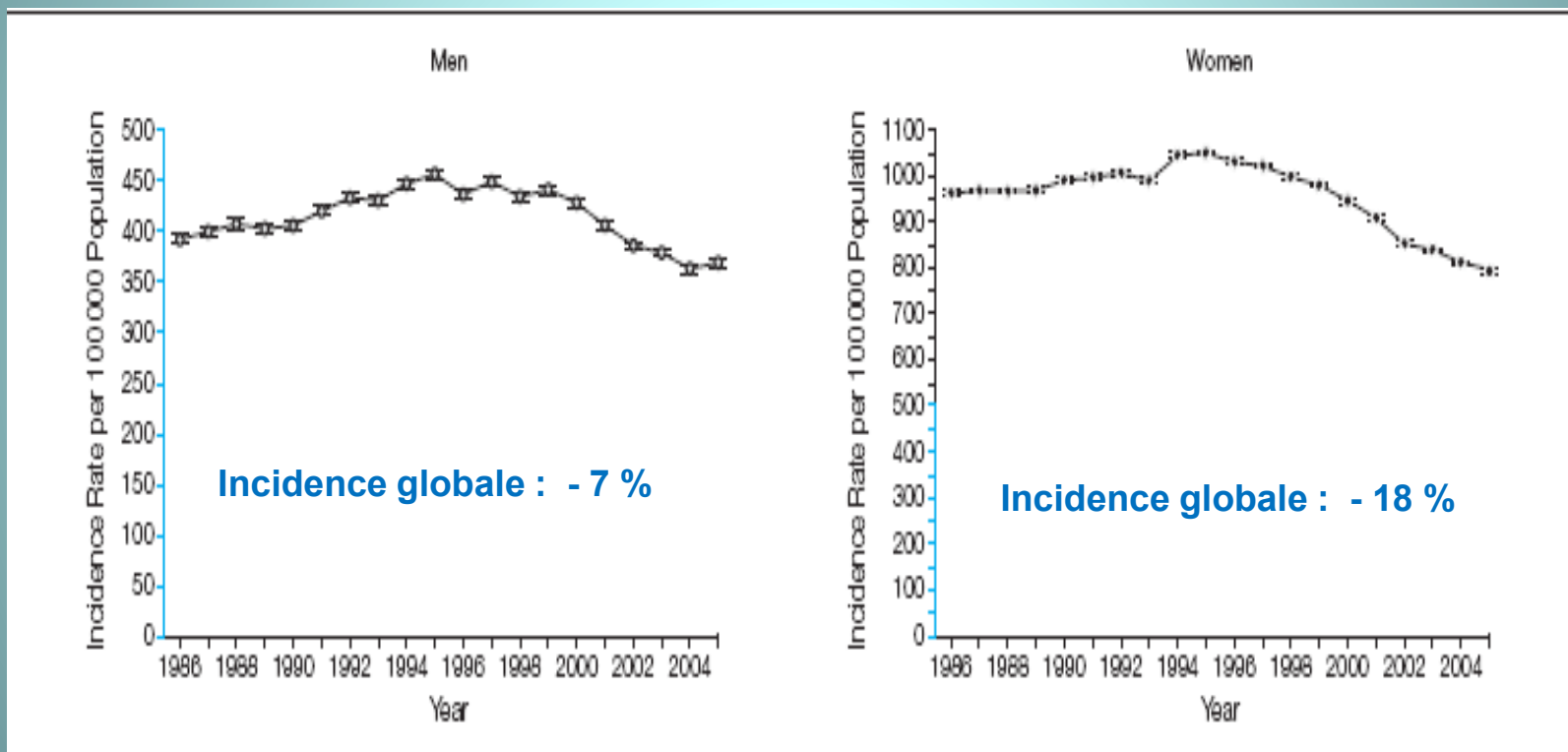
Trend in Age-Adjusted Hip Fracture Incidence for Men and Women



Data are based on a 20% sample of Medicare claims; error bars indicate 95% confidence intervals. $P < .001$ for a change in trend in 1995. Regions of y-axes that are in blue indicate incidence rate of 0 to 500 per 100,000 population.

Incidence of Hip Fractures in the United States

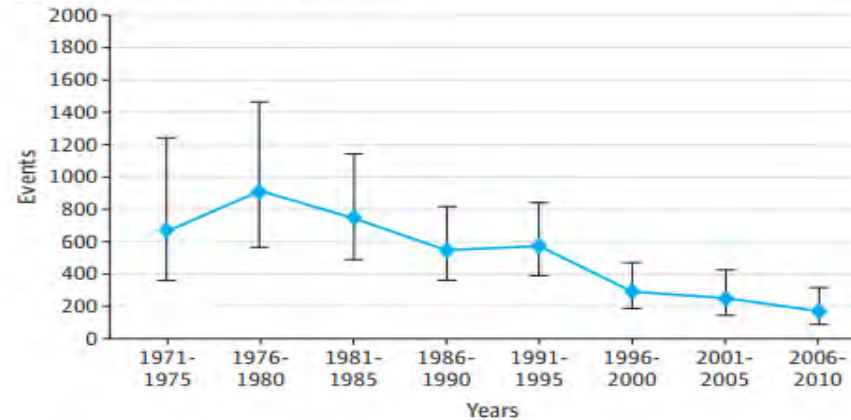
Trend in Age-Adjusted Hip Fracture Incidence for Men and Women



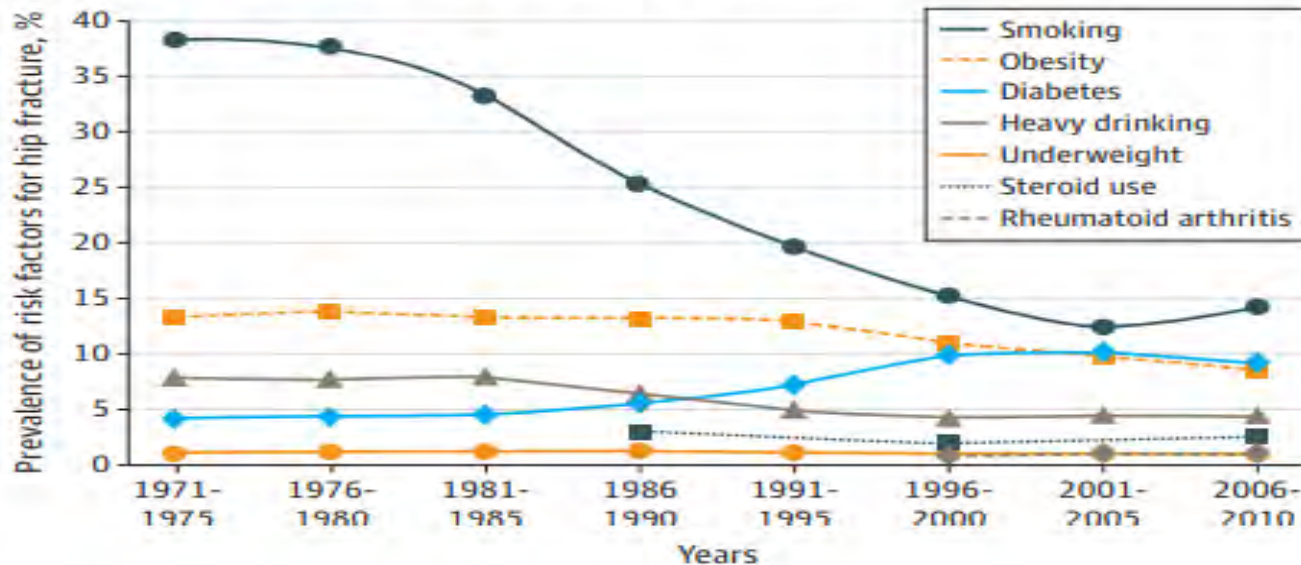
Data are based on a 20% sample of Medicare claims; error bars indicate 95% confidence intervals. $P < .001$ for a change in trend in 1995. Regions of y-axes that are in blue indicate incidence rate of 0 to 500 per 100,000 population.

Incidence of hip fracture over 4 decades in the Framingham Heart Study

A Hip fracture incidence, 1971-2010

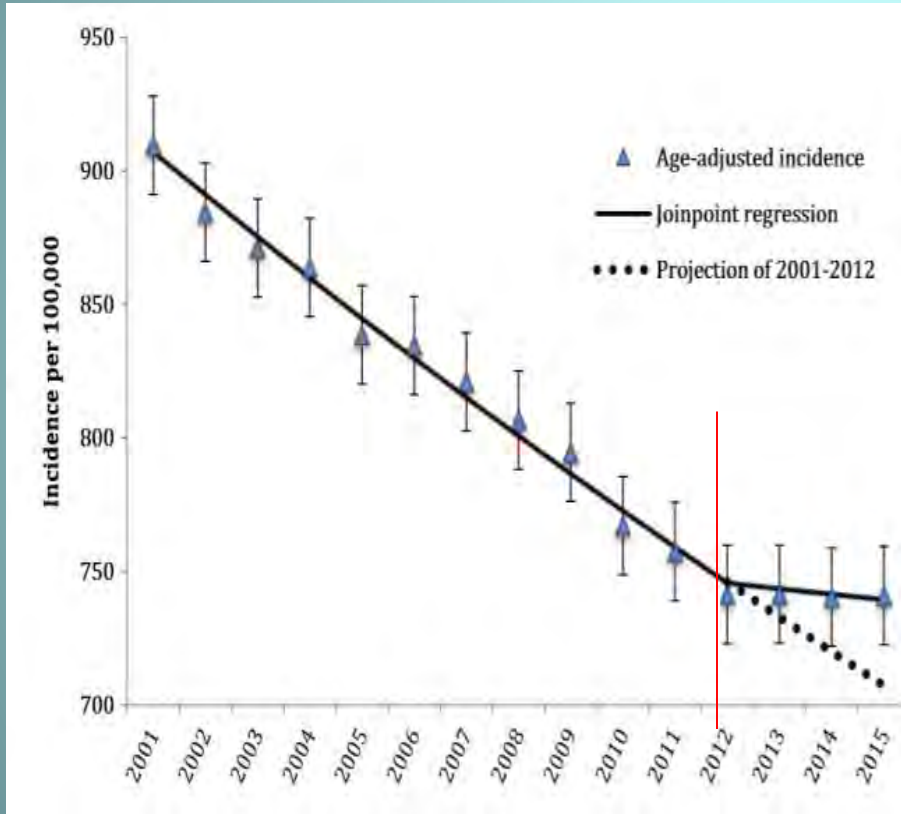


B Prevalence of risk factors for hip fracture, 1971-2010



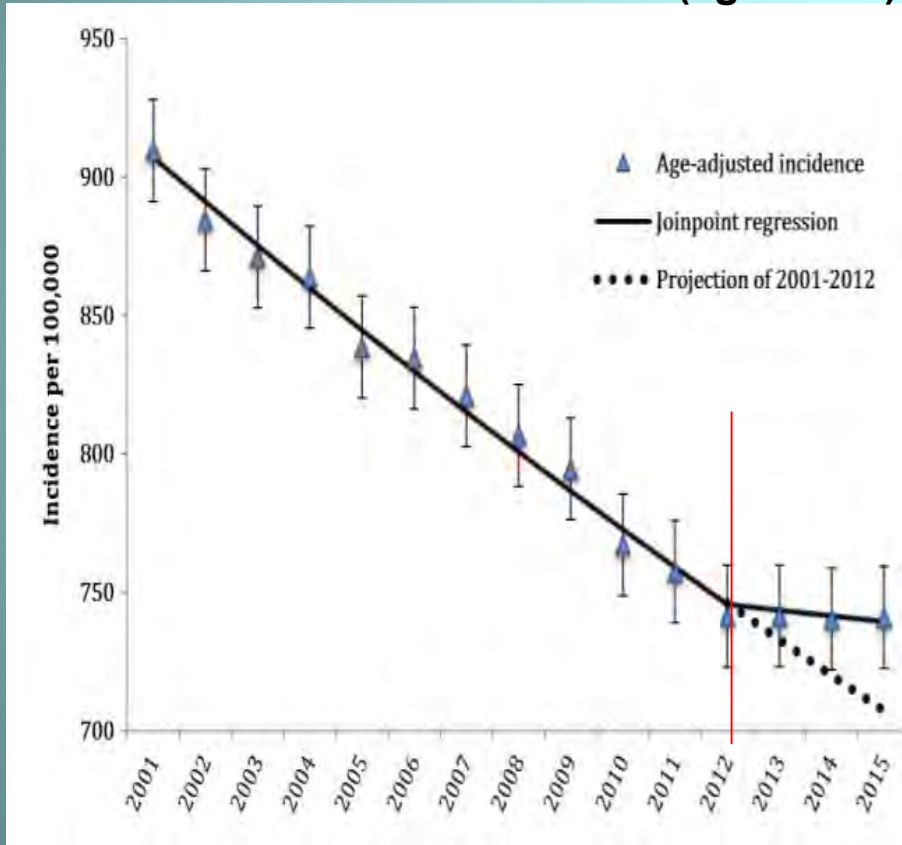
Hip Fractures trends in the United States: 2002 to 2015

Annual incidence of hip fractures
in US female Medicare (aged ≥ 65)

