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ORIGINAL ARTICLE

General practitioners' attitudes toward reporting and learning from adverse events: Results from a survey

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Abstract
Objective. To investigate GPs' attitudes to and willingness to report and learn from adverse events and to study how a reporting system should function. *Design*. Survey. *Setting*. General practice in Denmark. *Main outcome measures*. GPs' attitudes to exchange of experience with colleagues and others, and circumstances under which such exchange is accepted. *Subjects*. A structured questionnaire sent to 1198 GPs of whom 61% responded. *Results*. GPs had a positive attitude towards discussing adverse events in the clinic with colleagues and staff and in their continuing medical education groups. The GPs had a positive attitude to reporting adverse events to a database if the system granted legal and administrative immunity to reporters. The majority preferred a reporting system located at a research institute. *Conclusion*. GPs have a very positive attitude towards discussing and reporting adverse events. This project encourages further research and pilot projects testing concrete reporting systems.

Key Words: *Adverse effects, attitude of health personnel, family practice, general practice, medical errors, risk management, safety management*

Quality improvement based on adverse events is widely used in high-risk industries like aviation and nuclear industries [1]; it is increasingly used in hospitals [2,3] and it is now also gaining ground in primary healthcare [4–19].

The purpose of analysing adverse events is to minimize the number of factors that may contribute to the occurrence of adverse patient outcomes. Pilot projects in general practice reported 5–80 report adverse events per 100 000 consultations [18]. According to Danish law, hospital staff must report adverse events confidentially to the county councils who gather reports and pass them on anonymously to a national database. The definition of an adverse event in Danish law is:

> *An adverse event shall mean an event resulting from treatment by or stay in a hospital and not from the illness of the patient.* [20]

This study investigates GPs' attitudes to and willingness to report and learn from adverse events and studies how a reporting system should function. Finally, we analyse whether acceptance of event reporting was linked to GP or practice characteristics.

Worldwide, there is an increasing use of quality improvement based on learning from adverse events.

- GPs are positive towards discussing events in the clinic with colleagues and staff and in their continuing medical education groups (CME groups).
- GPs are positive towards reporting to a database provided that the system grants legal and administrative immunity to reporters.

Material and methods

Three focus-group interviews including 17 GPs were used to develop a structured questionnaire. Details

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of the focus-group interviews are reported in another paper [21]. The interviews confirmed that adverse events do occur in primary healthcare [21].

Asking 63 questions, the questionnaire addressed four themes in the handling of adverse events: what information to report, how, to whom, and by whom. We were allowed to use 22 questions from a previous survey in Danish hospitals undertaken by the DSI, the Danish Institute for Health Services Research [22]. The questionnaire was tested among the 20 members of staff at our institution and among 10 GPs teaching at the Specific Training Programme for General Practice. It was also discussed with three GPs and three members of the staff at a lunch meeting in a multipractice. Questions were answered on a five-point agree/do not agree scale. The structured questionnaire was sent to a random sample of Danish GPs. Non-respondents were sent one reminder. The questionnaires were scanned optically and analysed statistically in Stata 8.2 and approved by the Danish Multipractice Study Committee. A chi-squared or Fisher's exact test was used to compare variables depending on dataset characteristics. $P < 0.05$ was considered statistically significant. Missing answers were excluded from the calculations; we show numbers of subjects answering the single item when addressed.

Results

The questionnaire was sent to 1198 GPs. Seven were later excluded (three due to interest in this project, one due to long-term sick leave and three due to retirement). Response was obtained from 727 individuals, 463 men and 261 women, 3 with missing information regarding sex (response rate 61%).

Handling adverse events

Three-quarters of the GPs felt that patient safety would be improved if a reporting system was established, provided the physician would not risk exposure to public contempt or to sanctions due to reporting; 79% of the GPs had a positive attitude to reporting to a database. Women, however, seemed more prone to report adverse events than men, and young persons (<50 years) were more prone than older persons (≥ 50 years) (Table I). The confidence intervals between the groups are, however, overlapping.

About three-quarters expected that a reporting system and a subsequent discussion would enhance job satisfaction. However, 19% agreed somewhat or strongly that a reporting system would make it more difficult to be a GP (see Table I).

Table I. GPs' attitudes towards systematic quality improvement through analysis of adverse events.

