

The Geriatric Patient on ICU

On behalf of the IC College
P.Ferdinande

PF 2008

Method

1. General questionnaire on 28-11-2007
2. Patient specific questionnaire on 28-11-2007
and two months later 28-01-2008

The Geriatric Patient on ICU



Response rate : **53** / 126 ICU's or **42** %

General Questionnaire

1. Response from **53** ICU's representing **887** ICU beds
or mean of **16,7** beds / ICU (median 12 Q25-75 9-22)

2. Serving : > A total of **19 254** hospital beds of the campus where
the ICU is located .(4.6% ICU beds)

or a mean of **357** hospital beds per ICU
median 290,5 bed (Q25-75 : 218,25 - 920)

> A total of **24 219** hospital beds for all campuses
served by the ICU.(3.6% ICU beds)

or a mean of **449** hospital beds per ICU
median 390,5 (Q25-75 = 256,1 – 600).

Number of FTE geriatricians

on the campus of the ICU

total 119

mean 2 / ICU

median 1, ... (Q25-75) 1 – 2,25

or 1 FT geriatrician /161 hospital beds

on all campuses served by the ICU

total 158

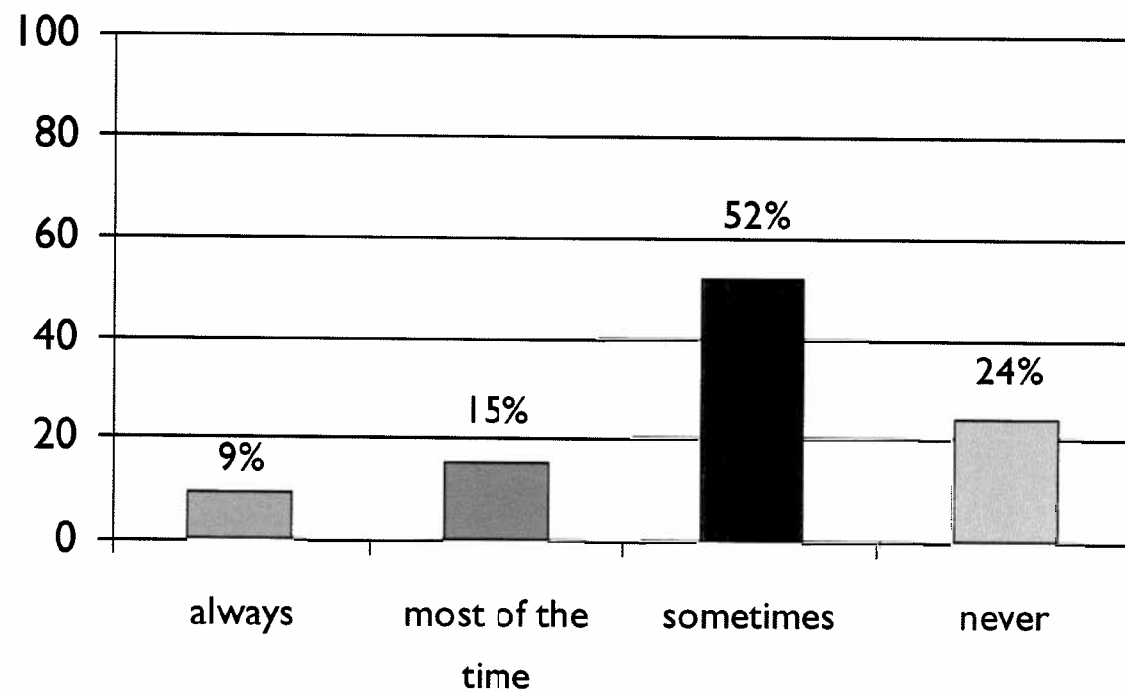
mean 4

median 2 (Q25-75) 1 – 3,5

or 1 FT geriatrician /203 hospital beds

The geriatricians take part in the decision making
to ADMIT a patient > 75 y on the ICU.

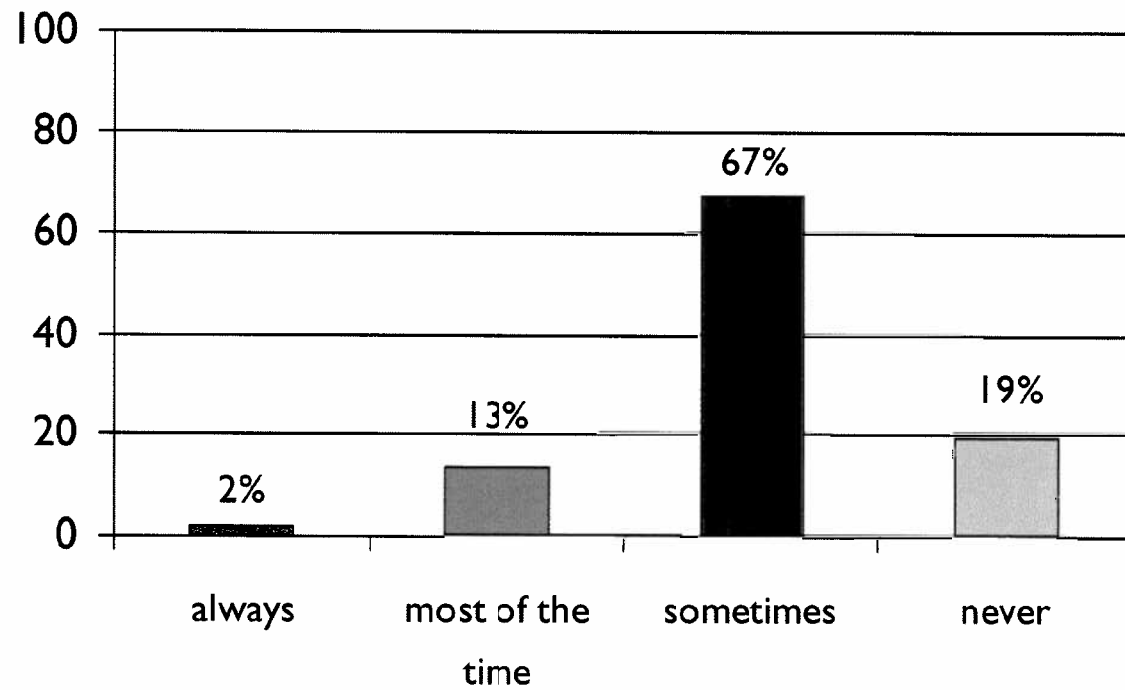
(= There is a protocol)



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Mean 2.91

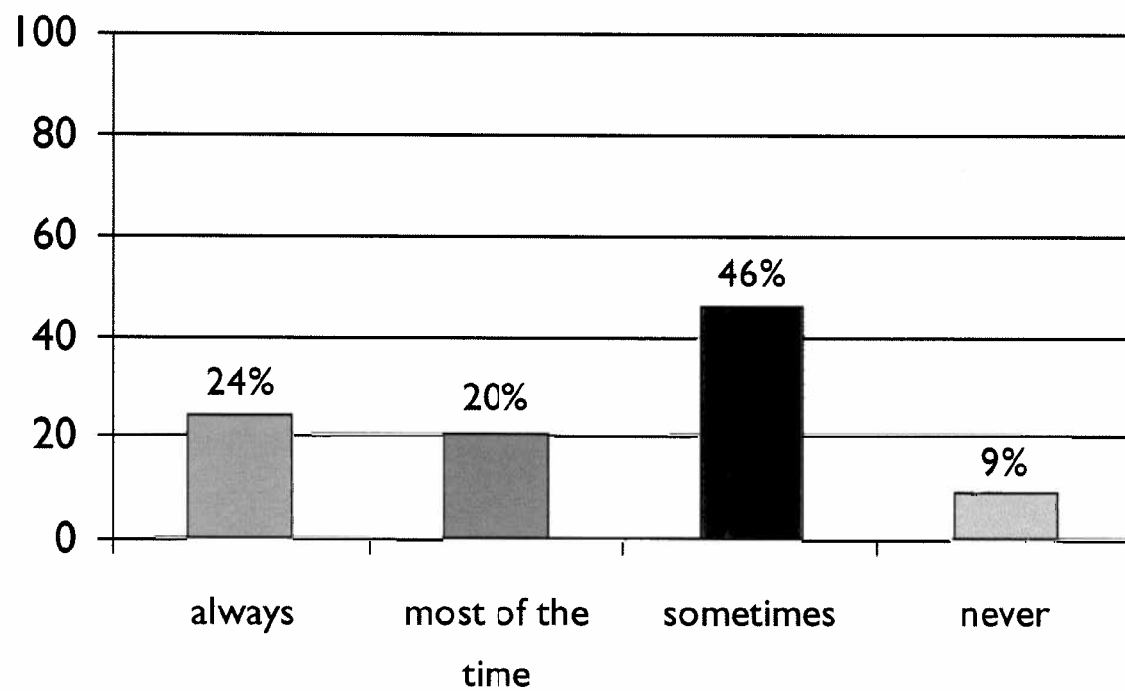
The geriatricians are consulted during the ICU stay
of a geriatric patient.