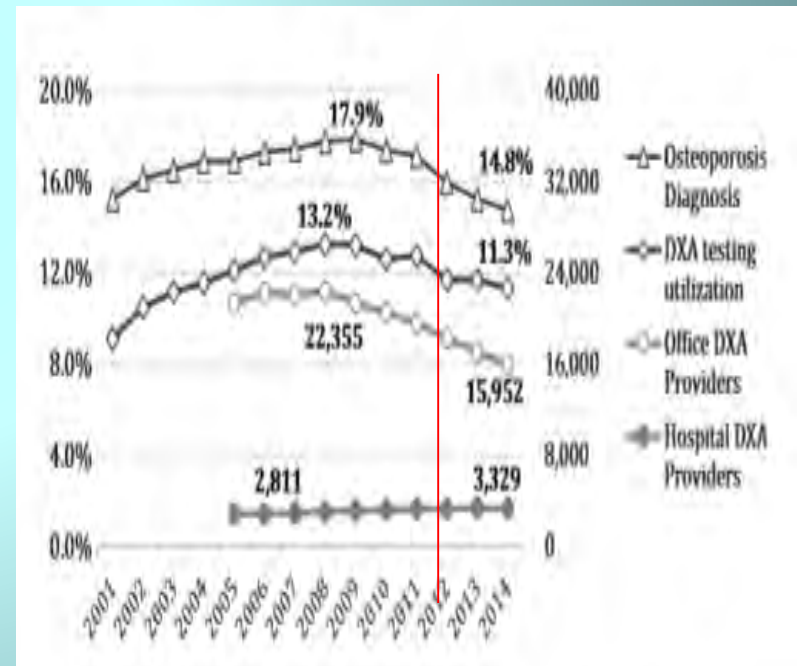


Hip Fractures trends in the United States: 2002 to 2015

Annual incidence of hip fractures in US female Medicare (aged ≥ 65)



Annual osteoporosis diagnosis



Utilization of osteoporosis medication after a fragility fracture among elderly Medicare beneficiaries

145 185 elderly with fragility fractures (mean age 80.9 y, 81 % female, 30 % hip fracture)

Table 2 Percentage of patients who initiated osteoporosis medications within 12 months following a fracture^a

	Women				Men			
	Total ^b	Hip	Vertebra	NHNV ^c	Total ^b	Hip	Vertebra	NHNV ^c
<i>n</i>	83,180	26,263	21,960	34,957	25,164	8556	9071	7537
Treatment, % ^d	16.3	13.2	28.5	10.9	10.3	7.3	18.1	4.3
Days to treatment initiation								
Median	81	103	51	107	68	104	46	105
Q1–Q3	32–163	55–183	15–124	51–202	25–140	58–182	14–112	53–188

IV intravenous, *NHNV* non-hip-non-vertebral, *Q1* first quartile, *Q3* third quartile

^a Not treated with an osteoporosis medication before the index fracture

^b Total includes hip, vertebral, and NHNV

^c NHNV includes femur, lower leg, forearm, shoulder/upper arm, and rib/sternum

^d Treated with any of oral bisphosphonates, *IV* zoledronic acid, raloxifene, teriparatide, calcitonin, or denosumab after the index fracture

In those not already previously treated with an osteoporosis medication only 1 in 7 patients received treatment !

Epidemiology of Hip Fractures

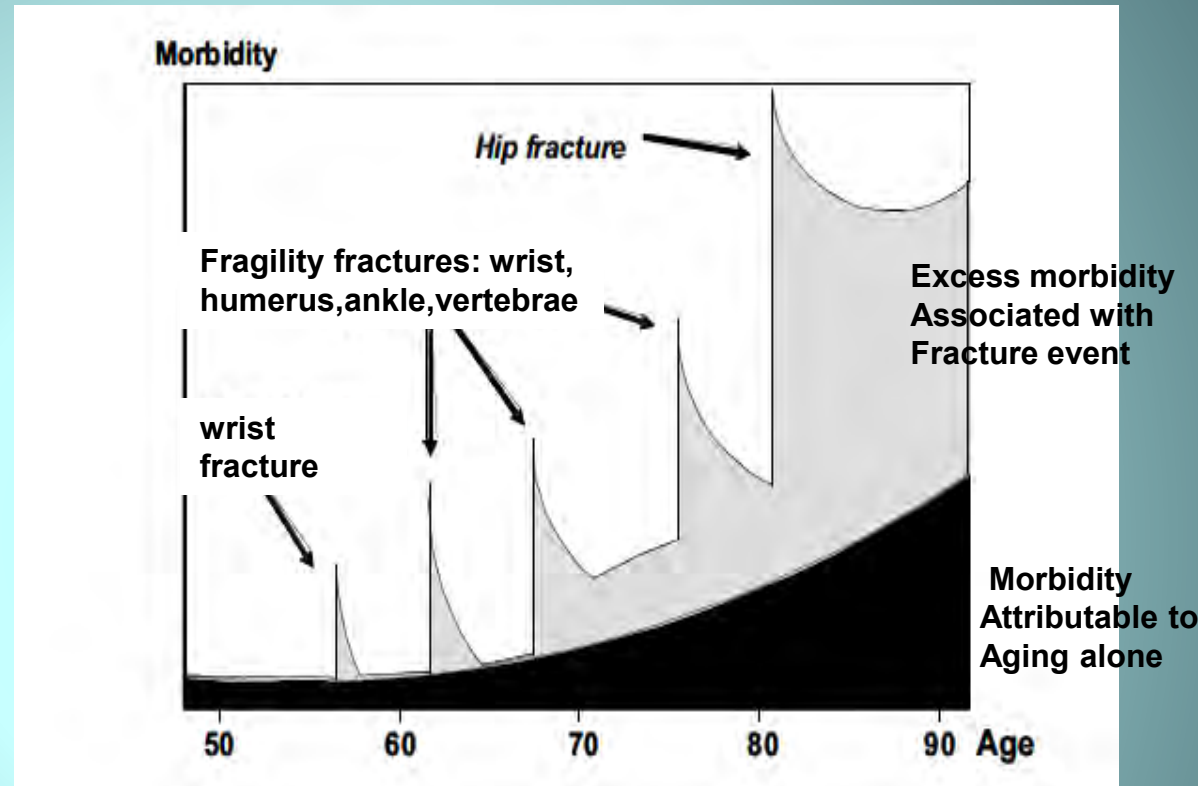
- > than 1.6 million older adults

Mortality :

- 5-10 % die in a month
- 25-30 % die in a year

- A year after surgery :

- 40% = admission to nursing home
- 40-60% = regained their pre-fracture of mobility and ability to perform instrumental activity of daily living



Survival after hip fracture among nursing home residents

Figure 1. Survival at up to 365 Days Among 60 III US Long-term Care Residents Hospitalized With Hip Fracture Between July 1, 2005, and June 30, 2009

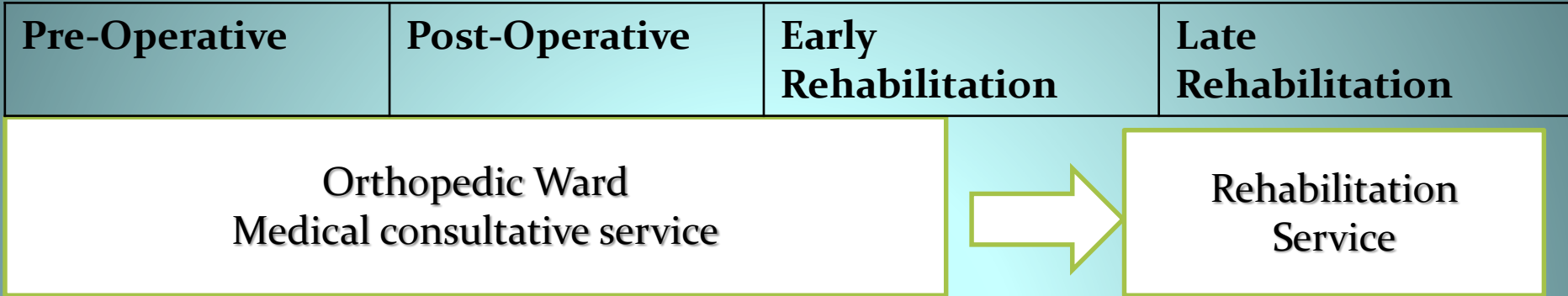


Male patients demonstrate a lower probability of survival than women at all time points after fracture ($P < .001$ by log-rank test).

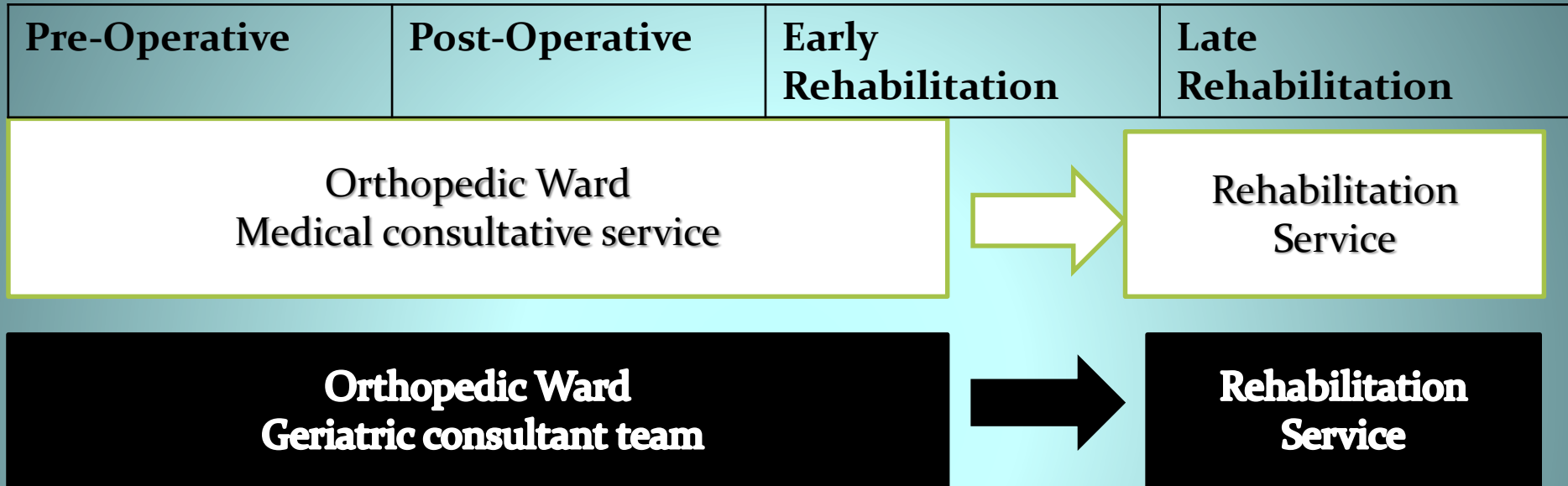
Objectifs

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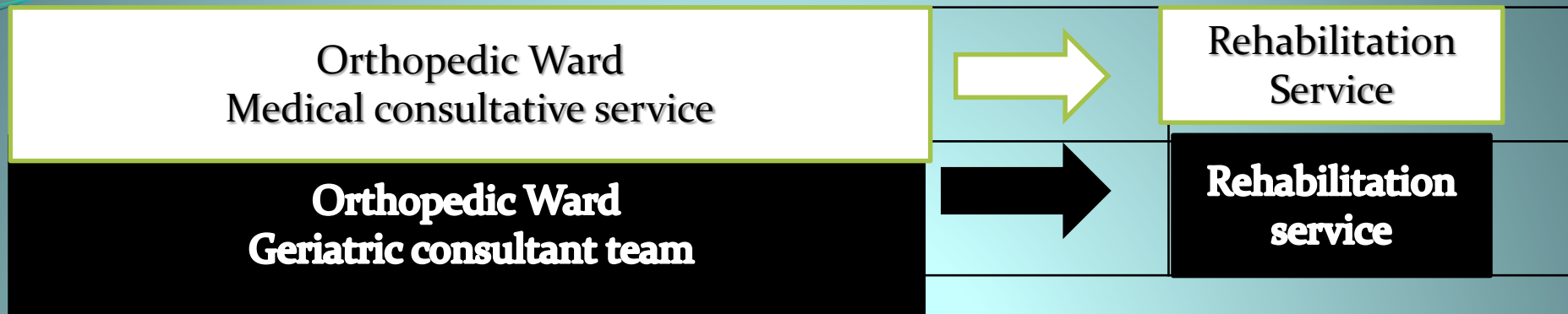
Different models of hip fracture care



Different models of hip fracture care



Different models of hip fracture care



Interdisciplinary inpatient care for elderly people with hip fracture : a randomized controlled trial

= twice-weekly interventions starting post-operatively

- RCT, Toronto, n = 279 patients (> 70)

- consultant team : internist-geriatrician, physiotherapist, occupational therapist, social worker, clinical nurse specialist, dietitian

Résultats :

**No significant differences in disability rates and placement
6 months after surgery**

Hip fracture care : all change

- September 2007 : New collaboration between
the British Orthopaedic Association (BOA)
and the British Geriatrics Association (BGS)

The Blue Book

= a clinical guide for the multi-disciplinary team
on best practice in the management of hip fracture



BGS

Editor: David Beaumont

newsletter

Issue 13
October 2007

ISSN 1744-3343



Our historic alliance



with the world of orthopaedics

The BGS has established an exciting new collaboration with the British Orthopaedic Association, with the shared aim of improving the clinical care of patients with fragility fractures and promoting effective secondary prevention to reduce future falls and fractures.

Sponsored by the BGS and BGS, it has also been endorsed by the Age Awareness Association, the National Osteoporosis Society, the Faculty of Public Health, the RCN, the Society for Gerontology, the Forum of the Royal College of Surgeons and the Specialist Surgical Associations of Great Britain and Ireland - a vital demonstration of multi-disciplinary commitment to improving hip fracture care. The Blue Book thus offers a foundation for the joint training and clinical governance activities that can build on the success of two BGS/BOA national joint "Transition of Care" forums and webinars held in 2006 and 2007, with a third now planned for 2008 (see the Business Fragility Forum's Course at www.nhs.uk/education/).

Central to the strategy are the two key initiatives, the Blue Book on the Care of Patients with Fragility Fractures and the National Hip Fracture Database, which were jointly launched with widespread TV, radio and press coverage on September 19th.

