

# Work related stressors and occurrence of Adverse Events in an emergency department

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# Aim

- Investigate the relationship between the occurrence and impact of 12 work related stressors and the occurrence of Adverse Events in an emergency department

## Method

- For a 4 week period every nurse and doctor in the emergency department completed a short questionnaire at the end of each shift
  - Occurrence of 12 different work related stressors [yes/no]
    - If Yes => emotional impact [none/extreme]
  - Involved in any Adverse Events? [describe]

## Participants from the emergency department

	No of persons	Respondents	Participant rate	No of shifts	Reports	Response rate
Nurses, Admission	43	43	100%	554	379	68%
Nurses, Ward	55	53	96%	609	441	72%
Medical specialists	11	8	73%	82	46	56%
Junior doctors	15	15	100%	166	113	68%
<b>Total</b>	<b>124</b>	<b>118</b>	<b>95%</b>	<b>1.411</b>	<b>979</b>	<b>69%</b>

# Occurrence of stressors on shifts

	Medical specialists	Junior doctors	Nurses Admission	Nurses Ward
Work frequently interrupted	67%	39%	56% >	48%
Insufficient opportunity for work planning	38%	14%	25% >	11%
Lack of help and support	37% >	8%	12% >	4%
To busy to do the job in the best way	35%	11%	24% >	14%
Did not complete all work tasks	33%	4%	32% >	14%
Felt insufficiently prepared to handle work tasks	30%	26%	25% >	12%
Bad working relations with other units	26% >	5%	8%	4%
Noise	24%	30%	30% >	13%
Emotionally strainful patients	24% >	8%	11%	11%
Bad working relations within own unit	24% >	9%	8%	6%
Criticized or verbally attacked by others	15%	6%	11% >	5%
Violence or threats of violence	7%	3%	3%	3%

# Emotional impact of stressors

(1-5, 1= none, 3 = somewhat stressful 5 = extremely stressful)

	Medical specialists	Junior doctors	Nurses Admission	Nurses Ward
Violence or threats of violence	3,67	2,33	2,58	2,00
Bad working relations with other units	3,50	2,60	3,00	2,67
To busy to do the job in the best way	3,38	2,75	3,13	3,13
Criticized or verbally attacked by others	3,29	3,14	2,58	2,58
Bad working relations within own unit	3,27	>3 3,60	2,79	2,96
Did not complete all work tasks	3,25	2,20	2,60	2,78
Lack of help and support	3,19	3,22	2,93	2,60
Insufficient opportunity for work planning	3,13	2,53	2,81	2,65
Work frequently interrupted	2,79	2,36	2,86	2,30
Emotionally strainful patients	2,60	2,56	2,68	2,52
Felt insufficiently prepared to handle work tasks	2,54	2,64	2,93	2,82
Noise	2,45	2,71	2,93	2,81

# Reported Adverse Events

- A total of 235 Adverse Events were reported after the 979 shifts
  - 21 were discarded based on the description

	No of AE	Shifts w/ AE	% shifts	Persons w/ AE	% persons
Nurses, Admission	63	52	14%	29	67%
Nurses, Ward	106	83	19%	31	58%
Medical specialists	31	18	39%	5	63%
Junior doctors	14	13	12%	9	60%
<b>Total</b>	<b>214</b>	<b>166</b>	<b>17%</b>	<b>74</b>	<b>63%</b>




# Types of Adverse Events reported

	Reported to us	%
Clinical processes	72	34%
Administrative processes	57	27%
Communication and documentation	47	22%
Medication	30	14%
Other (nonspecific)	7	3%
Medical equipment	1	0%
<b>Total</b>	<b>214</b>	<b>100%</b>



# Types of Adverse Events reported

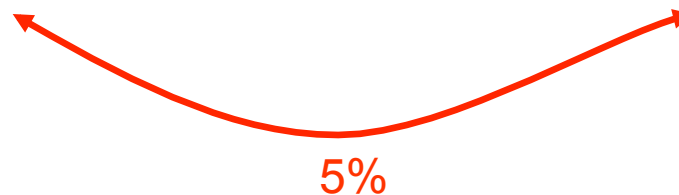
	Reported to us	%	Reported to DPSD	%
Clinical processes	72	34%	13	46%
Administrative processes	57	27%	5	18%
Communication and documentation	47	22%	6	21%
Medication	30	14%	4	14%
Other (nonspecific)	7	3%	0	0%
Medical equipment	1	0%	0	0%
<b>Total</b>	<b>214</b>	<b>100%</b>	<b>28</b>	<b>100%</b>



13%

# Types of Adverse Events reported

	Reported to us	%	Reported to DPSD	%	Reported to both	%
Clinical processes	72	34%	13	46%	3	30%
Administrative processes	57	27%	5	18%	5	50%
Communication and documentation	47	22%	6	21%	1	10%
Medication	30	14%	4	14%	1	10%
Other (nonspecific)	7	3%	0	0%	0	0%
Medical equipment	1	0%	0	0%	0	0%
<b>Total</b>	<b>214</b>	<b>100%</b>	<b>28</b>	<b>100%</b>	<b>10</b>	<b>100%</b>