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Mean 3

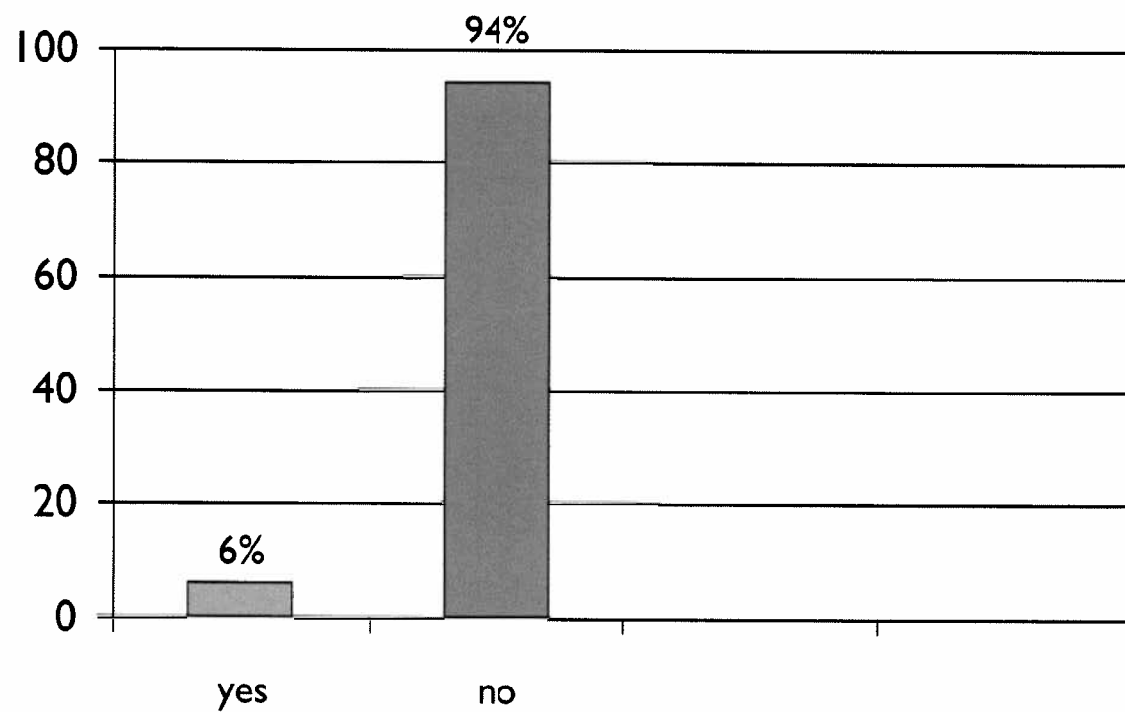
The geriatricians are consulted
at ICU discharge of the geriatric patient



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Mean 2,4

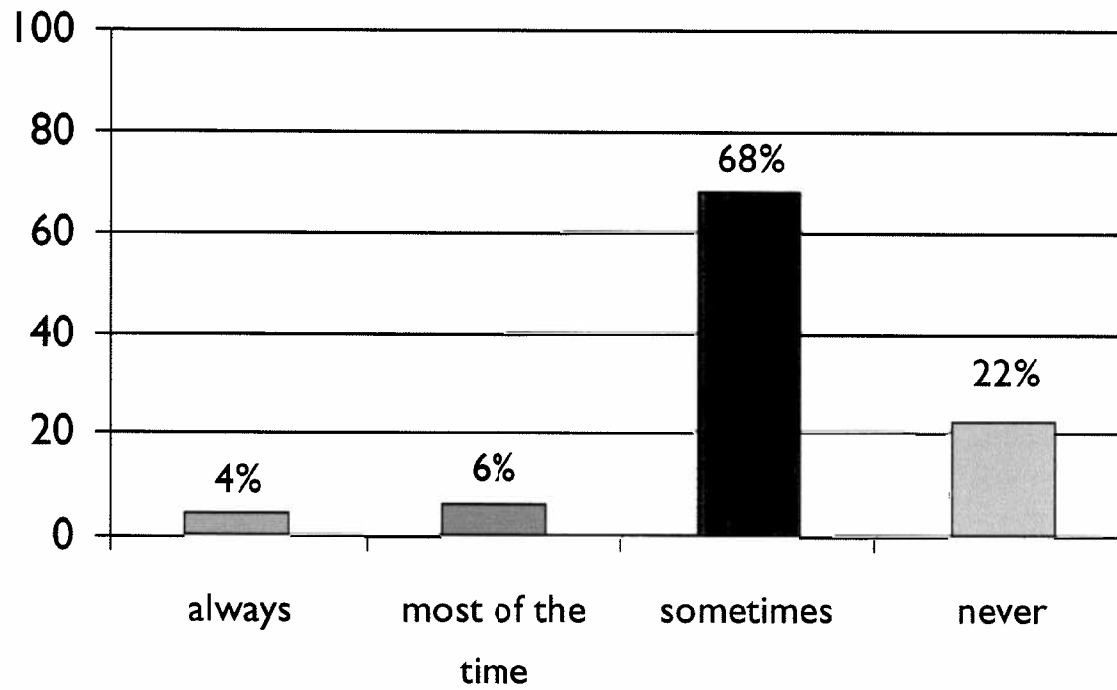
There is a written protocol to admit the geriatric patient on ICU



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Admission criteria for a geriatric patient (> 75 y) on ICU