Blue Book

The second edition, totally rewritten and updated, replaces a 1st edition published several years ago and is now an authoritative evidence-based clinical practice guide for the multi-disciplinary team, and includes a set of six specific clinical practice standards. Geriatrician Christopher Johnson, Anthony Johnson and Colin Coates contributed greatly to the Blue Book's multi-disciplinary writing group, with Colin Coates as its editor. It can be downloaded as a pdf file from www.bgs.ac.uk/ or from

National Hip Fracture Database

(NHFD, www.nhfd.co.uk/) This joint BGS-BGS venture is entirely complementary to the Blue Book. It has involved the creation of an ongoing web-based database of key patient, process and outcome indicators to monitor and improve the clinical care of hip fracture patients by enabling units to measure the care they provide against the six standards set out in the Blue Book. It has been developed from several existing audits, including the Scottish Hip Fracture Audit, which has been established for several years and has now galvanised the Scottish government into writing explicit

President: Prof Peter Davies President Elect: Prof Graham Murray
Honorary Treasurer: Dr David Harrison Honorary Chair: Strategic Secretary: Dr Michael Young
Honorary Secretary: Dr Tracy O'Brien Honorary Editor: Chris Beattie Honorary Editor: Alan Miles Sub Editor: Nicola Miller

for better health in old age

The BGS has established an exciting new collaboration with the British Orthopaedic Association, with the shared aim of improving the clinical care of patients with fragility fractures and promoting effective secondary prevention to reduce future falls and fractures.

British Orthopaedic Association

PATRON: H.R.H. THE PRINCE OF WALES



THE CARE OF PATIENTS WITH FRAGILITY FRACTURE

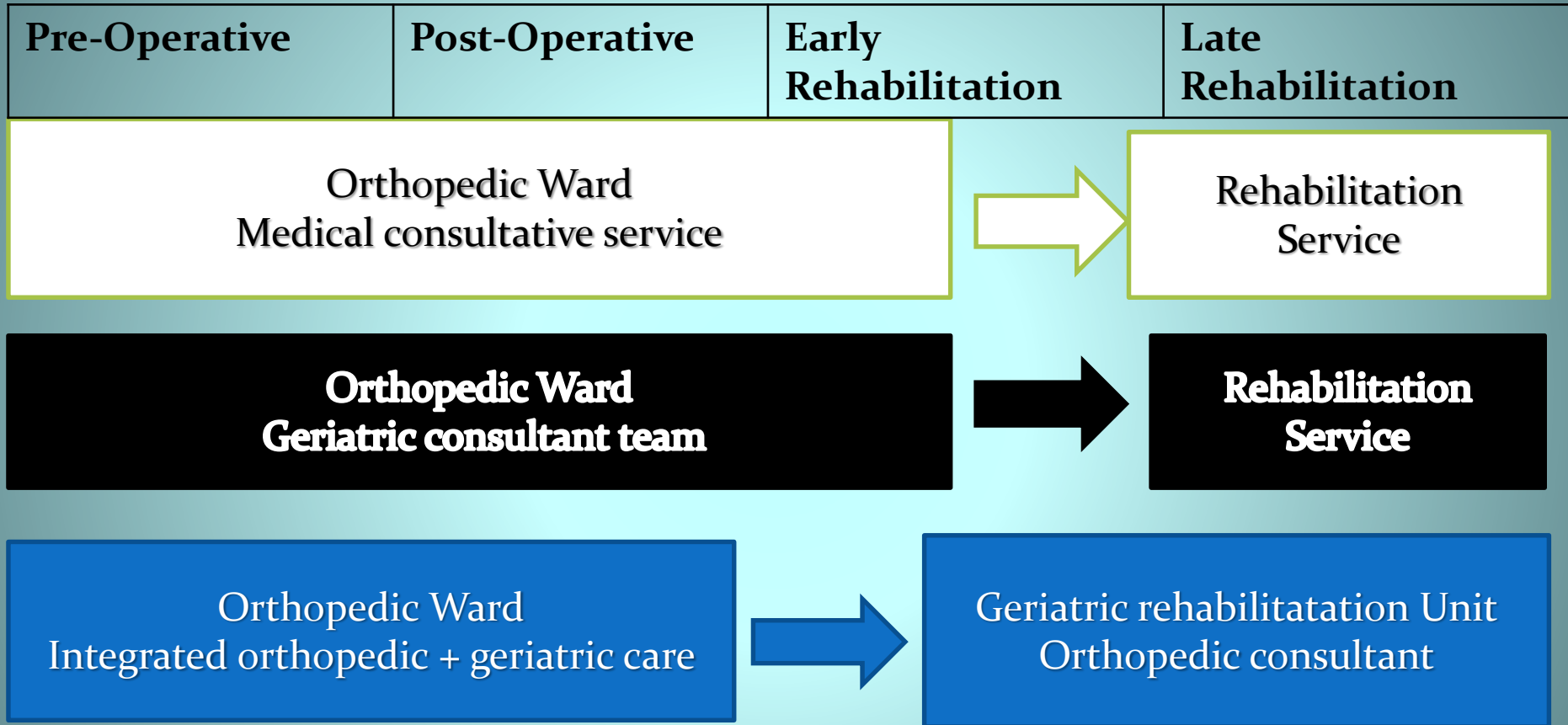
Published by the British Orthopaedic Association September 2007

BOA-BGS Blue Book :

six standards for hip fracture care

1. All patients with hip fracture should be **admitted** to an acute orthopaedic ward within **4 hours** of presentation
2. All patients with hip fracture who are medically fit should have **surgery within 48 hours** of admission, during normal working hours
3. All patients with hip fracture should be assessed and cared for with a view to minimising their risk of developing **a pressure ulcer**
4. All patients presenting with a fragility fracture should be managed on an orthopaedic ward with routine access to **orthogeriatric medical support from the time of admission**
5. All patients presenting with fragility fracture should be assessed to determine their need for **antiresorptive therapy** to prevent future osteoporotic fractures
6. All patients presenting with a fragility fracture following a fall should be offered multidisciplinary assessment and intervention to **prevent future falls**

Different models of hip fracture care



Efficacy of a Comprehensive Geriatric Intervention in Older Patients Hospitalized for Hip Fracture: A Randomized, Controlled Trial

- Spain, RCT, 319 patients (>65), follow-up: 12 months
- Daily multidisciplinary geriatric intervention vs usual care (standard orthopedic care)
 - *Intervention* : postoperative orthopedic and geriatric care; comprehensive geriatric assessment
 - *Team* : geriatrician, social worker, physiotherapist
 - *Geriatrician* : daily visit
 - *Initial assessment and multidisciplinary meeting* after 72h post-admission

Efficacy of a Comprehensive Geriatric Intervention in Older Patients Hospitalized for Hip Fracture: A Randomized, Controlled Trial

Table 2. In-Hospital Outcomes

Outcome	Intervention Group n = 155	Usual-Care Group n = 164	P-value
Length of stay, days, median (25th–75th percentile)*	16 (13–19)	18 (13–24)	.06
In-hospital mortality, n (%)	1 (0.6)	9 (5.5)	.03
Major medical complications, n (%)	70 (45.2)	100 (61.7)	.003
Confusion	53 (34.2)	67 (44.1)	.07
Pressure sores	8 (5.2)	27 (16.9)	.001
Heart failure	12 (7.7)	5 (3.1)	.07
Pneumonia	6 (3.9)	6 (3.7)	.95
Deep venous thrombosis/pulmonary embolism	0	0	—
Myocardial infarction	0	1 (6)	.32
Arrhythmia	3 (1.9)	2 (1.3)	.65

Impact of a comanaged Geriatric Fracture Center on short-term hip fracture outcomes

- Rochester, Retrospective Cohort, compared:
 - **Group GFC (Geriatric Fracture Center)**
 - Daily comanagement by orthopedic surgeons and geriatrician
 - Standardized protocols of care and treatment
 - **Group UC (Usual Care)**
 - standard orthopedic care (same department, similar population)

Impact of a comanaged Geriatric Fracture Center on short-term hip fracture outcomes

Table 2. Outcomes in the Geriatric Fracture Center (GFC) and Usual Care

Outcome	Unadjusted			Adjusted ^a	
	GFC (n=193)	Usual Care (n=121)	P Value	Coefficient ^b (95% Confidence Interval)	P Value
Time to surgery, mean (SD), h	24.1 (17.0)	37.4 (63.8)	.007	-12.93 (-2.19 to -23.68)	.02
Restraint use, %	0	14.1	<.001		
Length of stay, mean (SD), d	4.6 (3.3)	8.3 (6.3)	<.001	-3.74 (-2.56 to -4.91)	<.001
In-hospital mortality, %	1.6	2.5	.68	0.17 (0.02 to 1.14)	.07
30-d Readmission rate, %	9.8	13.2	.35	0.52 (0.23 to 1.18)	.12
Complications overall, %	30.6	46.3	.005	0.26 (0.14 to 0.47)	<.001
Delirium, %	24.4	32.2	.13	0.27 (0.13 to 0.53)	<.001
Postoperative infection, % ^d	2.3	19.8	<.01	0.04 (0.01 to 0.13)	<.001

Unit for Post-operative Geriatric Care (UPOG)

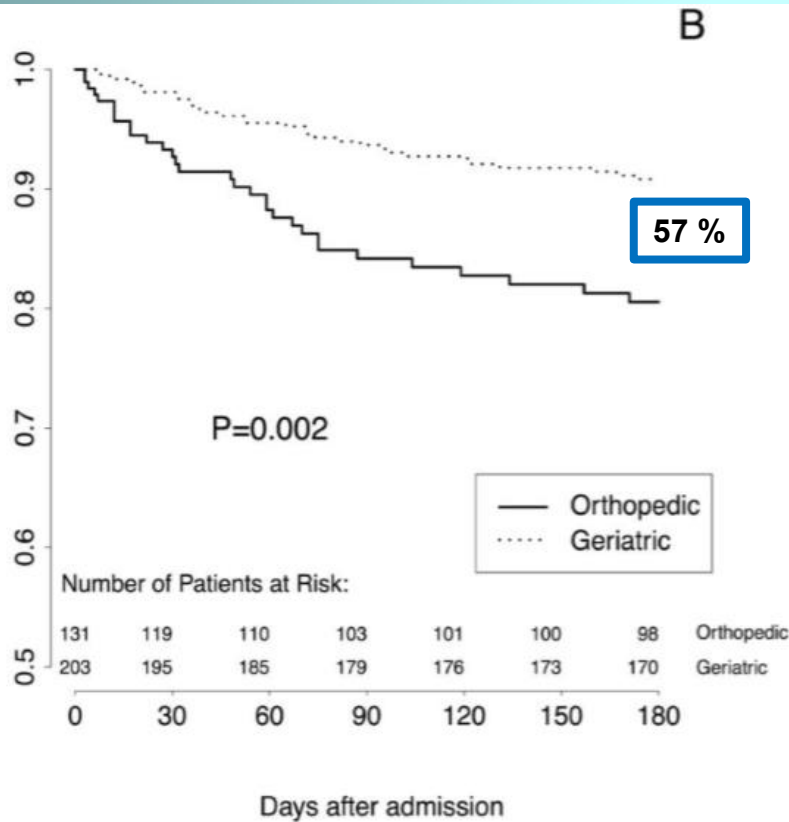
- **Cohort study:**
 - Endpoints: Mortality (I), Rehospitalization (II) - 6 month
- **Key factors:**
 - Early alert from the ED
 - Consideration of hip fracture as an emergency case requiring emergency surgery as soon as feasible (i.e. 24 h)
 - Rapid transfer to the UPOG after surgery (<48h)
 - Rapid transfer of stable patients to a dedicated rehabilitation unit.

Unit for Post-operative Geriatric Care (UPOG)

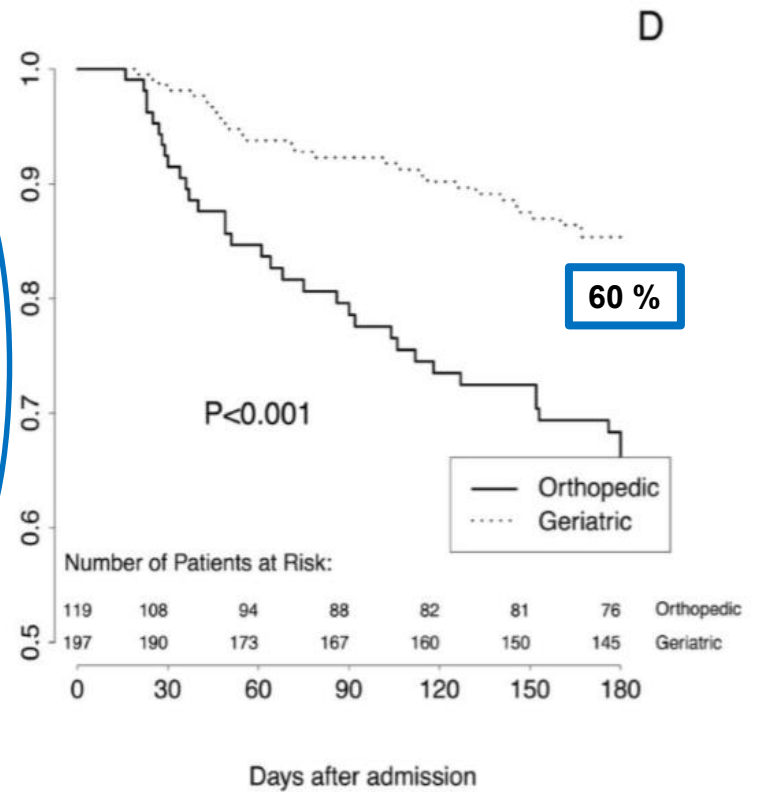
	Orthopedic cohort (N = 131)	Geriatric cohort (N=203)	P value
First walking (day)	5 (3-9)	2 (1-4)	<0,001
Physical restraint	18 (15 %)	1 (0.8%)	<0,001
Pressure ulcer	40 (33%)	18 (9%)	<0,001
Length of stay	13	11	<0.001
Admission to ICU	17 (13%)	8 (4%)	<0.005

Unit for Post-operative Geriatric Care (UPOG)

