

POSSUM - preoperative risk assessment, managing treatment, level of care and length of stay



Wilhelmina Ekström, MD, PhD

Karolinska Institute

Karolinska University Hospital, Department of Orthopedics, Stockholm, Sweden

wilhelmina.ekstrom@karolinska.se



KAROLINSKA
Universitetssjukhuset

What you want to know before starting surgery

- How well is the patient prepared for the operation ?
- Are there any risk for complications ?
- Can we offer an adequate level of care for the patient ?
- Do we have the necessary staff competence ?



POSSUM

- =Physiological and Operative Severity Score for enUmeration of Mortality and morbidity
- Graham Copeland 1996
- Methodology for assessing clinical performance against the expected outcome for the case-mix
- Calculating the risk for every patient as an individual



POSSUM instrument

POSSUM sheet for physiological score

SCORE	1	2	4	8
Age (yrs)	<60	61 - 70	>71	
Cardiac signs	Normal	On Cardiac drugs or steroid	Oedema Warfarin	JVP
CXR			Borderline cardiomegaly	Cardio megaly
Resp. signs	Normal	SOB Exertion	SOB stairs	SOB rest Any other change
CXR		Mild COAD	Mod COAD	
SYSTOLIC BP (mmHg)	110 - 130	131 - 170	>171	<89
Pulse (/min)	50 - 80	81 - 100 40 - 49	101 - 120	>121 <39
Coma Score	15	12 - 14	9 - 11	<8
Urea (mmol/l)	<7.5	7.6 - 10	10.1 - 15	>15.1
Na (mmol/l)	>136	131 - 135	126 - 130	<125
K (mmol/l)	3.5 - 5	3.2 - 3.4 5.1 - 5.3	2.9 - 3.1 5.4 - 5.9	<2.8 >6
Hb g/100ml	13 - 16	11.5 - 12.9 16.1 - 17	10 - 11.4 17.1 - 18	<9.9 >18.1
WCC x10 ¹² /l	4 - 10	10.1 - 20 3.1 - 3.9	>20.1 <3	
ECG	Normal		AF (60 - 90)	Any other change

POSSUM sheet for operative severity score

SCORE	1	2	4	8
Op magnitude	Minor	Inter	Major	Major +
Number of op within 30days	1		2	>2
Blood loss per operation	<100	101 - 500	501 - 999	>1000
Contamination	No	Incised wound ie stab	Minor contam or necrotic tissue	Gross contam or necrotic tissue
Presence of malignancy	No	lo	Node metastases	Distant metastases
Timing of operation	Elec.		Emerg. resus poss <48hrs	Emerg. immed <6hrs



3 month prospective pilot study

- Orthopedic patients at Karolinska Solna
- 428 patients and 485 operations
- 27% emergency
- Follow up after 30 days