AGE

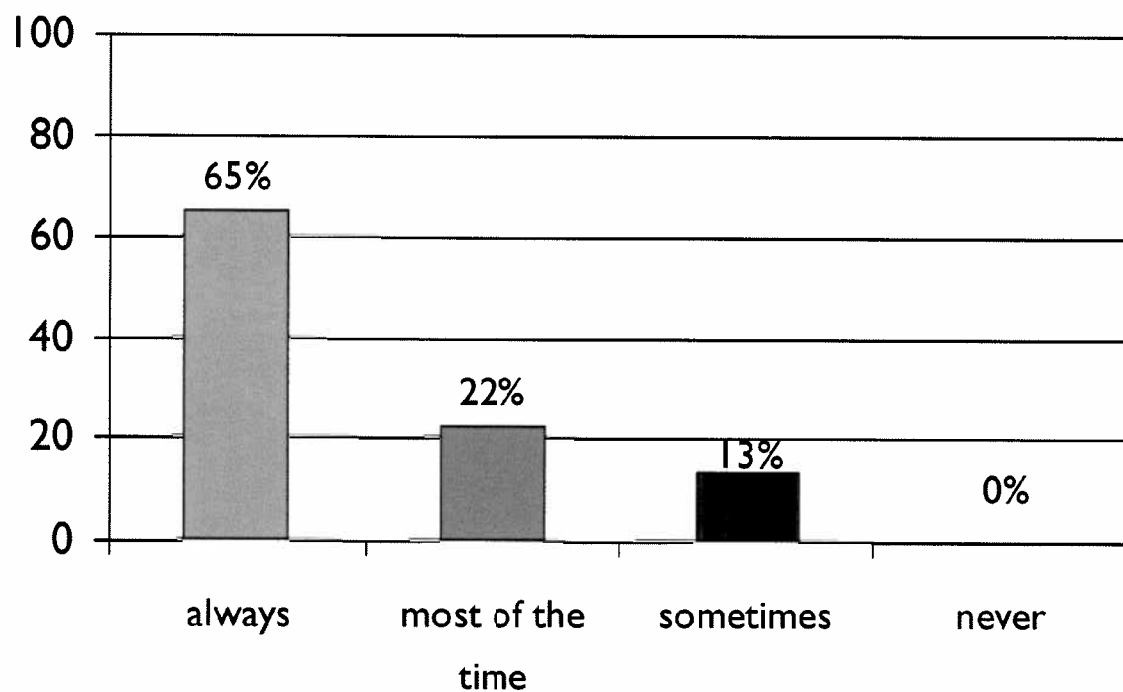


PF 2008

Mean 3,09

Admission criteria for a geriatric patient (> 75 y) on ICU

Principal diagnosis

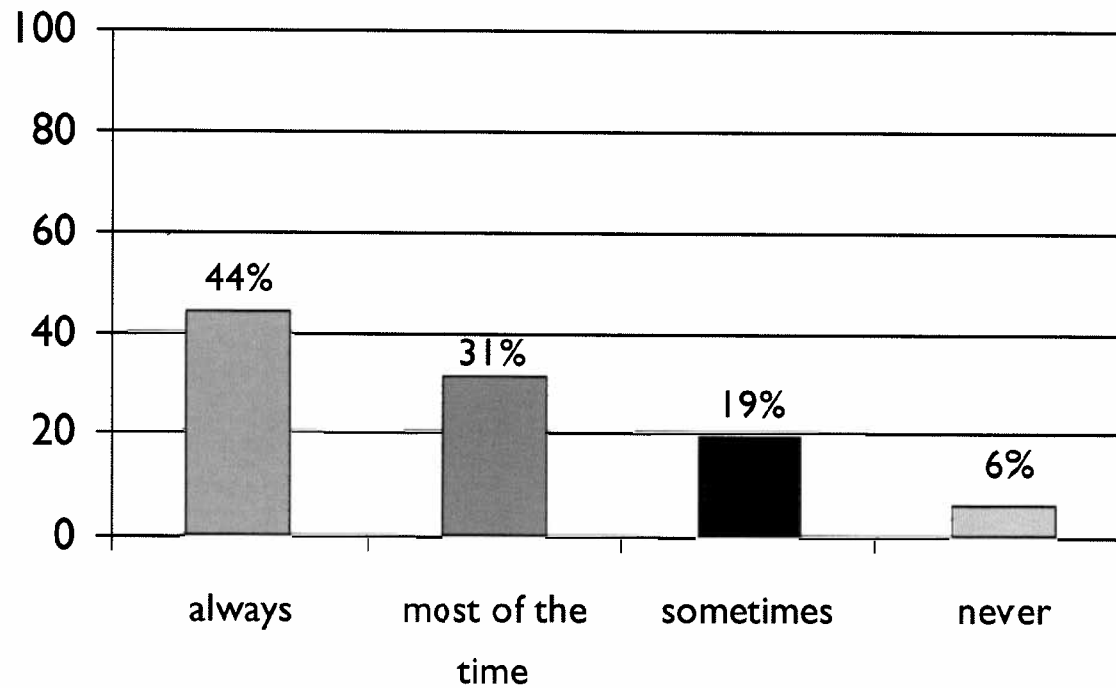


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Mean 1,47

Admission criteria for a geriatric patient (> 75 y) on ICU

Number of failing organ systems

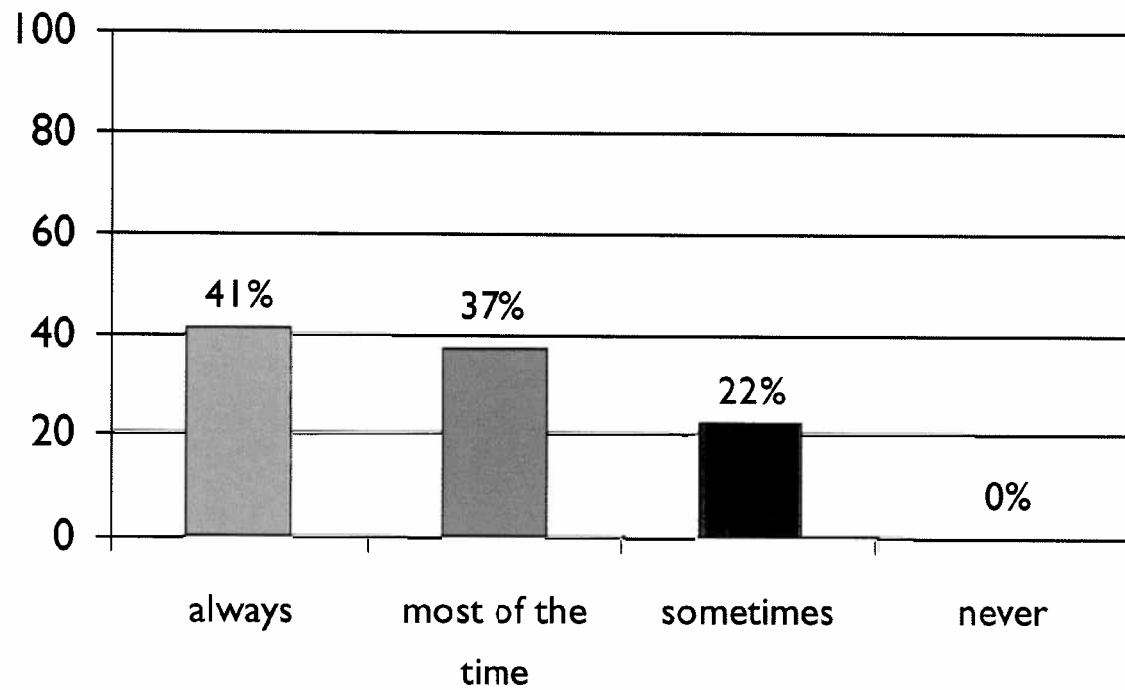


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Mean 1,8

Admission criteria for a geriatric patient (> 75 y) on ICU

Comorbidities

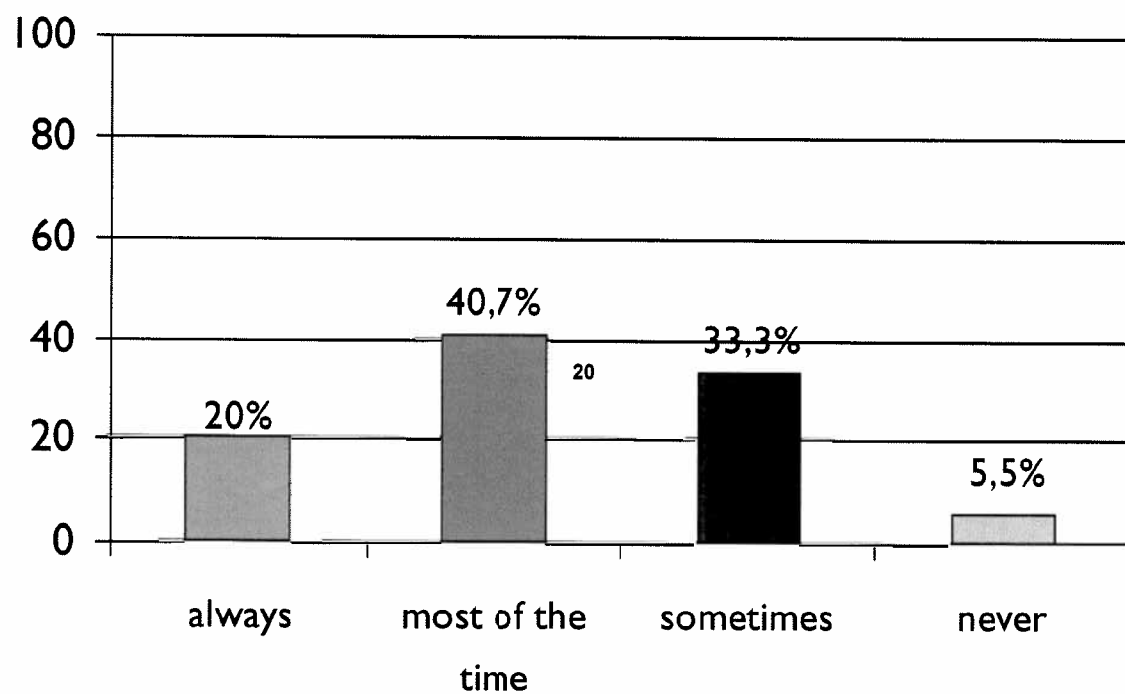


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Mean 1,77

Admission criteria for a geriatric patient (> 75 y) on ICU