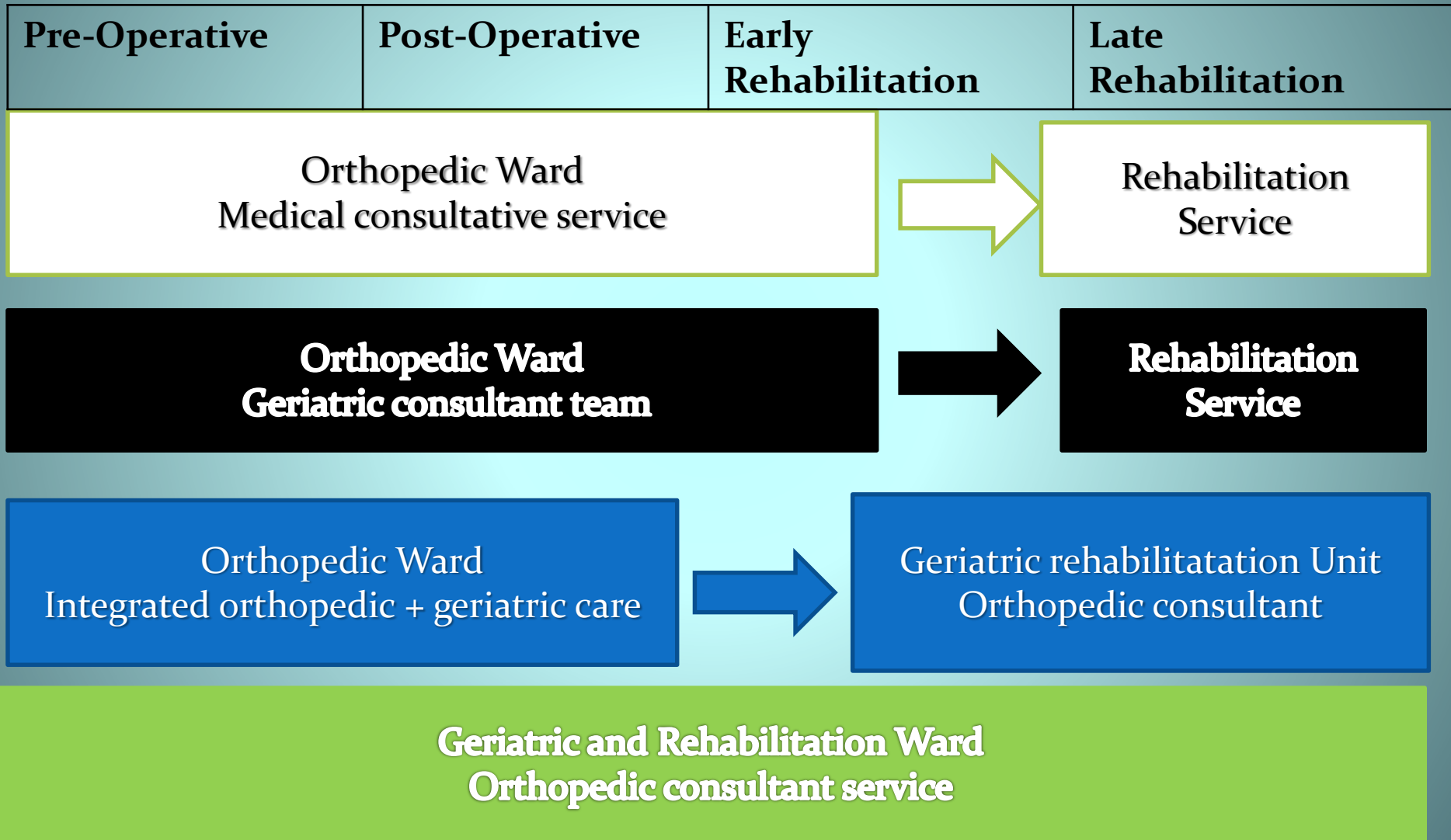
Survival



No need for rehospitalization



Different models of hip fracture care



Different models of hip fracture care

Orthopedic Ward
Medical consultative service



Rehabilitation service

Geriatric and Rehabilitation Ward
Orthopedic consultant service

-Assess the effectiveness of comprehensive geriatric care (Fracture assessment and surgical treatment by orthopaedic surgeons) versus orthopaedic care

All pre-operative, post-operative care and rehabilitation took place in one setting

Primary outcomes

- Mobility (measured by SPPB) at 4 months after surgery




Methods :

-Prospective Norway RCT, single center, 397 (home-dwelling patients with hip-fractures, aged 70 years or older, able to walk 10 m before fracture) randomly assigned

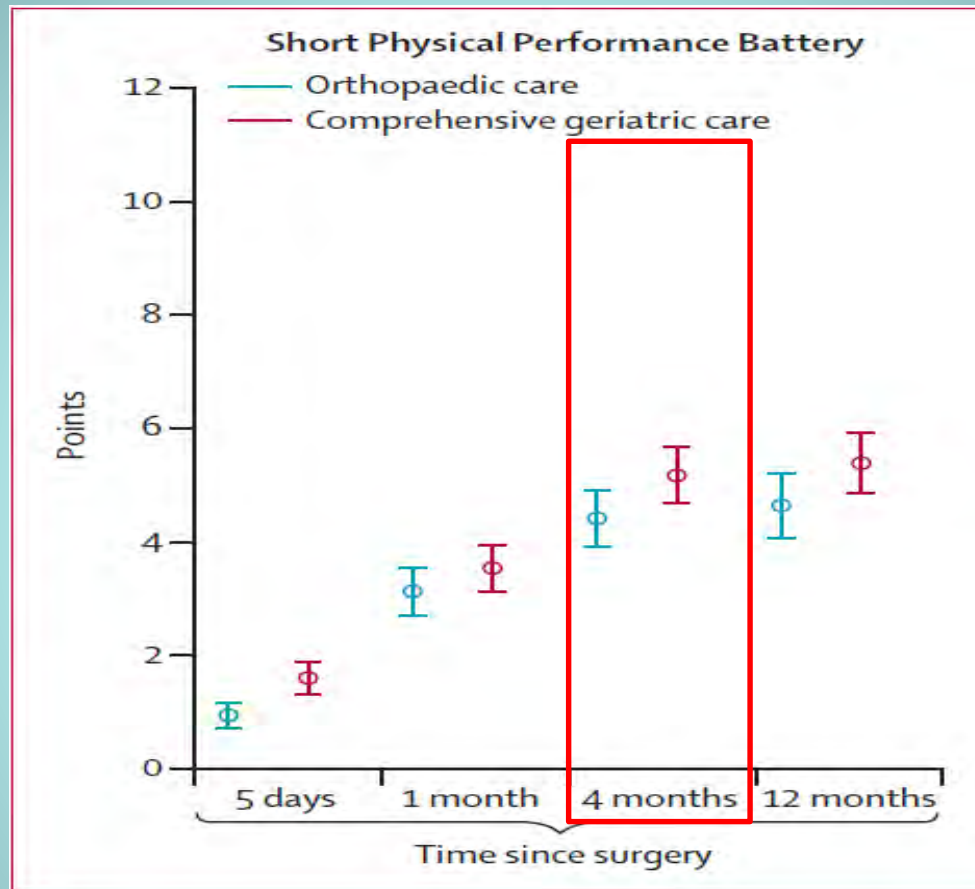
- Comprehensive geriatric care
- Orthopaedic care

Outcome primary: Mobility (measured by SPPB) at 4 months after surgery



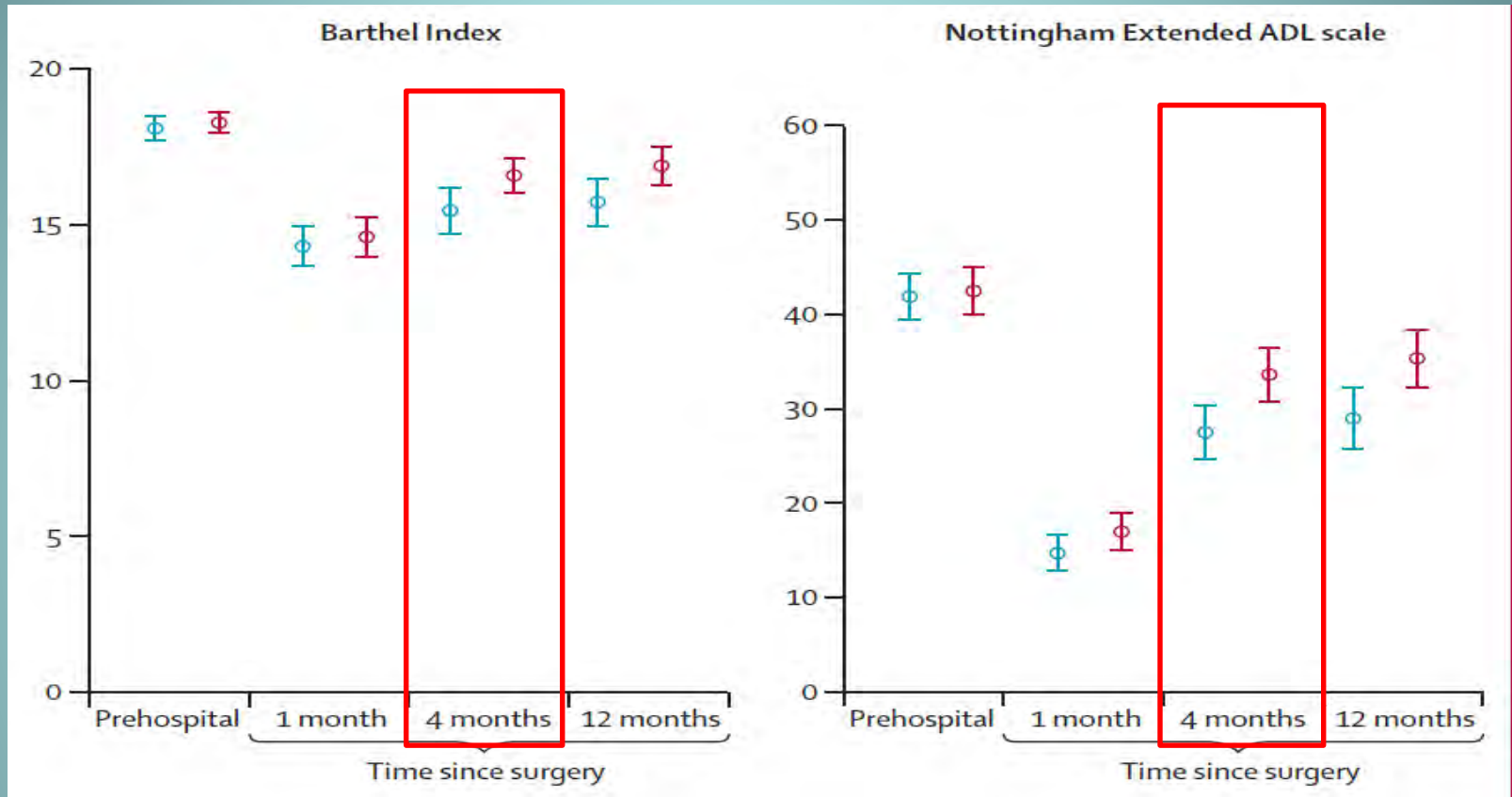
Short Physical Performance	Sit to Stand (5 x) Temps (seconde)	Vitesse de marche / 4m départ arrêté	Test d'équilibre			Short physical performance score (SPPS)
			Pieds joints 	Semi tandem 	Tandem 	
Date :						
	> 60 sec ou incapable 0 pt > 16.7 sec 1 pt 16.69-13.7 sec 2 pts 13.69-11.20 sec 3 pts ≤ 11.19 sec 4 pts	Incapable 0 pt > 8.7 sec 1 pt 6.21-8.7 sec 2 pts 4.82-6.2 sec 3 pts < 4.82 sec 4 pts	Côte à côte < 10 sec 0 pt Semi tandem < 10 sec 1 pt Tandem < 3 sec 2 pts Tandem 3-9.99 sec 3 pts Tandem 10 sec 4 pts	0-6 7-9 10-12	Performance faible Intermédiaire haute	

Comprehensive geriatric care for patients with hip fractures: a prospective randomized, controlled Trial



	Comprehensive geriatric care	Orthopaedic care	Difference	
			Estimate (95% CI)	p value
4 months	174	170		
Mobility				
Short Physical Performance Battery	165	160	5-12 (0-20)	4-38 (0-20)
			0-74 (0-18 to 1-30)	0-010

Comprehensive geriatric care for patients with hip fractures: a prospective randomized, controlled Trial



		Comprehensive geriatric care	Orthopaedic care	Difference	
				Estimate (95% CI)	p value
4 months	174	170			
Activities of daily living					
Barthel index	168	16.31 (0.29)	165	15.30 (0.29)	1.01 (0.21 to 1.81) 0.013
Nottingham Extended ADL Scale	168	33.59 (1.29)	164	27.42 (1.31)	6.17 (2.57 to 9.78) 0.001

Comprehensive geriatric care for patients with hip fractures: a prospective randomized, controlled Trial

	Comprehensive geriatric care		Orthopaedic care		Difference	
	N	Mean (SE)	N	Mean (SE)	Estimate (95% CI)	p value
(Continued from previous page)						
12 months	162		149			
Mobility						
Short Physical Performance Battery	151	5.30 (0.21)	133	4.61 (0.22)	0.69 (0.10 to 1.28)	0.023
Activities of daily living						
Barthel Index	158	16.46 (0.29)	142	15.33 (0.30)	1.13 (0.31 to 1.96)	0.007
Nottingham Extended ADL Scale	158	35.20 (1.33)	142	28.81 (1.41)	6.39 (2.59 to 10.19)	0.001
Fear of falling						
Falls Efficacy Scale International—short form	149	10.81 (0.36)	119	12.03 (0.39)	-1.21 (-2.24 to -0.18)	0.021

Comprehensive geriatric care for patients with hip fractures: a prospective randomized, controlled Trial

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Comprehensive geriatric care for patients with hip fractures: a prospective randomized, controlled Trial

	Comprehensive geriatric care (n=198)	Orthopaedic care (n=198)	Difference	
	Mean (SD)	Mean (SD)	Estimate (95% CI)	p value
Index stay	11 868 (4185)	9537 (4393)	2331 (1483 to 3178)	<0.0001
Hospital costs after discharge	7745 (15 006)	11 022 (20 119)	-3277 (-6784 to 230)	0.07
Rehabilitation stay	8 105 (9076)	9633 (11 125)	-1529 (-3535 to 477)	0.14
Nursing home stay	14 874 (30 153)	18 798 (32 959)	-3923 (-10 164 to 2318)	0.22
Other primary health and care services	11 741 (15 128)	10 496 (14 498)	1246 (-1683 to 4173)	0.40
Total cost	54 332 (38 048)	59 486 (44 301)	-5154 (-13 311 to 3007)	0.22

Costs are in euros for 2010.