## How serious were the reported Adverse Events?

- The Adverse Events were risk scored based on actual/potential harm and frequency
  - Done the same way and by the same person who risk scores the officially reported AE
  - Compared to risk scores for the official reported AE from 2007-2011 for the whole hospital

Risk score	Actual (our data)	Actual 2007-2011	Potential (our data)	Potential 2007-2011
1	84%	85%	42%	50%
2	16%	10%	47%	40%
3	1%	5%	12%	10%

## Co-occurrence of stressors, impact and Adverse Events

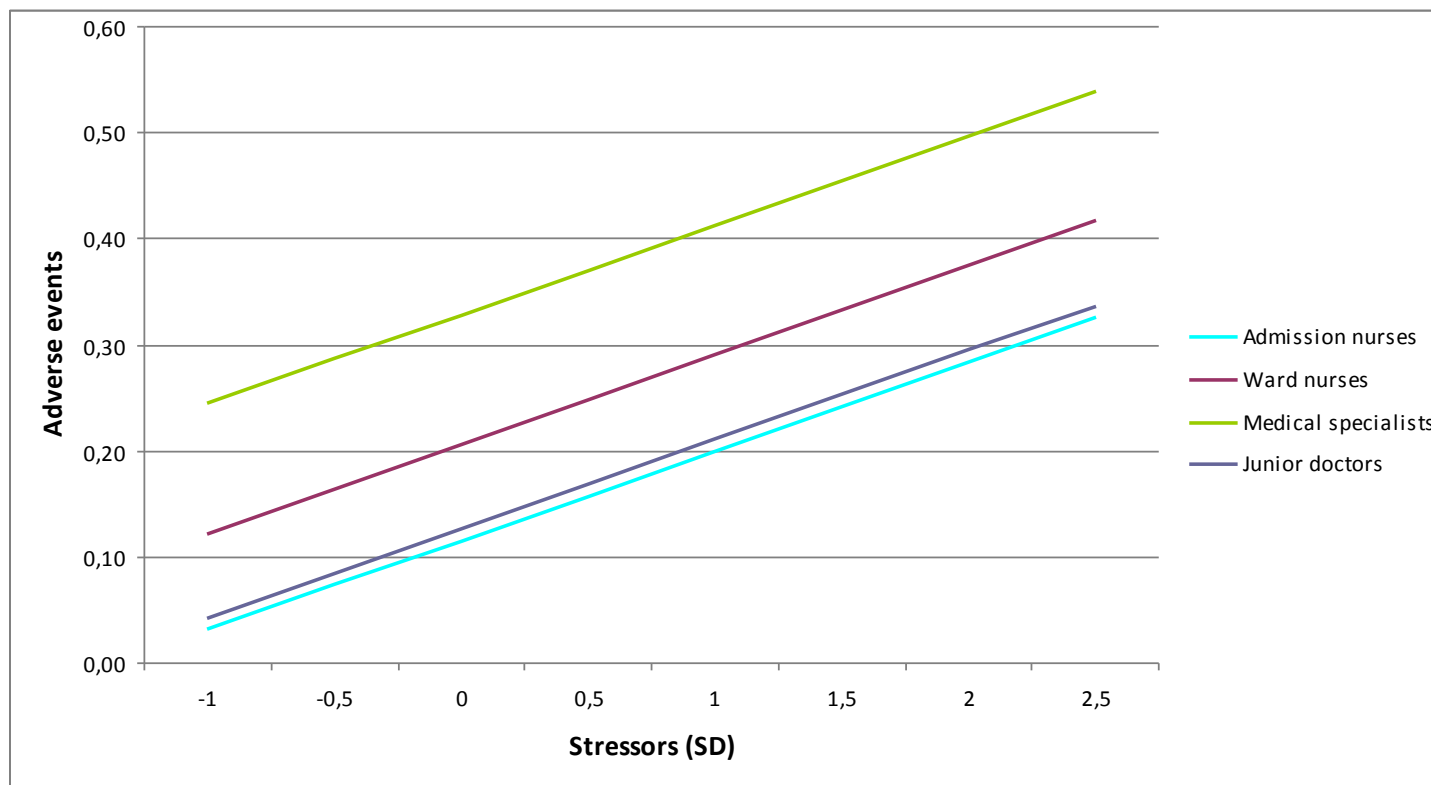
	Stressors (0-12)		Impact (0-60)	
	Shifts without AE	Shifts with AE	Shifts without AE	Shifts with AE
Nurses, Admission	2,14	< 4,29**	5,48	< 11,83**
Nurses, Ward	1,33	< 1,86*	3,06	< 4,76*
Medical specialists	2,93	< 4,56(*)	9,25	< 11,89
Junior doctors	1,51	< 2,54(*)	3,92	< 6,54