Degree of previous autonomy

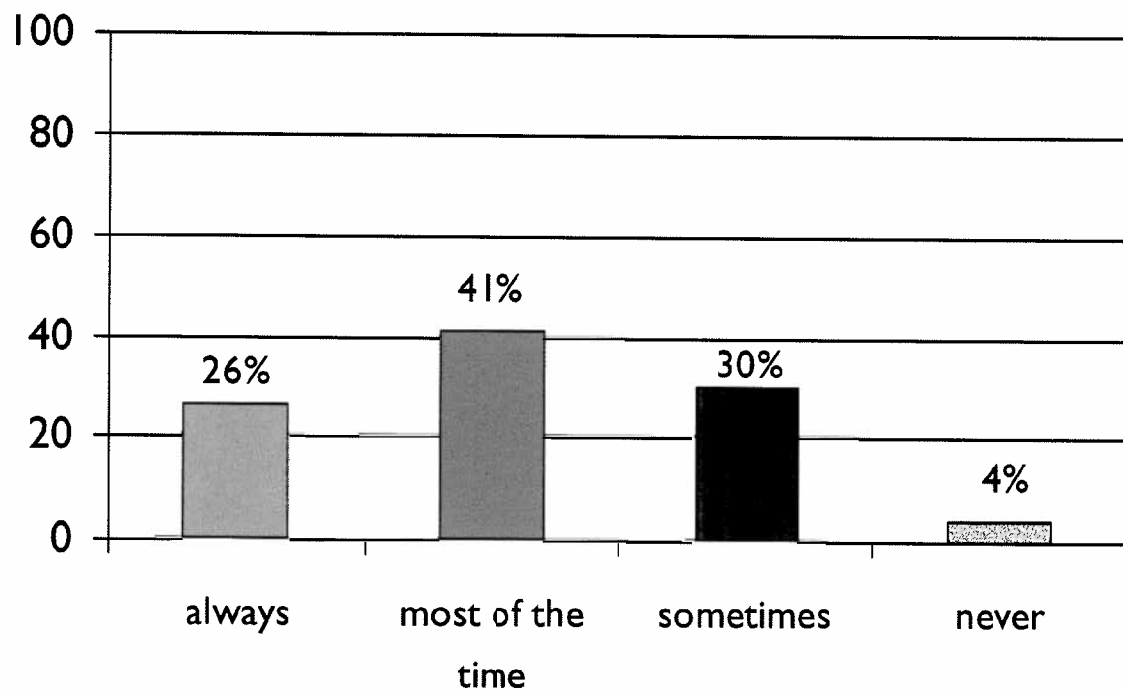


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Mean 2,16

Admission criteria for a geriatric patient (> 75 y) on ICU

Cognitive status

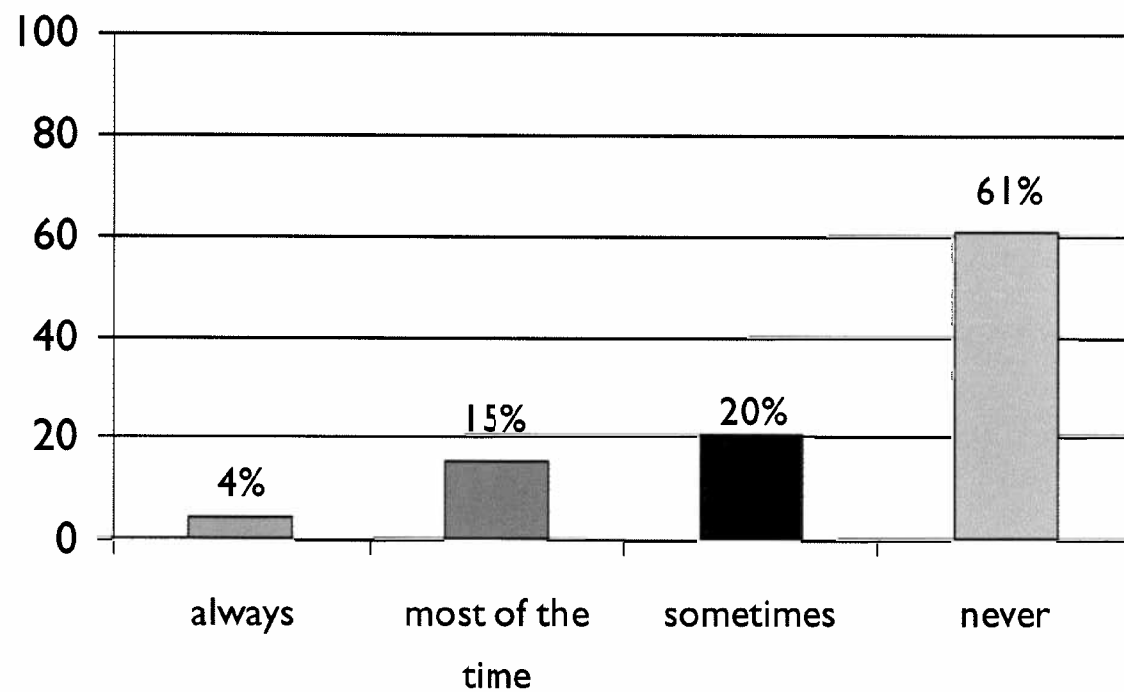


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Mean 2,09

Admission criteria for a geriatric patient (> 75 y) on ICU

Nutritional status

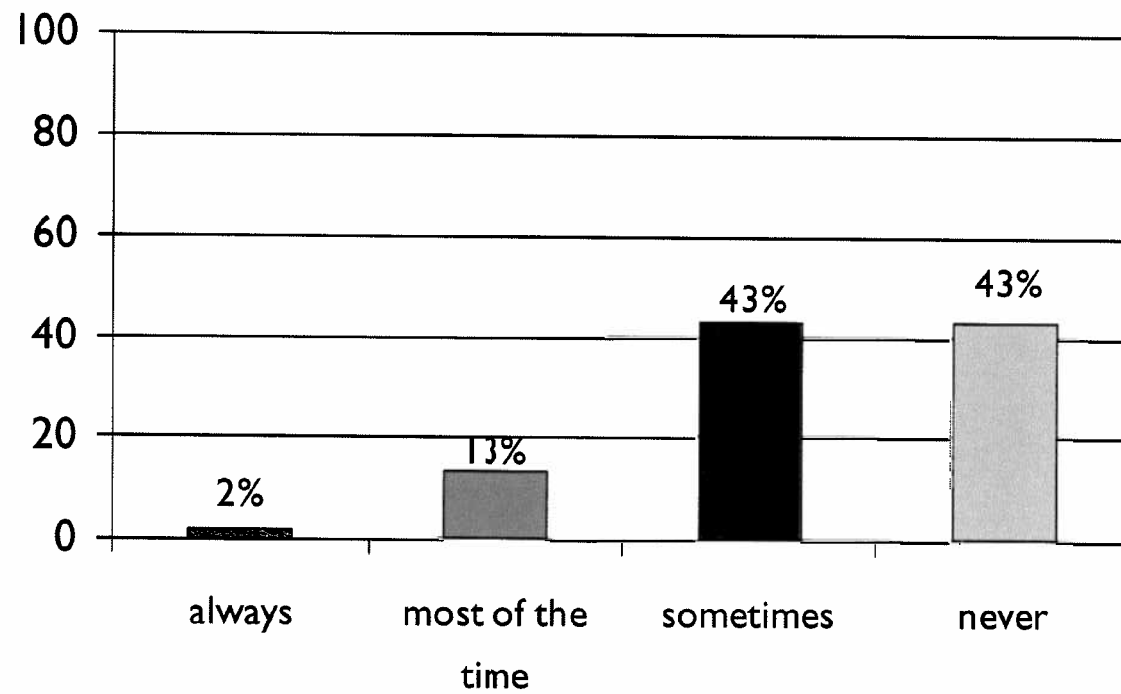


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Mean 3,32

Admission criteria for a geriatric patient (> 75 y) on ICU

Family circle



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Mean 3,32

During therapeutic decisions do you take in account the will / wishes of :