Table 5: Cost per patient

Objectifs

- Epidémiologie
- Modèles de prise en charge
- **Facteurs d'intervention dans la filière**
- Unité d'ortho-gériatrie de l'hôpital du Valais

Reasons for orthogeriatric comanagement

- **Old age:** high prevalence of *comorbidity*. Fracture is **only one** of the patient's **problems** and sometime **not even the worst**
- **44 % have more than 6 comorbidities**
- **Patients with ≥ 3 chronic medical conditions have 2.5-fold risk of death**

Common comorbidities among hip fracture patients

- Chronic lung disease
- Congestive heart failure
- Diabetes
- Dementia
- Peripheral vascular disease
- Osteoporosis

Friedman S. Clin Geriatr Med 2014

Comprehensive geriatric assessment for older people admitted to a surgical service (Review)

Comprehensive geriatric assessment for older people admitted to a surgical service

Patient or population: Improving outcomes in older adult people admitted to a surgical service.

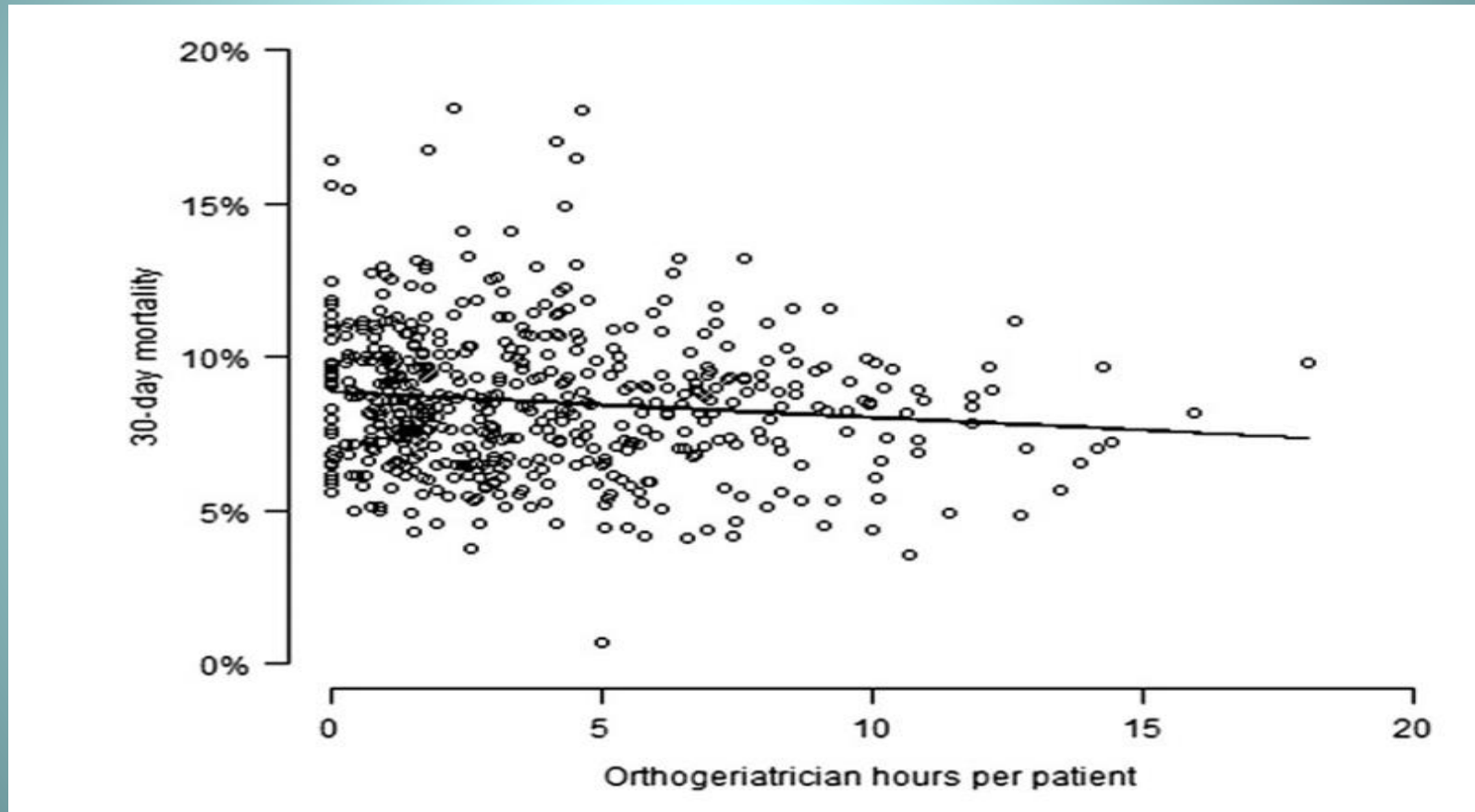
Setting: Acute hospital or rehabilitation hospital following acute admission; Canada, Netherlands, Norway, UK, USA, Spain, and Sweden.

Intervention: Comprehensive geriatric assessment.

Comparison: Control.

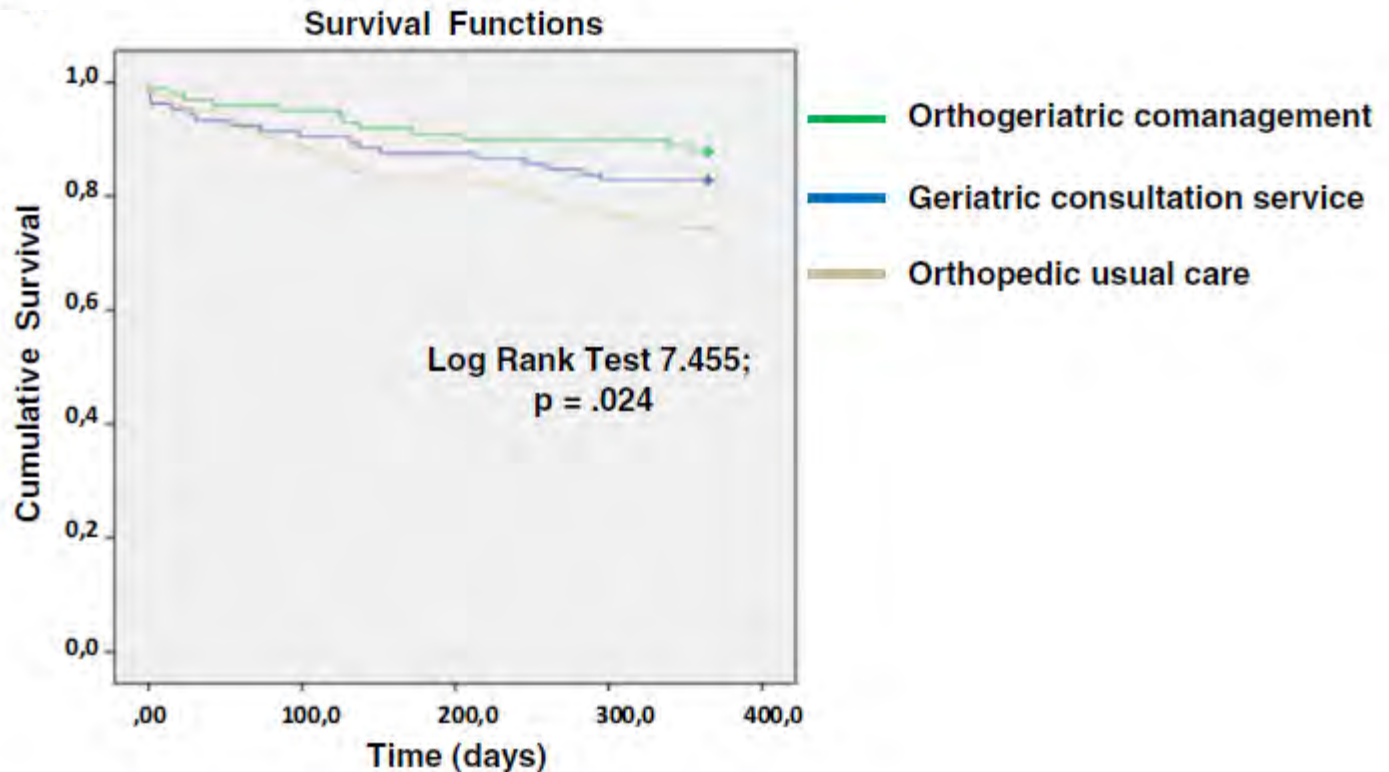
Outcomes	Anticipated absolute effects* (95% CI)		Relative effect (95% CI)	N° of participants (studies)	Certainty of the evidence (GRADE)	Comments
	Risk with control	Risk with geriatric care				
Mortality	214 per 1000	182 per 1000 (145 to 225)	RR 0.85 (0.68 to 1.05)	1316 (5 randomised trials)	⊕⊕⊕○ ¹ MODERATE	Hip fracture studies.
Discharge to an increased level of care	247 per 1000	176 per 1000 (136 to 227)	RR 0.71 (0.55 to 0.92)	941 (5 randomised trials)	⊕⊕⊕⊕ HIGH	Hip fracture studies.

Increased orthogeriatrician involvement in hip fracture care and its impact on mortality in England



The orthogeriatric comanagement improves clinical outcomes of hip fracture in older adults

Fig. 1 Cumulated survival as calculated by Kaplan-Meier curves over 1 year following hip fracture treatment



The orthogeriatric comanagement improves clinical outcomes of hip fracture in older adults

Table 3 Multivariate analysis of the association between models of care and the length of stay, time to surgery < 48 h, and 1-year mortality

Variable	Time to surgery < 48 h		Length of stay day		Mortality 1 year	
	OR (CI 95%)	<i>p</i>	$\beta \pm SE$	<i>p</i>	OR (CI 95%)	<i>p</i>
Models of care						
- Orthogeriatric Comanagement	2.62 (1.40–4.91)	0.003	-1.08 ± 0.54	0.045	0.31 (0.10–0.96)	0.041
- Geriatric consultation service	0.74 (0.38–1.47)	0.395	-0.79 ± 0.53	0.148	0.37 (0.10–1.38)	0.138
- Orthopedic usual care	REF		REF		REF	
Age	0.98 (0.94–1.01)	0.185	0.04 ± 0.03	0.210	1.10 (1.02–1.19)	0.010
Women	1.49 (0.80–2.75)	0.207	-1.07 ± 0.48	0.026	0.17 (0.07–0.42)	< 0.001
Coexisting diseases	0.91 (0.76–1.08)	0.271	0.14 ± 0.13	0.301	1.15 (0.88–1.49)	0.308

Independent of other confounders including type of fracture, dementia, depression, drugs, including anticoagulant and antiplatelets at admission, ASA score, day of week at admission, in-hospital complications, consultations, RBC transfusions, and urinary catheter at discharge

Association between wait time and 30-day mortality

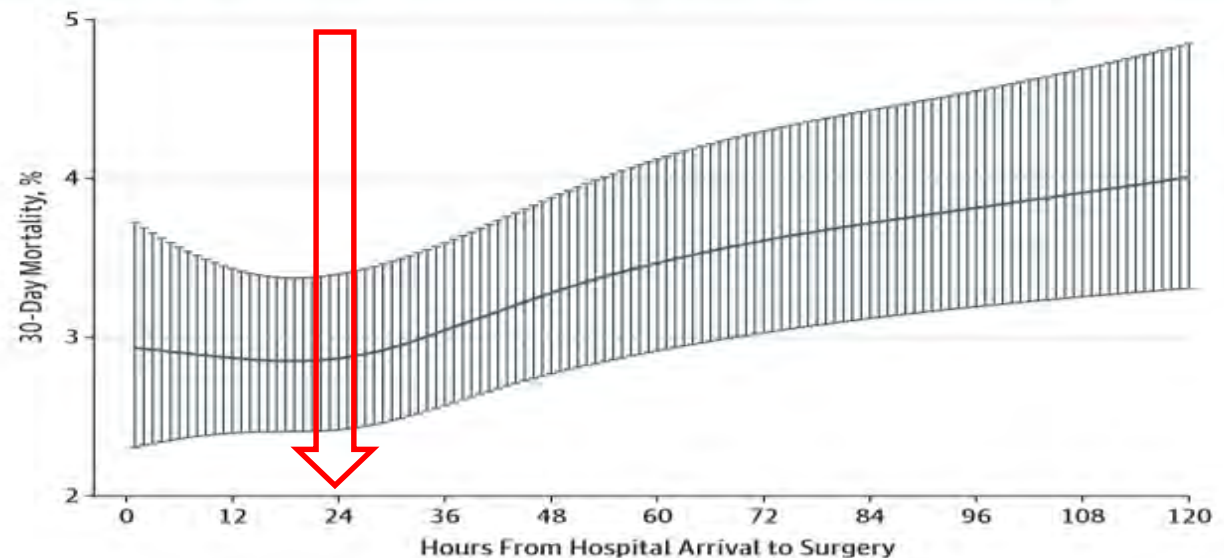
Key Points

Question What is the association between wait time and 30-day mortality in patients undergoing hip fracture surgery?

