PATIENT SAFETY INCIDENTS

HUS

Differences between Serious and Non-Serious Patient Safety Incidents in the Largest Hospital District in Finland*

Introduction

The current scientific view on human error emphasizes the system approach, according to which working environments and organizational processes are such that errors are expected. In addition, working procedures at all levels of the organization drift towards procedures that are more likely to cause errors. Therefore, organizations must have processes through which procedures are monitored, incidents are responded to and lessons are learned and, finally, future events are anticipated.

A serious incident is an event that leads to substantial, serious or permanent harm to patient, causes serious danger to the life or safety of the patient, or is a patient safety incident concerning a large group of patients. Serious incidents form a small but significant fraction of safety incidents and it is important to study their nature and prevalence.

Objectives

To determine if and in what ways serious patient safety incidents differ from non-serious patient safety incidents.

Methods

All Finnish hospital districts use a common system for reporting patient safety incidents (HaiPro). Data consisted of HaiPro reports generated in the Helsinki and Uusimaa (HUS) district in 2015. HaiPro reports were divided into two groups: non-serious incidents and serious incidents. Groups were created during 2016/3/3. To determine how non-serious incidents and serious incidents differed in their nature, the number of reports in each category (e.g. type of incident: *Medical equipment or its operation*) was compared between the groups using a Chi-squared test. The results from the main categories were the focus of this study. A cut-off p value of 0.05 was used to evaluate statistical significance.

Results

Of the total amount of reports (15,863) 1 % were serious incidents (175). Serious and non-serious incidents differed significantly from each other. The greatest proportion of the serious incidents took place in patient rooms (non-serious 4,284 [27%], serious 60 [34%], $p < 0.05$) and operating rooms (non-serious 801 [5%], serious 26 [15%], $p < 0.05$). Doctors filed a greater proportion of serious incidents (non-serious 763 [5%], serious 28 [16%], $p < 0.05$). However, in both groups, nurses filed the reports most often.

The most common type of serious incidents was *Laboratory, imaging or other tests* (non-serious 2,754 [18%], serious 41 [23%], $p < 0.05$) followed by *Other treatment or monitoring* (non-serious 1,282 [8%], serious 26 [15%], $p < 0.05$). The most common non-serious incident was *Medication, infusion, blood transfusion, contrast medium* (non-serious 5,900 [38%], serious 25 [14%], $p < 0.05$). The most common consequence for the unit in serious incidents was *Extra work, minor extra treatment* (non-serious 8,084 [52%], serious 118 [67%], $p < 0.05$). In addition a statistical difference was seen in *Harm to unit image, Longer stay of care, and Extra costs*.

In serious incidents, contributing factors were better recognized, the most common being *Handling of procedures* (non-serious 2985 [19%], serious 62 [35%], $p < 0.05$).In addition more common in serious incidents were *Training, orientation and skills*, followed by *Medical device and equipment.*

It seems that employees' attitudes towards serious incidents differ from non-serious, and this should be further studied.

Conclusion

In the future, special attention should be given to the particular aspects of serious patient safety incidents, such as the safe use of medical equipment, training and handling of procedures. In addition, the reasons for the differences between serious and non-serious incidents should be further studied. Root cause analysis is an effective way to handle serious incidents and enables the prevention of their reoccurrence. However, a systematic follow-up of the root cause analysis should be developed.

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**Jämsä JO et al. Differences between Serious and Non-Serious Patient Safety Incidents in the Largest Hospital District in Finland. J Healthc Risk Manag. 2018 Jan 10. doi: 10.1002/jhrm.21310*

Type of incident	non-serious, n, %		serious, n, %		p value
Medication, infusion, blood transfusion, contrast medium	5,900	37.6	25	14.3	< 0.001
Information transfer and handling, communication	3,659	23.3	31	17.7	0.081
Laboratory, imaging or other tests	2,754	17.6	41	23.4	0.043
Other treatment or monitoring	1,282	8.2	26	14.9	0.001
Medical equipment or its operation	880	5.6	23	13.1	< 0.001
Accident	696	4.4	15	8.6	0.009
Other	637	4.1	12	6.9	0.063
Violence	311	2.0	11	6.3	< 0.001
Asepsis/hygiene	264	1.7	1	0.6	N/A
Physical surroundings	233	1.5	3	1.7	N/A
Invasive procedure	214	1.4	10	5.7	< 0.001
Surgical operation	174	1.1	6	3.4	N/A
Diagnosis	101	0.6	4	2.3	N/A
Radiotherapy	74	0.5	0	0.0	N/A
Not known	32	0.2	0	0.0	N/A
First aid environment	16	0.1	0	0.0	N/A

Table presents the division of reports among type of incident for non-serious and serious incidents. (n = number of reports, % = percentage of reports compared to total within group)

Serious and non-serious patient safety incidents differ significantly

Contributing factors	non-serious, n, %		serious, n, %		p value
Not known	4,001	25.5	15	8.6	< 0.001
Handling of procedures	2,985	19.0	62	35.4	< 0.001
Communication and information transfer	2,772	17.7	28	16.0	0.564
No contributing factors, normal situation	2,181	13.9	23	13.1	0.773
Environment, facilities, resources	1,777	11.3	19	10.9	0.845
Training, orientation and skills	1,212	7.7	27	15.4	< 0.001
Patient and relatives	665	4.2	17	9.7	< 0.001
Medical device and equipment	601	3.8	23	13.1	< 0.001
Teamwork	489	3.1	18	10.3	< 0.001
Organization, management	121	0.8	12	6.9	< 0.001
Medication	81	0.5	3	1.7	N/A

Table presents the division of reports among contributing factors for non-serious and serious incidents. (n = number of reports, % = percentage of reports compared to total within group)