	yes	no
the geriatric patient ?	98 %	2 %
the family/relatives ?	96 %	4 %

Does the factor age ≥ 75 y play a role in the use of therapeutic modalities ?

	yes	no
NIV	11 %	89 %
Classical IPPV	33 %	67 %
Hemodialysis/filtration	57 %	43 %
Inotropic/vasopressor	24 %	76 %
Invasive techniques (surgical interventions, Interventional radiology,...)	33 %	67 %

Age profile of ICU patients on 28-11-07

	Total	average per ICU
Total	760 (100 %)	14
< 75 y	506 (66,6 %)	9
≥ 75 y	254 (33,4 %)	5
75-79 y	119 (15%)	2
80-85 y	91 (11,9 %)	2
>85 y	44 (5,7 %)	1

Patient Specific Questionnaire

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Patient Specific Questionnaire

Part I : 28-11-2007

geriatric patients on board : **254**

age : mean **81** year mean
median **80** Q25-75 77-83

gender male **50 %**
female **50 %**

Patient Specific Questionnaire

Where do they come from before hospital admission ?

home	74 %
nursing home	13 %
SP department/hospital	2 %
other hospital	9 %
short stay	0 %
unknown	1 %
other	1 %

Patient Specific Questionnaire

Who asked for ICU admission

general practitioner	2 %
hospital physician in charge	59 %
geriatrician	3 %
hospital physician in training	2 %
emergency physician	24 %
family	0 %
nurse	0 %
internal MUG	2 %
other	9 %

Patient Specific Questionnaire

Who decided to **ADMIT** the patient to ICU

intensivist with professional title	76 %
physician – non intensivist	17 %
ICU nurse	0 %
physician in training	2 %
other	5 %

Patient Specific Questionnaire

Therapeutic code on admission

Full therapy	100%
Therapeutic de-escalation	0 %

Advanced care planning

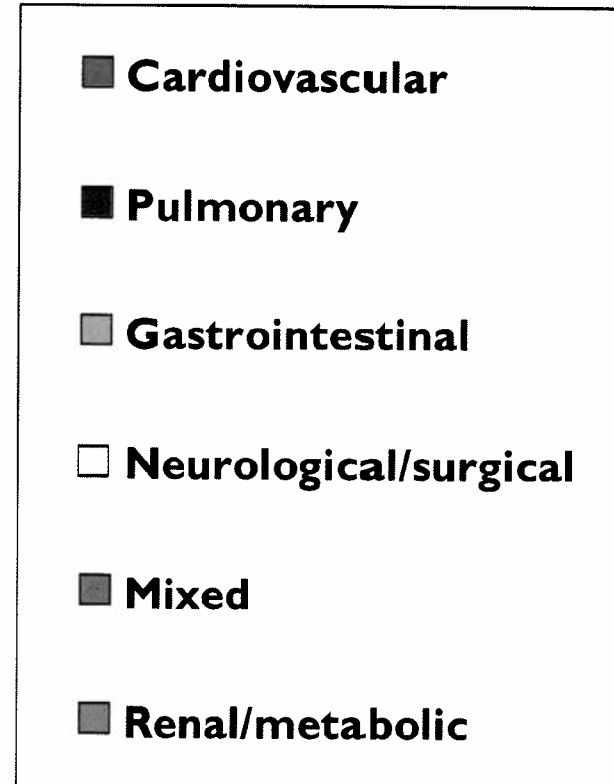
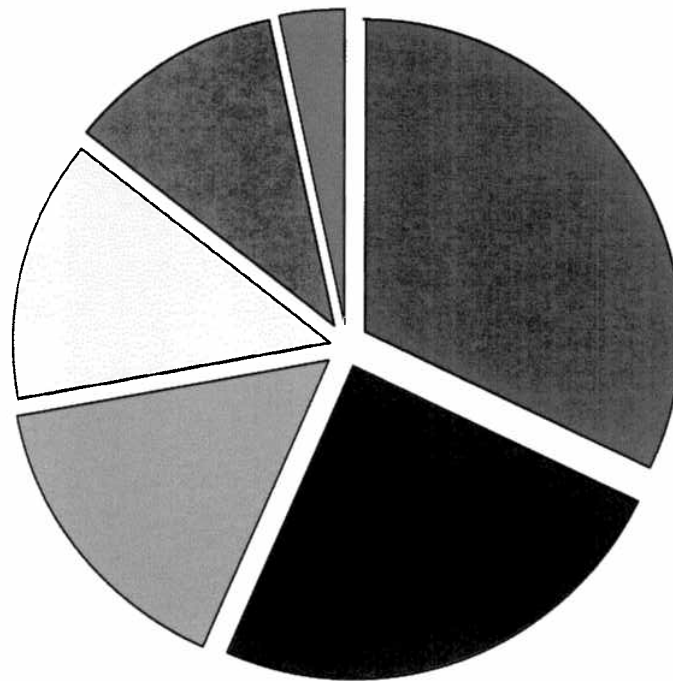
Yes	4 %
No	96 %

Patient Specific Questionnaire

	mean	median	Q25-75
Apache II score	19	18	12-24

	yes	no
Patient agitated ?	26 %	74 %
sedated ?	10 %	90 %

Principal Diagnosis on ICU admission



Emergency ICU admissions : 208 (84,7 %) !

Planned ICU admissions 2008 38 (15,2 %)

Principal Diagnosis on ICU admission

Diagnosis (>5 patients)	%
Cardiovascular 1. Cardiac surgery (n=20) 2. Vascular surgery (n=17) 3. Acute coronary syndromes (n=12) 4. Rhythm and conduction disturbances (n=5)	31.8
Pulmonary 1. Infection (n=33) 2. Failure not infection related (n=15)	24.4
Gastro-intestinal 1. Bleeding (n=9) 2. Peritonitis (n=8) 3. Obstruction (n=7)	15.7
Neurological/surgical 1. Cerebrovascular accident (n=11) 2. Acute/chronic subdural hematoma (n=8) 3. Injury (n=6)	13.6
Mixed 1. Polytrauma (n=12) 2. Postoperative observation (n=9)	11.1
Renal/ metabolic	3.3

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Patient Specific Questionnaire

on 28-11-2007

<u>Monitoring</u>	%	<u>Therapy</u>	%
ECG	97	Mechanical ventilation	39
Non invasive BP	28	Non invasive ventilation	8
Invasive BP	82	Oxygen therapy	73
CVP (catheter)	76	Vasopressor/inotropes	31
Oxymetrie	98	Antiarrhythmics	22
Central temperature	39	Antibiotics	61
Peripheral temperature	50	Hemodialysis/acute	5
Invasive CO	11	Hemodialysis/chronic	2
Non invasive CO	3	Blood/products	17
Urine output	86	TPN	30
Respiratory rate	88	ENutrition	38
Other	7	Induced hypothermies	1
		Other	7

(GSC, ICP/ CPP, airway pressure, analgesia, glycemic capnography, SVCO₂, BISS monitoring)

(IABP, VAC pomp, QTT, Solucortef, anti E, cardioversion, heparin drip, NO, antidecubitus, fibrinolyse, antihypertensiva, insuline IV, tracheo, CT scan abdomen)

On 28-11-2007.....