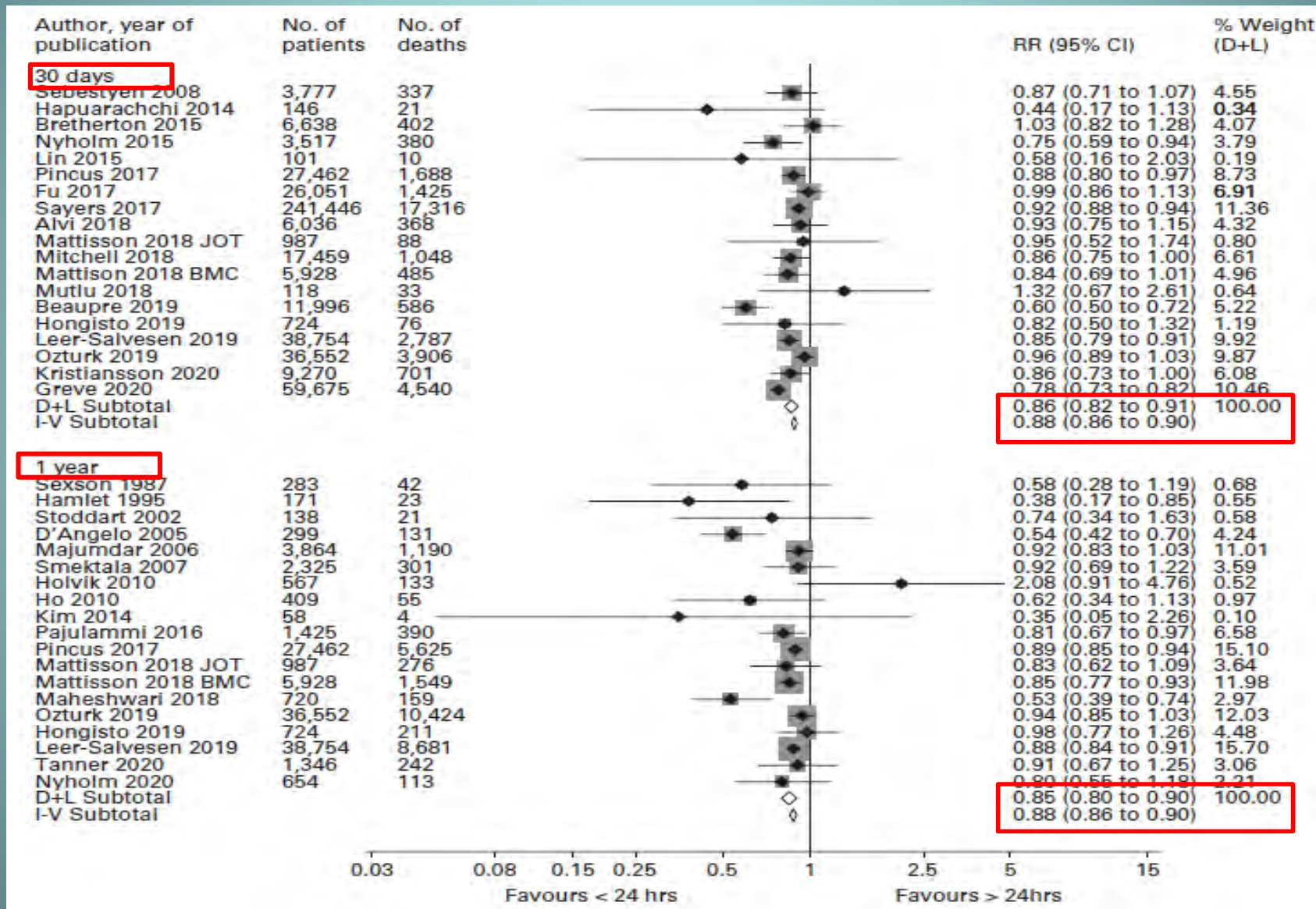
Findings In this retrospective cohort study that included 42 230 adults, wait time longer than 24 hours was associated with higher risk-adjusted likelihood of 30-day mortality (6.5% vs 5.8%).

Meaning A wait time of 24 hours may represent a threshold of increased risk for delaying hip fracture surgery.

Figure 1. Probability of the Primary Outcome According to Wait Times for Surgery as a Continuous Variable



Risk of mortality at 30 days and one year for time of surgery < 24h versus >24 hours



Accelerated surgery versus standard care in hip fracture (HIP ATTACK): an international, randomised, controlled trial

	Accelerated-surgery group (n=1487)	Standard-care group (n=1483)	Hazard ratio (95% CI)	p value
Primary outcomes				
Death	140 (9%)	154 (10%)	0.91 (0.72 to 1.14)	0.40
Composite of major complications*	321 (22%)	331 (22%)	0.97 (0.83 to 1.13)	0.71

*Death and non-fatal myocardial infarction, stroke, venous thromboembolism, sepsis, pneumonia, life-threatening bleeding, and major bleeding. †Venous thromboembolism is a composite of pulmonary embolism and proximal deep venous thrombosis. ‡Odds ratio.

Accelerated surgery versus standard care in hip fracture (HIP ATTACK): an international, randomised, controlled trial







- **With Accelerated surgery: reduction in**
 - **delirium** (OR 0.72 [0.58–0.92])
 - **urinary tract infection** (HR 0.78 [0.61–0.99])
 - **faster mobilisation**, moderate-to-severe pain on days 4–7 after randomization
 - **a shorter length of hospital stay**: 10 vs 11 days (95% CI 1–2; $p < 0.0001$)

«Acceptable» reasons for delaying surgery

- 1** Haemoglobin $< 80 \text{ g.l}^{-1}$
- 2** Plasma sodium concentration < 120 or $> 150 \text{ mmol.l}^{-1}$ and potassium concentration < 2.8 or $> 6.0 \text{ mmol}^{-1}$
- 3** Uncontrolled diabetes
- 4** Uncontrolled or acute onset left ventricular failure.
- 5** Correctable cardiac arrhythmia with a ventricular rate $> 120.\text{min}^{-1}$
- 6** Chest infection with sepsis
- 7** Reversible coagulopathy

BOA-BGS Blue Book :

six standards for hip fracture care

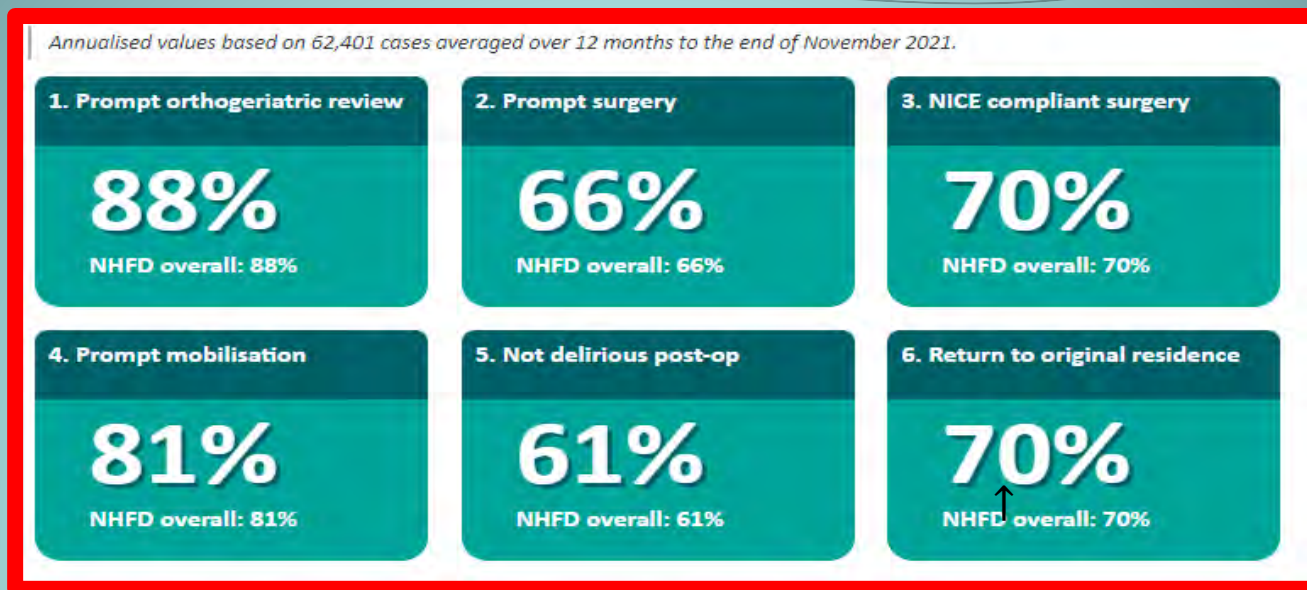
<p>Standard 1: All patients with hip fracture should be admitted to an acute orthopaedic ward within four hours of presentation or brought directly to the theatre from the emergency department (ED) within four hours.</p>	
<p>Standard 2: All patients with hip fracture who are medically fit should have surgery within 48 hours of admission, and during normal working hours (Monday to Sunday, 08.00–17.59).</p>	
<p>Standard 3: All patients with hip fracture should be assessed and cared for with a view to minimising their risk of developing a pressure ulcer.</p>	
<p>Standard 4: All patients presenting with a fragility fracture should be managed on an orthopaedic ward, with routine access to acute orthogeriatric medical support from the time of admission.</p>	
<p>Standard 5: All patients presenting with a fragility fracture should be assessed to determine their need for therapy to prevent future osteoporotic fractures.</p>	
<p>Standard 6: All patients presenting with a fragility fracture following a fall should be offered multidisciplinary assessment and intervention to prevent future falls.</p>	

The best practice tariff (BPT)

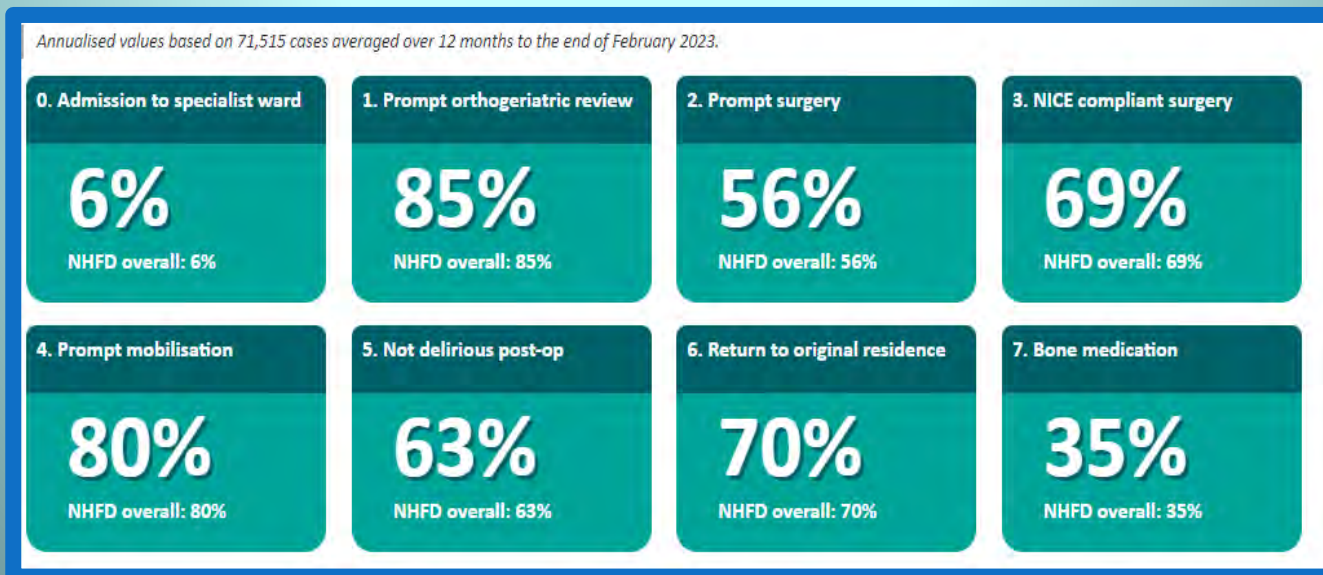
- **Surgery within 36 h of admission**
- **Orthogeriatrician review within 72 h of admission**
- **Evidence of multidisciplinary care in the acute phase (geriatric, orthopaedic and anaesthesia)**
- **Secondary fracture prevention (assessment of falls and bone health)**

National Hip Fracture Database annual report

2021



2022



Change across 2 years of the COVID-19 pandemic

KPI	Before COVID-19 <i>data for 2019</i>	Since COVID-19 <i>data for 2021</i>		
1	Will I see both a surgeon and a medical specialist after breaking my hip?	91%	88%	Prompt assessment was affected in the first wave, with isolation, illness and redeployment of orthogeriatricians to COVID-19 work, but hospitals rapidly re-established orthogeriatric support, reducing the impact of subsequent waves so that KPI 1 remained at nearly 90% when averaged over the whole of the two years.
2	Will my operation be done today or tomorrow?	68%	66%	Non-operative management increased only transiently at the start of the first wave. KPI 2 was unaffected over 2020, but there was an abrupt change (from 74% to 63%) between March and April 2021, perhaps reflecting the impact of increased attention to elective orthopaedic services around this time.
3	Will my surgeon offer the operation recommended by NICE?	74%	71%	The first wave led to a small reduction in the number of people receiving total hip replacement, compounding an existing trend in response to recent trial data, but 2021 saw a slight increase in THR use. The rate of intramedullary nails for A1/A2 trochanteric fracture increased slightly across both years.
4	Will I be able to get out of bed by the day after my operation?	81%	81%	The start of COVID-19 led to a huge collaborative effort by hospital teams, families, carers and others so that length of stay fell at the height of the first wave. The focus on a prompt start to rehabilitation has been maintained, and KPI 4 continued to be unaffected by later waves; remaining at 81% across the whole of these two years.
5	Will you check that I do not become confused?	58%	62%	This KPI was made more rigorous in January 2020; requiring 4AT within 72 hours of surgery. Disruption during the first and second waves was an additional challenge but 4AT screening improved over 2021, so that across the two years we can report a 4% increase in how many patients were known not to have developed delirium.
6	Will you check that I get back to live in my usual home?	71%	70%	Patients view returning home as a priority. Collaborative working means that despite the pressures on hospital teams, community services and care homes through the course of 2020, hip fracture teams continued to record that 70% of people still achieved this in 2021.