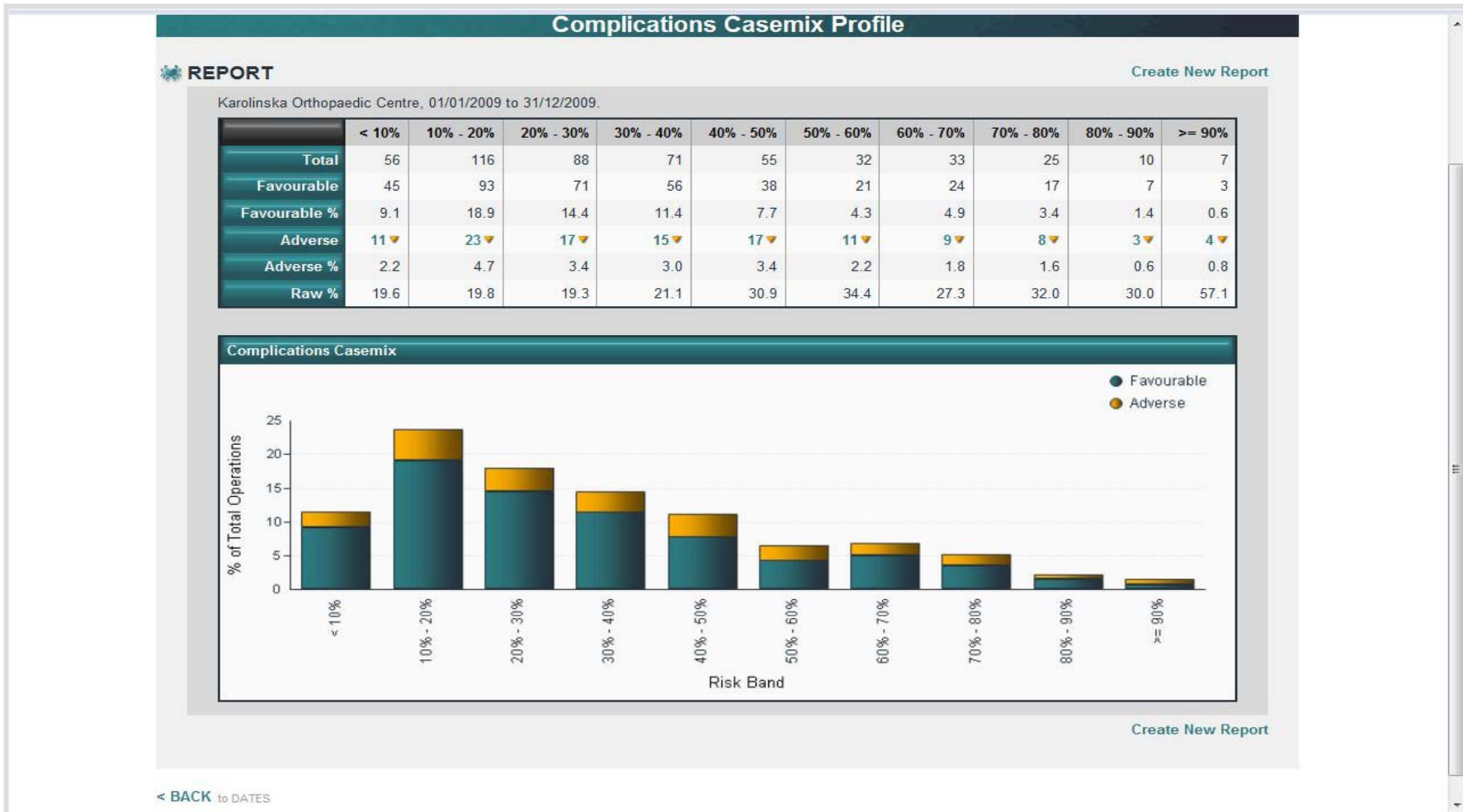


Results

POSSUM	Predicted	Outcome
Mortality	4.8 %	1.1%
Morbidity	27 %	26.2%



Casemix morbidity



Level of care

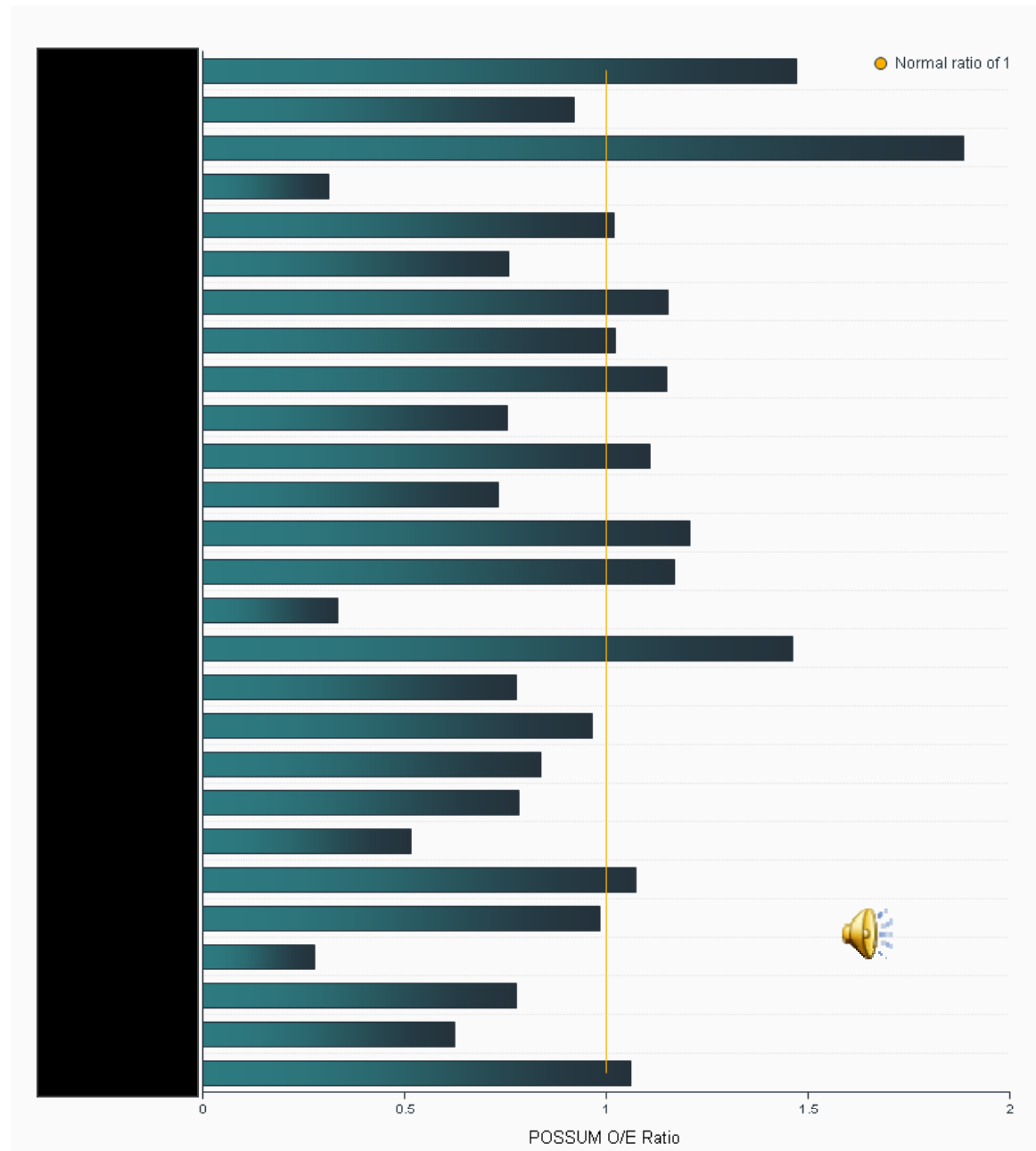
- 11% of the patients had less than 10% risk
(routine care or daily round by internist?)
- 24% of the patients had 10-20% risk
(High Dependency Unit after surgery?)
- 65% of the patients had >20% risk
(Intensive Care Unit after surgery?)



Complications per surgeon

Odds ratio

1 = expected frequency



Results length of stay

The mean length of stay for patients with

- <10% risk score was 7 days
- 10-20% risk score was 19 days
- >20% risk score was 11 days



Conclusion

POSSUM

- can predict complications well and also give a good idea of casemix
- can be useful to plan future level of care
- can deliver constructive information of the staff competence
- information regarding length of stay needs to be further evaluated



Thanks for listening

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