Monitoring	%	Therapy	%
Oxymetry	98	Oxygen therapy	73
ECG	97	Antibiotics	61
Respiratory rate	88	Mechanical ventilation	39
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Central temperature	39	Blood/products	17
Non invasive BP	28	Non invasive ventilation	8
Invasive CO	11	Hemodialysis acute	5
Non Invasive CO	3	Hemodialysis chronic	2
Other	7	Induced hypothermia	1
		Other	7

Patient Specific Questionnaire

Social anamnesis.		
Information (score) on	yes	no
cognitive status	23 %	77 %
autonomy	24 %	76 %
nutritional status	21 %	79 %
Does the patient have relatives	95 %	5 %
Normal frequency of visits	90 %	10 %
Supportive care for the patient	83 %	17 %

Patient Specific Questionnaire

What is the opinion of the geriatrician about

ICU admission ?

indicated	30 %
not indicated	16 %
no idea	54 %

With regard to the indication of ICU stay the geriatrician was

not consulted	71 %
not informed	17 %
not available	7 %
consulted	5 %

Patient Specific Questionnaire

After two months (28-01-2008)		
Follow up rate	184/254 pts	74,7 %
Mortality	72/184 pts	39,1 %
Patients died	under maximal therapy	33 %
	after DNR coding	67 %
DNR code was installed		
	after patient's consent	8 %
	with consent of the family	92 %
	without consent	0 %

ICU mortality in the geriatric patient :

The literature

Author	Journal	n	age	ICU	ICU mortality %
Kass JE	CCM 1992	105	>85 y	General	30
Dardaine V	Aging 1995	110	>70 y	Ventil support	38
Montuclard L	CCM 2000	75	>70 y	General	33
Wei Y	Gen Int med 2000	163	>85 y	General	38
Somme D	Int Care Med 2003	410	75-79/80-84/>85	General	32/25/31
Kaarlola A	CCM 2006	254	>75	General	18,5
Brunner-Z S	Wien Klin Woch 2007	828	75-85/>85	Multidiscipl	30,8/36,6
Merlani P	Acta Anaest Sc 2007	141	>70	Severe abd pat	21
Reinikanen M	Acta Anaest Sc 2007	6348	>80	General	28.4 Hos+

Patient Specific Questionnaire

ICU LOS	mean 18 days median 10	Q25-75	9-24
Transfer ICU →			
	same service as before ICU admission	48 %	
	other service in the hospital	35 %	
	geriatric service	17 %	
Hospital LOS.....			
Hospital discharge →			
	home	55 %	
	home replacing institution	12 %	
	other hospital	0 %	
	rehab. facility – SP – service	20 %	
	unknown	6 %	
	other	7 %	
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Patient Specific Questionnaire

Are you aware of the existence of
a geriatric care programme ?

yes : **55 %**

no : **45 %**

The Geriatric Patient on ICU : conclusions (I)

- 33.4 % of the ICU bed capacity is occupied by geriatric patients (age > 75 y) .
- Poor involvement of geriatricians in decisions on ICU admission and ICU treatment . ICU admission protocols for geriatric patients are almost non existing .
- Principal admission diagnosis , MOD and comorbidities are taken in account as admission criteria . Autonomy and cognitive status are also taken in account .Age, nutritional status , family circle are considered to be less important .
- Patient and family wishes /will are well respected .

The Geriatric Patient on ICU : conclusions (2)

- Age plays a certain role in the use of hemodialysis and to a lesser extent of invasive ventilation and procedures .
- The vast majority of patients comes from home and the attending hospital physician or emergency specialist asks for ICU admission .The decision for ICU admission is mostly made by the intensivist .
- 84.7 % are emergency ICU admissions with cardiovascular , pulmonary , GI and neurological/surgical indications .
- Objective information on cognitive status,autonomy or nutritional status of the geriatric patient in ICU is not actively gathered .

The Geriatric Patient on ICU : conclusions (3)

- ICU mortality is 39.1 % at 2 months .
- 67% of the patients die with DNR codes and 33% under maximal therapy.
- Mean ICU stay is 18 days with a median of 10 and Q25-75 of 9-24 .
- 83% of the patients are discharged to a non geriatric service .
- The existence of a geriatric care programme is known by 55 % of the respondents .

Recommendation

- The ICCollege recommends :
 1. to submit all patients older than 75 years to a screening by the geriatric care program team as soon as possible after hospital admission .
 2. to discuss an Advanced Care Planning whenever appropriate with the geriatric patient preferably before ICU admission

Remarks from a geriatric point of view

Dr. Greet Lambert
President of College for Geriatrics

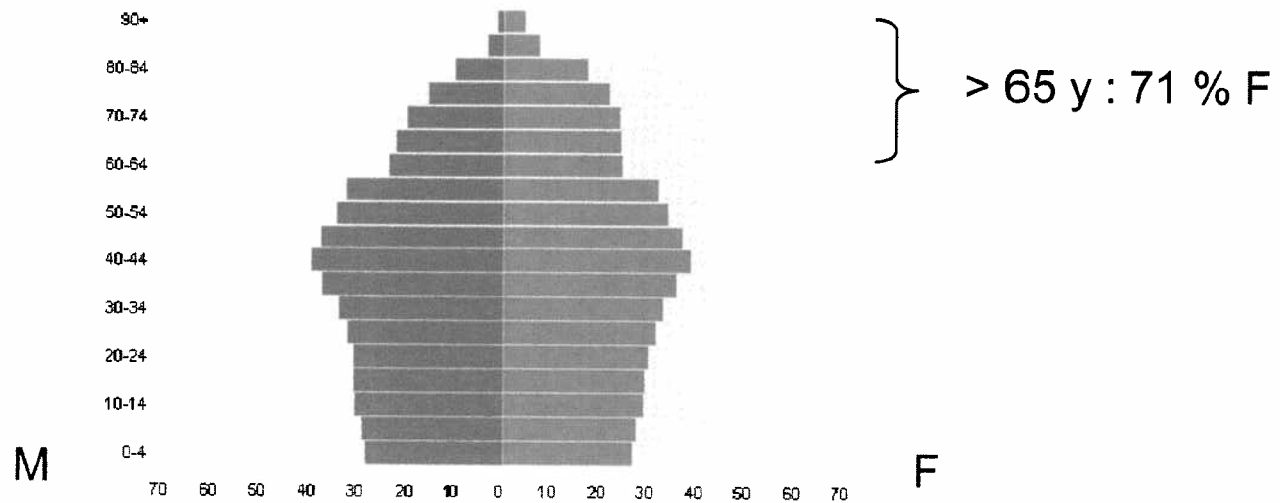


Remarks from a geriatric point of view

- Demography
- Delirium
- Decision making
- Discharge
- Care program for the geriatric patient
- Conclusions

Demography

- M = F
 - Belgium 2006



- UZ Brussel 28/11/2007 > 75 y : 66 % F

www.statbel.fgov.be

Demography

- Age

	1994-1996	2007
75-79 y		15 %
80-85 y		11.9 %
≥85 y	1.3 %	5.7 %

Van Den Noortgate et al. Age Ageing 1999; 28:253-256

Agitation / delirium

- Survey ICU: 26 % agitated
- Agitation
 - ICU: 70.8 % of patients agitated
Szokol et al. Critical Care Clinics 2001; 17:821-842
- Delirium
 - older hospitalized patients: → 60%
 - ICU: 87 %
Ely et al. Critical Care Medicine 2001; 29: 1370-1379

Decision making

- Age?
- Functionality
- Cognitive status

⇒ Indicators of **frailty**

- Cognitive & mental status
- Nutritional status
- Functionality
- Sarcopenia
- Comorbidity & polypharmacy
- Social isolation
- Sensory impairment