Objectifs

- Epidémiologie
- Modèles de prise en charge
- Facteurs d'intervention dans la filière
- **Unité d'ortho-gériatrie de l'hôpital du Valais**

British Orthopaedic Association

PATRON: H.R.H. THE PRINCE OF WALES



THE CARE OF PATIENTS WITH FRAGILITY FRACTURE

Published by the British Orthopaedic Association September 2007

British Orthopaedic Association

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FRAGILITY FRACTURE

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Swiss Orthopaedic Association



THE CARE OF PATIENTS WITH
FRAGILITY FRACTURE

Swiss Orthopaedic and Geriatrician Associations

**Die proximale Femurfraktur. Muss ein Geriater hinzugezogen werden?
HauptThema II. 74. Jahreskongress Swiss Orthopaedics, St-Gallen, 2014**

Unité d'ortho-gériatrie du CHVR: principes de prise en charge

Unité d'orthopédie
Soins coordonnés gériatriques et
orthopédiques
1.1.2018-31.8.2021



Unité de réhabilitation Gér
Consultant d'orthopédie

- Considérer la fracture de hanche comme une urgence chirurgicale (chirurgie dans les 48h !)
- Programmation du transfert du patient vers une l'unité de réhabilitation gériatrique dès admission
- Mis en place de protocoles de soins standardisés:
 - mobilisation précoce (J1 post chirurgie) et libération des attaches (SU, cath veineux, tubulures à O₂)
 - prévention et prise en charge du delirium, réafférentation cognitive
 - prévention et prise en charge systématique de la douleur
 - dépistage et traitement de la malnutrition
 - analyse du traitement médicamenteux



Unité d'ortho-gériatrie du CHVR: principes de prise en charge

Geriatric and Rehabilitation Ward Orthopedic consultant service Dès le 1.09.2021

- Considérer la fracture de hanche comme une urgence chirurgicale (chirurgie dans les 48h !)
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 - prévention et prise en charge systématique de la douleur
 - dépistage et traitement de la malnutrition
 - analyse du traitement médicamenteux



Facteurs clés de la phase post-opératoire

Objectifs	Interventions
Traitement antalgique systématique	-association <u>paracétamol</u> -opiacés (<u>oxycodone</u>), avec prise de laxatif systématique
Mobilité	-physiothérapie précoce : assis sur une chaise 3h après l'intervention -mobilisation en charge précoce au J1 -enlever au plus vite les attaches : sonde vésicale à 48h, <u>venflons</u> , tubulures à O ₂
Oxygénothérapie	-saturation en O ₂ de 94 à 96 %
Correction de l'anémie	-seuil transfusionnel à 8 g Hb/dL
Balance hydrique-troubles électrolytiques	-maintien <u>TAHsyst</u> > 90 <u>mmHg</u> -rechercher une hypotension orthostatique -traiter la déshydratation ou la surcharge liquidienne -traiter l'hyponatrémie, l'hypokaliémie, -cave hyperglycémie (>16mmol/l) chez le diabétique
Revue systématique de la médication	-éviter ou stopper : hypnotique, antihistaminique, anticholinergique, benzodiazépine -rechercher les interactions sur les cytochromes -adapter la médication à la fonction rénale

Facteurs clés de la phase post-opératoire

Objectifs	Interventions
Régularisation du transit intestinal et urinaire	<ul style="list-style-type: none">-sonde vésicale : à mettre en place seulement si globe urinaire post-op, ablation au J2 post-op-soins cutanés appropriés si incontinence-lutte contre la constipation
Nutrition	<ul style="list-style-type: none">-positionnement adéquat lors des repas-prothèses dentaires-texture adaptée-assistance extérieure au besoins-supplément protéinique systématique (20 g/j)
Prévention des escarres	<ul style="list-style-type: none">-matelas à pression alternative chez le sujet à risque (cf échelle de Braden)
Stimulus environnemental approprié	<ul style="list-style-type: none">-lunettes et prothèses auditives-horloge et calendrier mural-objets personnels-réorientation fréquente si nécessaire

Implementing an Orthogeriatric Unit: A four year Overview

Lekonya Salah Josepha¹, Jaques Arnaud¹, Rossier Loïc², Bonvin Lynn², Bonvin René², Martial Coutaz

Methods: The purpose of this retrospective study is to highlight the results of a 4-year follow up (from 1 January 2018 to 31 December 2021) in a newly dedicated Orthogeriatric Unit. Standardized geriatric protocols were implemented as we worked with the Orthopedic Unit in the treatment of 517 patients.

Patients characteristics

Variables	Overall, N=517 ¹	Alived at 6 weeks, N=484 ¹	Died at 6 weeks, N=33 ¹	p-value ²
Age	84 (7)	84 (7)	86 (8)	0.041*
Cognitive impairment	233 (45%)	213 (44%)	20 (61%)	0.064
Malnutrition :				0.015*
-0	87 (17%)	85 (18%)	2 (6.1%)	
-NRS 3	129 (25%)	126 (26%)	2 (9.1%)	
-NRS 4	160 (31%)	146 (30%)	14 (42%)	
-NRS 5	141 (27%)	127 (26%)	14 (42%)	
Time to surgery	33 (32)	33 (31)	34 (32)	0.8
-0h-24h	264 (51%)	247 (51%)	17 (52%)	
-24h-36h	84 (16%)	76 (16%)	8 (24%)	
-36h-48h	68 (13%)	66 (14%)	2 (6.1%)	
->48h	101 (20%)	95 (20%)	6 (18%)	

¹ n (%); Mean(SD)
² p<0.05; **p<0.01; ***p<0.001
³ ICU:intensive care unit ; PE : pulmonary embolism ; ARF: Acute Renal Failure

Results: The average time to surgery was 33.06 hours with a 6-week mortality rate of 6.4%.

Mortality rate was not linked to the time of surgical intervention and was 60 % less in female patients (OR= 0.40, p=0.013). Conversely, given at least one complication, the risk of mortality was multiplied by 3.81(p= 0.002), severe malnutrition by 4.99 (p=0.045) and being considered very complex by 6.65 (p= 0.016).

Multivariates analysis

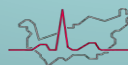
Multivariate analysis	OR ¹	95% CI ¹	p-value ²
Sex	0.34	0.15, 0.80	0.011*
Age	1.02	0.96, 1.09	0.5
Cognitive impairment	1.47	0.61, 3.67	0.4
Health status :			
-complex	2.71	0.68, 18.2	0.2
-very complex	3.01	0.60, 22.7	0.2
Malnutrition :			
-NRS 3	1.41	0.21, 11.5	0.7
-NRS 4	4.92	1.24, 33.2	0.046*
-NRS 5	5.77	1.43, 39.3	0.030*
Time to surgery :			
-24h-36h	1.34	0.49, 3.40	0.5
-36h-48h	0.38	0.06, 1.49	0.2
->48h	0.75	0.24, 2.05	0.6
Complications :			
-ICU	1.42	0.20, 6.40	0.7
-Delirium	1.30	0.52, 3.02	0.6
-Heart failure	3.39	1.26, 8.72	0.012*
-Infection	1.55	0.58, 3.79	0.4
-Acute renal failure	2.50	1.01, 5.87	0.039*
-Orthopedic	5.25	0.75, 27.6	0.066

¹ OR = Odds Ratio, CI = confidence interval
² p<0.05; **p<0.01; ***p<0.001

In a multivariate analysis (which included gender, time of surgical intervention, malnutrition, dementia, various health categories and complications), the occurrence of at least one complication resulted in a mortality risk increase of 3.2 (p= 0.010), an increase in moderate malnutrition of 4.92 (p=0.046) and severe malnutrition of 5.77 (p=0.030).

Conclusions:

Mortality rate reduction can be achieved in geriatric patients with hip fractures by preventing renal and cardiac complications and improving management and treatment of undernourishment.



Implementing an Orthogeriatric Unit: A four year Overview

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BEST POSTER

P-483 Implementing an orthogeriatric Unit: a four year Overview

Coutaz Martial - Switzerland

Lekyona Salah Josepha, Jaques Arnaud, Rossier Loïc, Bonvin Lynn, Bonvin René, Coutaz Martial

Service de gériatrie, Hôpital du Valais, Controlling, reporting, statistiques, Hôpital du Valais, service de gériatrie, Hôpital du Valais

Antonio Cherubini, EuGMS Academic Director

improving management and treatment of undernourishment.

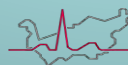
Multivariate analysis

Sex
Age
Cognitive impairment
Health status
-complex
-very complex
Malnutrition
-NRS 3
-NRS 4
-NRS 5
Time to surgery
-24h-36h
-36h-48h
->48h
Complications
-ICU
-Delirium
-Heart failure
-Infection

	1.55	0.58, 3.79	0.4
-Acute renal failure	2.50	1.01, 5.87	0.039*
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¹ OR = Odds Ratio, CI = confidence interval

² p<0.05; **p<0.01; ***p<0.001



Hôpital du Valais
Spital Wallis

Bilan 5 ans après la création d'une unité d'orthogériatrie

- **Objectifs** : évaluation de l'impact des mesures mises en place (filiale OG, suivi gériatrique, standardisation des protocoles) sur le délai opératoire, le taux de complications postopératoires et la mortalité après 6 semaines
- **Etude rétrospective**: data base locale établie dès le 1^{er} janvier 2018. Tous les patients avec une FPF admis dans l'unité d'OG du 1^{er} janvier 2018 au 31 décembre 2022 ont été inclus.
- **Critères d'inclusion** : patients âgés de 70 ans ou plus, avec une FPF et opérés dans les 96 heures.
- **Critères d'exclusion**: fractures pathologiques ou fractures nécessitant un traitement conservateur, délai opératoire supérieur à 96 heures.

Patient's Characteristics	Total population	Deceased by 6-weeks follow-up		P value*
		NO	YES	
	(N=607) (100.0%)	(N=566) (93.25%)	(N=41) (6.75%)	
Age, mean [\pm SD]	84[\pm 7]	84[\pm 7]	87[\pm 8]	0.014*
Women, n (%)	472 (78)	448 (79)	24 (59)	0.002**
Cognitive impairment, n (%)	265 (44)	241 (43)	24 (59)	0.047*
Health profile †, n (%)				0.005**
°healthy	147 (24)	145 (26)	2 (4.9)	
°complex	343 (57)	317 (56)	26 (63)	
°very complex	117 (19)	104 (18)	13 (32)	
Malnutrition, n (%)				0.005**
° No	87 (14)	85 (15)	2 (4.9)	
° NRS 3	143 (24)	140 (25)	3 (7.3)	
° NRS 4	195 (32)	178 (31)	17 (41)	
° NRS 5	182 (30)	163 (29)	19 (46)	

* p<0.05, **p<0.01, ***p<0.001- Pearson's Chi-squared test; Fischer's exact test; Wicoxon rank sum test

† As defined by the American Diabetes Association (ADA)

Patient's Characteristics	Total population	Deceased by 6-weeks follow-up		P value*
		NO	YES	
	(N=607) (100.0%)	(N=566) (93.25%)	(N=41) (6.75%)	
Time to surgery, mean [±SD]	35 []	35	33	>0.9
° 0-24h	293 (48)	273 (48)	20 (49)	
° 24-36h	99 (16)	89 (16)	10 (24)	
° 36-48h	90 (15)	85 (15)	5 (12)	
° >48H	125 (21)	119 (21)	6 (15)	
Complications	319 (53)	285 (50)	34 (83)	<0.001***
° ICU	27 (4.4)	24 (4.2)	3 (7.3)	0.4
° delirium	109 (18)	95 (17)	14 (34)	0.005**
° cardiac	73 (12)	60 (11)	13 (32)	<0.001***
° infection	112 (18)	97 (17)	15 (37)	0.002**
° ARF	90 (15)	76 (13)	14 (34)	<0.001***
° orthopedic	26 (4.3)	22 (3.9)	4 (9.8)	0.090

- p<0.05, **p<0.01, ***p<0.001- Pearson's Chi-squared test; Fischer's exact test; Wicoxon rank sum test
- ICU: intensive care unit; ARF: Acute Renal Failure

Univariate Analysis

	OR ¹	95% CI ¹	p-value ²
Women	0.37	0.19, 0.73	0.003**
Age	1.06	1.01, 1,11	0.022*
Cognitive Impairment	1.90	1.01, 3.68	0.050*
Health status			
-complex	5.95	1.75, 37.2	0.016*
-very complex	9.06	2.44, 58.8	0.004**
Malnutrition			
-NRS 5	4.95	1.39, 31.6	0.034*
Time to surgery	1.00	0.99, 1.01	0.8
Complications	4.79	2.21, 11.9	<0.001***
-delirium	2.57	1.27, 5.01	0.007**
-cardiac	3.92	1.87, 7.84	<0.001***
-infection	2.79	1.40, 5.40	0.003**
-acute renal failure	3.34	1.64, 6.57	<0.001***

¹ OR = Odds Ratio, CI = confidence interval; ² *p<0.05; **p<0.01; ***p<0.001

Multivariate Analysis

	OR ¹	95% CI ¹	p-value ²
Women	0.34	0.16, 0.73	0.005**
Age	1.03	0.97, 1.09	0.4
Cognitive impairment	1.47	0.61, 3.67	0.4
Health status			
-complex	3.28	0.85, 21.8	0.13
-very complex	3.75	0.78, 28.2	0.13
Malnutrition			
-NRS 3	1.23	0.19, 10.0	0.8
-NRS 4	4.26	1.10, 28.4	0.067
-NRS 5	5.11	1.33, 34.1	0.039*
Time to surgery			
-24h-36h	0.96	0.36, 2.34	>0.9
-36h-48h	0.52	0.15, 1.49	0.3
->48h	0.54	0.218, 1.42	0.2
Complications			
-Intensive Care Unit	1.01	0.16, 4.33	0.9
-Delirium	1.51	0.67, 3.25	0.3
-Cardiac	4.14	1.73, 9.66	0.001**
-Infection	2.19	0.98, 4.73	0.050*
-Acute renal failure	2.63	1.17, 5.72	0.016*
-Orthopedic	4.21	0.85, 16.8	0.055