(\*) p<0.10

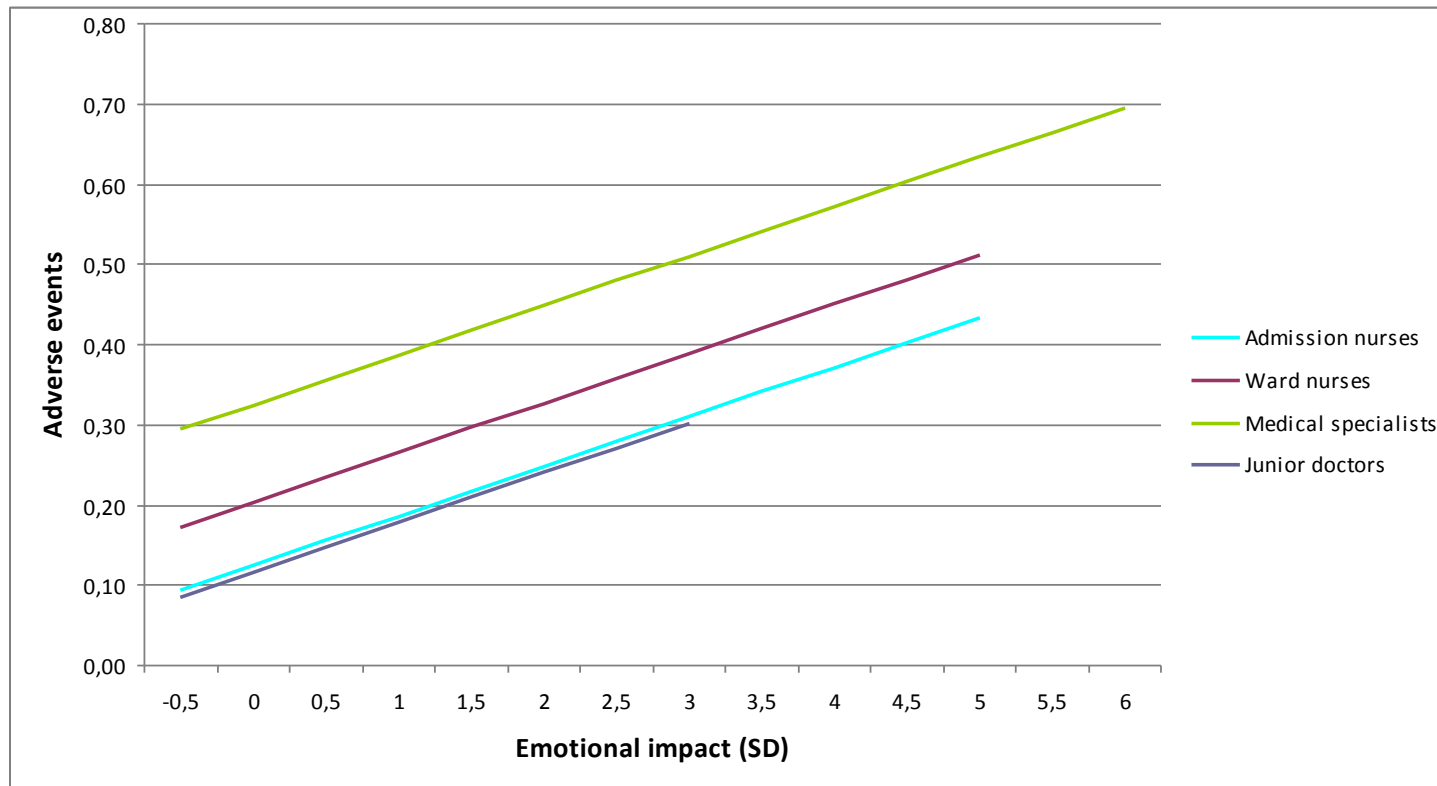
\* p<0.05

\*\* p<0.01

# Linear regression with adverse events and the occurrence of stressors



# Linear regression with adverse events and the emotional impact of stressors



# Conclusions

- The majority of Adverse Events are not reported to the official reporting system
  - We found more than 7 times as many adverse events than the official reporting system, and only 5% of these were reported
- The 4 different groups of nurses and doctors had different exposures to work related stressors
  - And also rated different stressors as the ones with the highest emotional impact
- However all groups show an association between the occurrence and impact of work related stressors and involvement in Adverse Events



# Limitations

- Stressors and adverse events are reported at the same time in the same questionnaire
  - Potential reporting bias
  - Only associations – not causality
- Adverse Events also underreported in our material
  - Only 10 of 28 from the official system
  - Potentially biased outcome measure
- Few data from medical specialist and junior doctors
  - Uncertain estimates for these groups (although trends were similar to nurses)

Thank you for your attention!

Questions?

[www.amkherning.dk/patientsikkerhed](http://www.amkherning.dk/patientsikkerhed)