Decision making

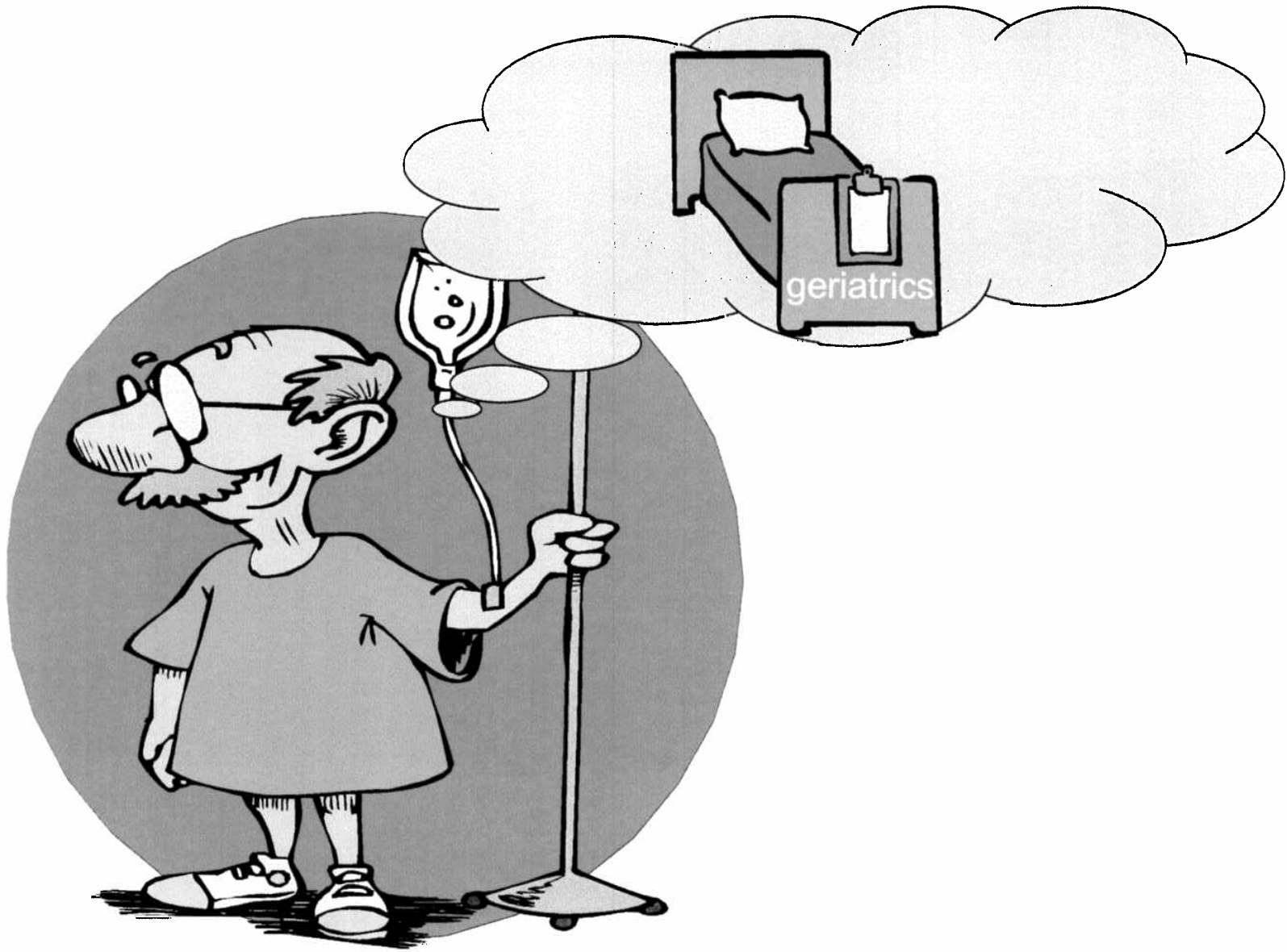
- Advance care planning
 - Wishes of patient (testimony?)
 - Legal guardian or representative
 - Multidisciplinary approach
 - Avoid futile treatments

Decision making

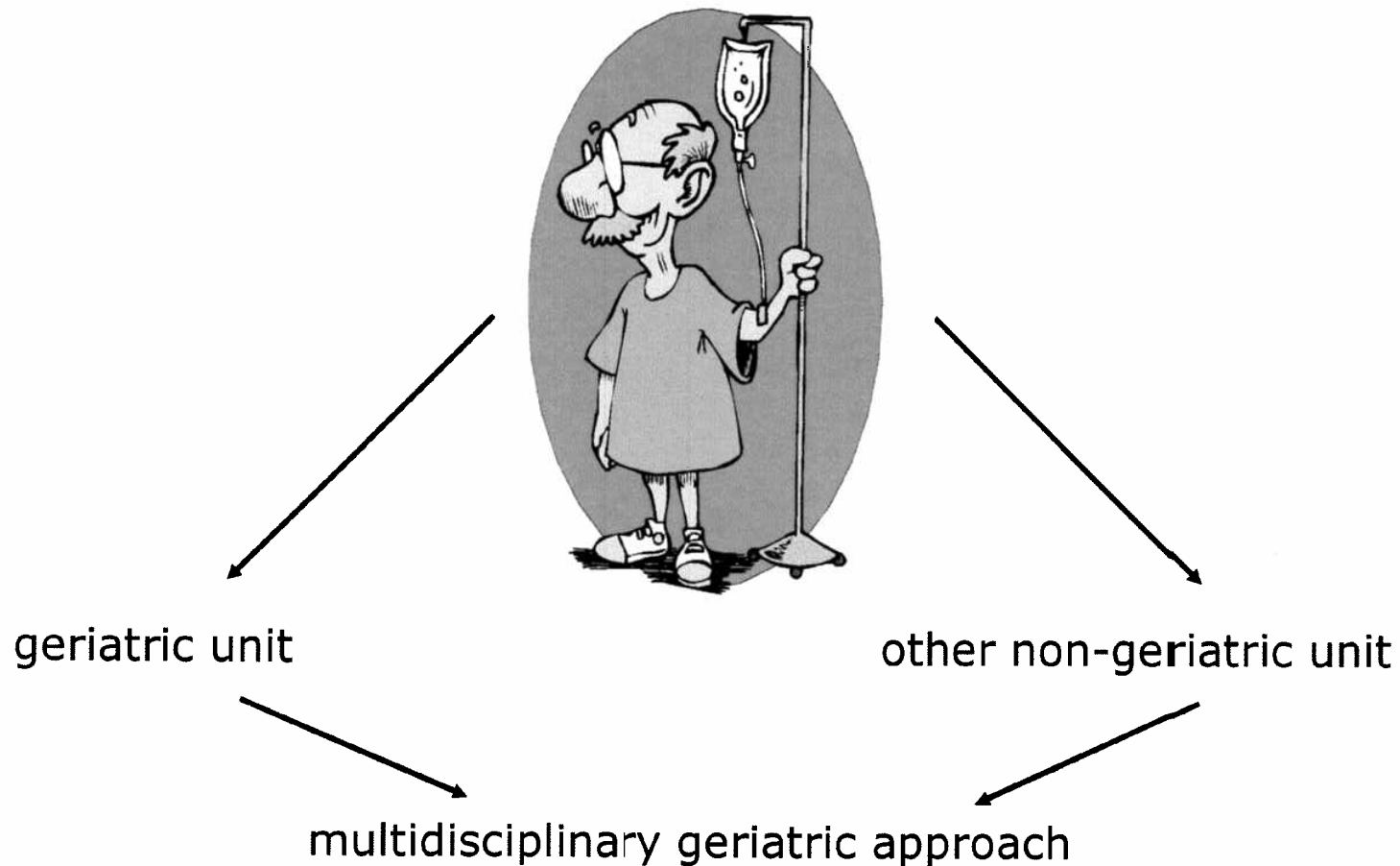
- Geriatricians seldom are consulted
 - < lack of geriatricians
 - < lack of knowledge what geriatricians do
 - < lack of knowledge definition geriatric patient
 - < emergency admissions