¹ OR = Odds Ratio, CI = confidence interval ² *p<0.05; **p<0.01; ***p<0.001

Bilan 5 ans après la création d'une unité d'orthogériatrie

Conclusions:

Mortality rate reduction can be achieved in geriatric patients with hip fractures by **preventing renal and cardiac complications** and **improving management and treatment of undernourishment.**

Répartition des centres FLS en Suisse, janvier 2023



Or



Argent



Bronze



Nouveau
centre FLS



Projet



FILIERE OSTÉOPOROSE

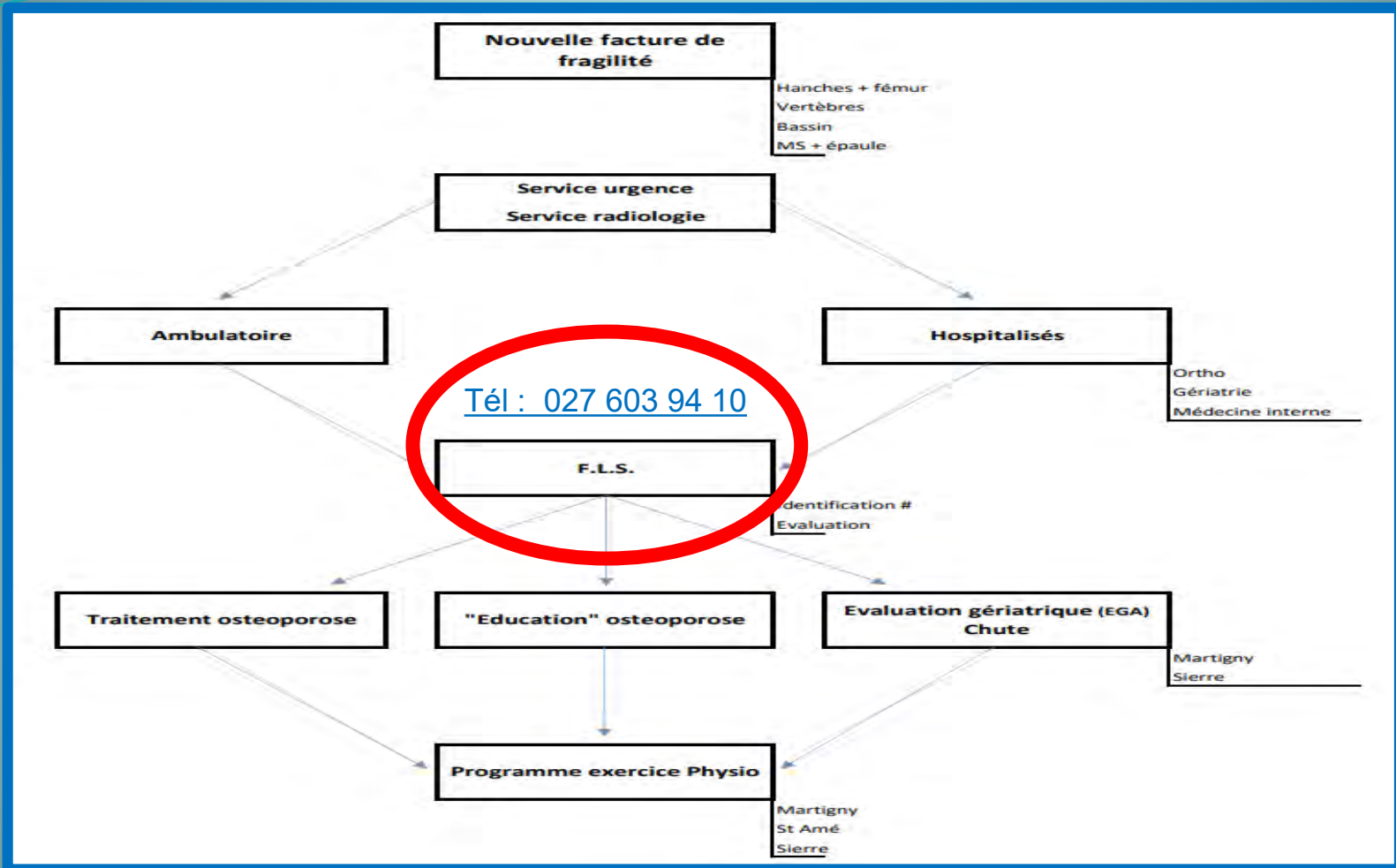
- FRACTURE LIAISON SERVICE (FLS)

- **Quand** : consultation ambulatoire les mercredis après-midi
- **Où** : hôpital de Martigny
- **L'équipe** : 2 médecins : **Dr Jean** (gériatre) et **Dr Buchard** (rhumatologue) et 1 infirmière : **Sophie Boudier**
- **Critères d'éligibilité** : patients > 50 ans
 - hospitalisés (ortho-traumatologie, gériatrie, médecine interne) tous les sites de fracture (exception: crâne, pied et main)
 - ambulatoire: avis et prise en charge
- **Missions** : prise en charge diagnostique et thérapeutique non-chirurgicale (suivi à 16 sem et 1 an)
 - prévention d'une nouvelle fracture et de la morbidité associée
 - prévention des chutes
 - intérêt en terme de formation pour les médecins assistants
 - potentiel de recherche

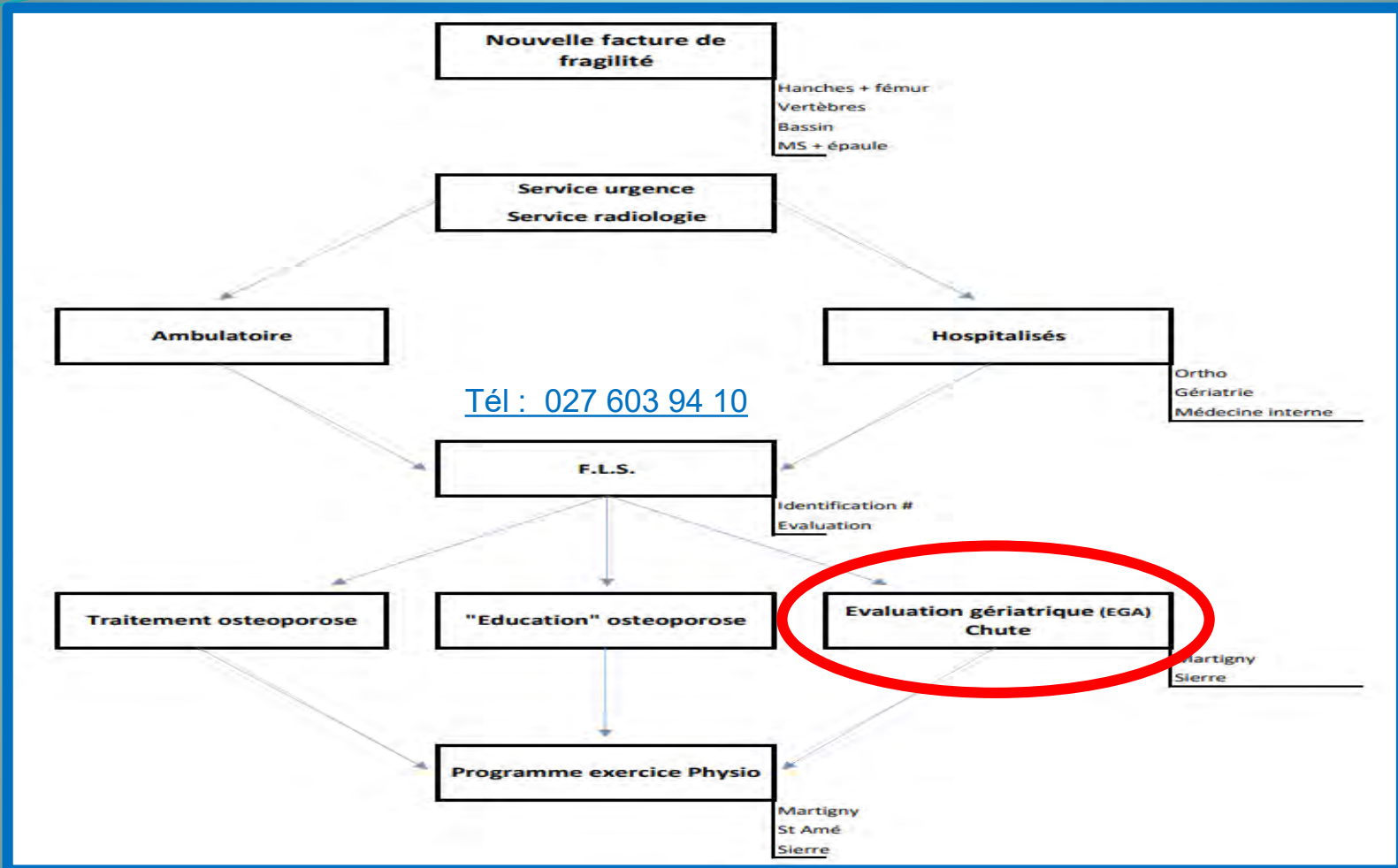


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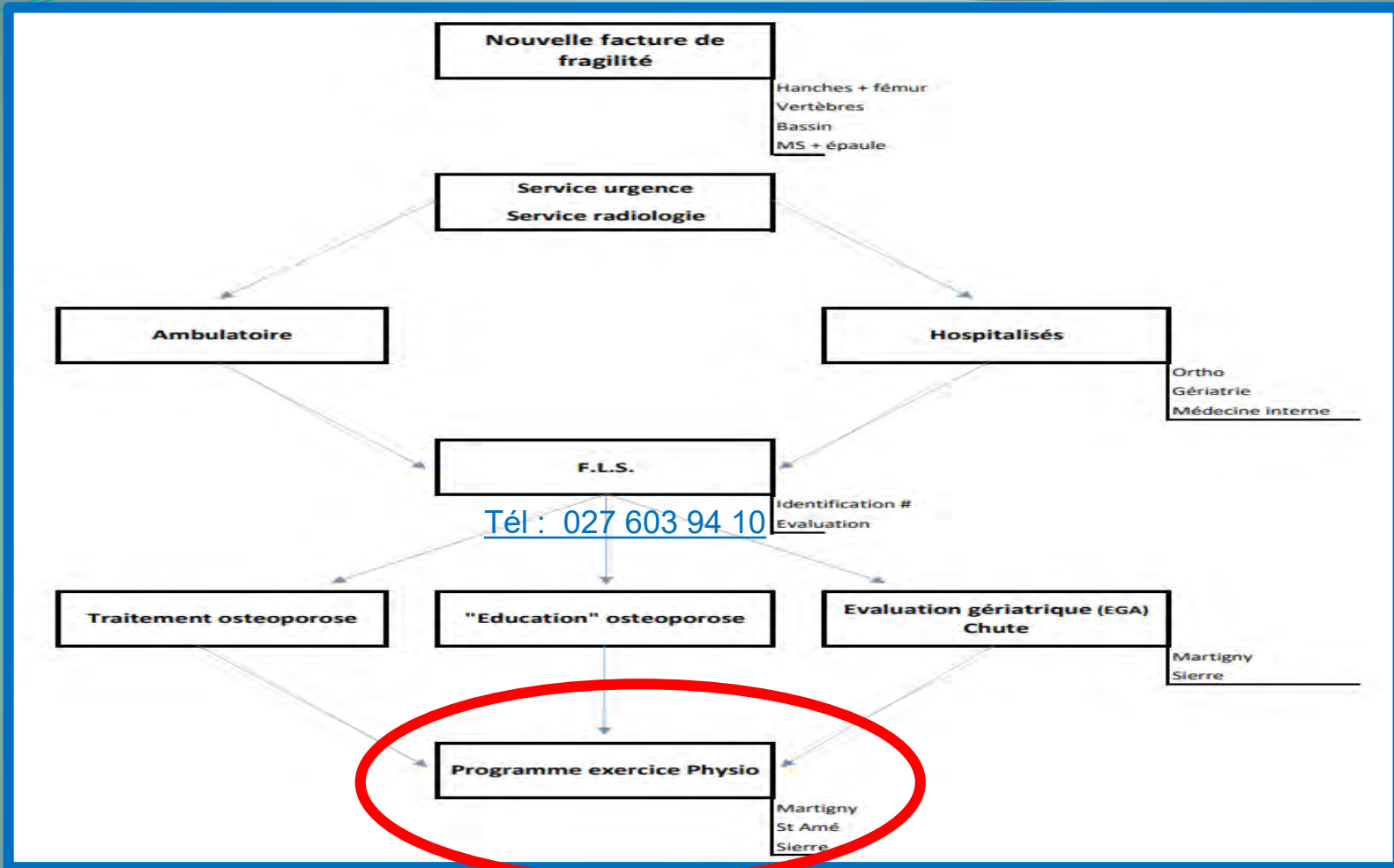
FILIERE OSTÉOPOROSE - FRACTURE LIAISON SERVICE



FILIERE OSTÉOPOROSE - FRACTURE LIAISON SERVICE



FILIERE OSTEOPOROSE - FRACTURE LIAISON SERVICE



Take Home Messages

- **Le modèle ortho-gériatrique** repose:
 - Mis en place de **protocoles de soins standardisés**
 - **comanagement** par le chirurgien et le gériatre
 - **Travail en équipe interdisciplinaire** (infirmière, physio, ergo, diététicienne et assistante sociale)
- **Les bénéfices de l'unité d'ortho-gériatrie**
 - **diminution :**
 - Mortalité et complications post-opératoire
 - Perte d'autonomie AVQ et AIVQ
 - Institutionnalisation
 - **amélioration:**
 - Mobilité
 - Syndrome post-chute