Discharge

- Transfer to geriatric unit: 17 %
 - < lack of consultation of geriatrician
 - < lack of knowledge added value of geriatric service
 - < lack of G-beds



“Zorgprogramma voor de geriatrische patient”
“Programme de soins pour le patient gériatrique”



Belgisch Staatblad / Moniteur Belge 2007, March 7

Care program for the geriatric patient

- Definition of a geriatric patient
- Aims and goals of a geriatric approach
 - Multidisciplinary
 - Cooperation with GP, specialist & other health care workers
 - Diagnosis, therapy & rehabilitation
 - Functionality, independence & quality of life
 - Return home
 - Continuity of care & follow-up

Care program for the geriatric patient

- Art. 2
 - every general hospital with G-beds
 - other general hospitals: cooperation with most nearby hospital
- Art. 3
 - > 75 y
 - geriatric patient
- Art. 4
 - “every hospitalized patient > 75 y should be evaluated to determine if he is a geriatric patient and should be included in the care program”

Care program for the geriatric patient

- Art. 6
 - Geriatric unit
 - Geriatric outpatient clinic
 - Geriatric day hospital
 - Internal liaison
 - External liaison

Care program for the geriatric patient

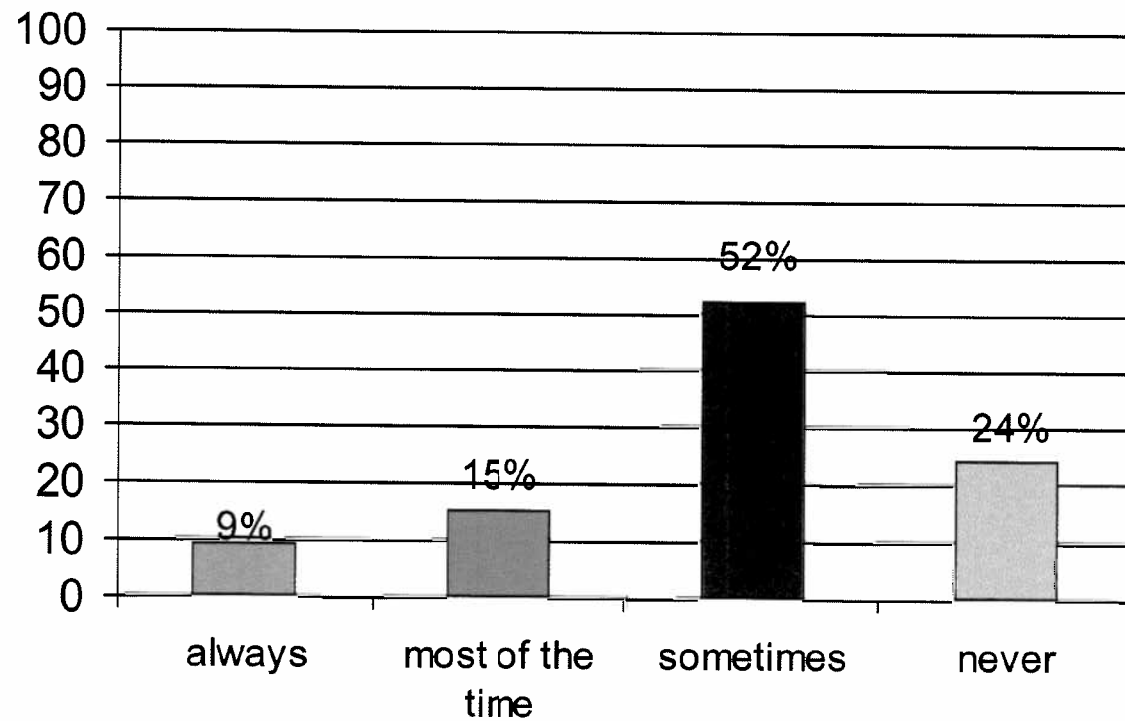
- Art 8 – 12
 - Geriatrician
 - Head nurse & (geriatric) nurses
 - Social nurse/assistant
 - Physiotherapist
 - Occupational therapist
 - Psychologist
 - Speech therapist
 - Dietician

Care program for the geriatric patient

- Art. 15 geriatric day hospital
 - < GP or specialist
 - diagnosis, therapy and rehabilitation
- Art. 16-19 internal liaison
 - multidisciplinary geriatric approach and expertise outside geriatric unit
 - reference nurse for geriatric care
 - identify patient > 75 y with geriatric profile
 - call internal liaison team

The geriatricians take part in the decision making
to ADMIT a patient > 75 y on the ICU.

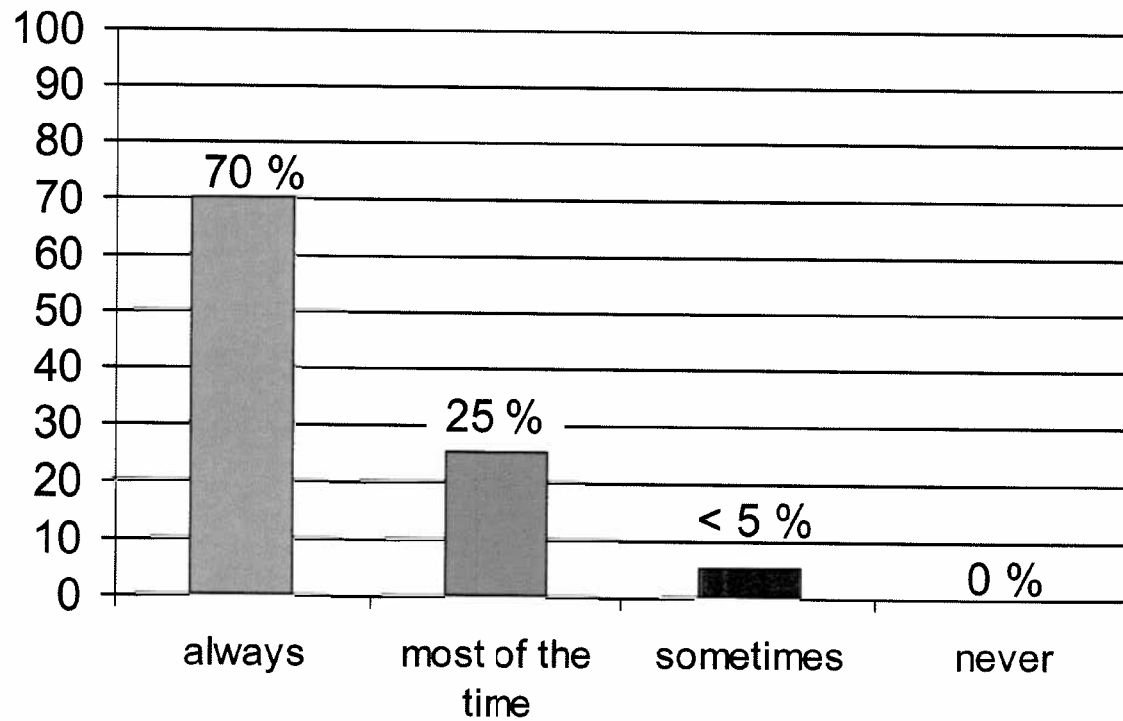
(= There is a protocol)



Mean 2.91

The geriatricians take part in the decision making
for a patient > 75 y on the ICU.

There is a care program!



Patient Specific Questionnaire

Social anamnesis.

Information (score) on	yes	no
cognitive status	100 %	0 %
autonomy	100 %	0 %
nutritional status	100 %	0 %
Does the patient have relatives	95 %	5 %
Normal frequency of visits	90 %	10 %
Supportive care for the patient	83 %	17 %

Conclusions

- Geriatric patients = geriatric approach
= comprehensive geriatric assessment
 ↓
 - treatment plan
 - advance care planning
- ICU: pro or con ?
 - avoid futile treatment
 - ... but don't withhold utile treatments because of age!
 - better outcome?
 - better use of resources?