Survey question	All n = 727	Males <50 years n = 118	Males ≥50 years n = 345	Females <50 years n = 139	Females ≥50 years n = 121	p-values for sex and age
I am positive (regarding systematic reporting to a database ed.) provided that the physician cannot be exposed or punished for reporting an adverse event	575	95	264	121	93	0.048
	79%	81%	77%	88%	78%	
	[76%; 82%]	[72%; 87%]	[72%; 81%]	[81%; 93%]	[69%; 85%]	
A reporting system for adverse events would enable more openness among colleagues about medical errors	526	82	241	106	95	0.109
	73%	69%	70%	77%	79%	
	[69%; 76%]	[60%; 78%]	[65%; 75%]	[69%; 84%]	[71%; 86%]	
The GP's job satisfaction would improve if a forum for structured analysis and discussion of critical events existed	520	84	245	99	90	0.865
	72%	71%	71%	72%	75%	
	[68%; 75%]	[62%; 79%]	[66%; 76%]	[63%; 79%]	[66%; 82%]	
A reporting system would make it more difficult to be a GP	137	31	68	21	16	0.056
	19%	26%	20%	15%	14%	
	[16%; 22%]	[19%; 35%]	[16%; 24%]	[10%; 22%]	[8%; 21%]	

Figures show respondents' answers (strongly or somewhat agree) in numbers, percentage, and with confidence intervals. Percentages calculated after exclusion of missing answers.

More than 60% thought that other GPs could often or sometimes learn from their own experiences of adverse events (Table II). Males and GPs above 50 years of age tended to be more sceptical.

In which contexts did the GPs wish to discuss and analyse adverse events?

Table III shows that around three-quarters of all responding GPs were positive towards establishing a concrete reporting system. Only 46% were interested in establishing a special group to discuss adverse events. Most would use feedback from a central database for discussion in the CME group, or in the clinic. Young women in partnership practices were the most positive.

Anonymous or confidential reporting system

In total, 66% of the responding GPs (n = 696) would accept the reporting of adverse events anonymously while 80% (n = 698) would accept reporting confidentially to a recipient who knows, but conceals, the identity of the reporter. A third model, the conditionally confidential model, was acceptable to 35% of the responders (n = 692). In this model the recipient knows the name of the reporter, which will only be passed on in case of the reporter's breach of the relevant act. We also asked about reporting model preferences: 30% preferred to report anonymously, 54% confidentially, and 10% preferred conditional confidentiality. Some 6% did not know which model they preferred (n = 713).

Reporting to whom?

In total, 41% would agree to report to the National Board of Health, 19% to the National Health Insurance authorities, and 91% would prefer to report to a research institution.

What to report

The majority (56%) of the responding GPs (n = 710) were in favour of reporting events based on their own judgement combined with a recommended list of adverse events that should preferably be reported. However, 2% preferred obligatory reporting based on a list of events that must be reported, while 7% preferred reporting based on the individual GP's judgement. A combination of obligatory reporting and reporting based on the individual GP's judgement was preferred by 35%.

Table II. GPs' experiences with and learning from adverse events.

Survey question	All n = 727	Males < 50 years n = 118	Males ≥ 50 years n = 345	Females < 50 years n = 139	Females ≥ 50 years n = 121	p-values for sex and age
I have experienced adverse events in my clinic that have made me change my procedures	290 40% [37%; 44%]	42 36% [27%; 45%]	133 39% [33%; 44%]	62 46% [37%; 54%]	51 43% [34%; 53%]	0.318
I have changed my conduct and routines based on other GPs' experience with adverse events	306 43% [39%; 47%]	51 44% [34%; 53%]	137 40% [35%; 45%]	63 47% [38%; 56%]	52 45% [36%; 55%]	0.507
Other GPs could learn from my experience of adverse events	429 61% [58%; 65%]	72 62% [53%; 71%]	189 56% [51%; 61%]	99 76% [68%; 83%]	67 60% [50%; 69%]	0.001

Figures show respondents' answers (strongly or somewhat agree) in numbers, percentage, and with confidence intervals. Percentage calculated after exclusion of missing answers.

Table III. Basic attitude questions related to gender, age, and practice type among the 727 respondents.

				Gender					Age				
		All		Male		Female			<50 years		≥50 years		
		n = 727		n = 463		n = 261			n = 258		n = 466		
Subject of interest	Question	n	Yes (%)	n	Yes (%)	n	Yes (%)	p-value	n	Yes (%)	n	Yes (%)	p-value
Where do the GPs wish to discuss and analyse critical events	In my own practice with other GPs [1,2]	538	99	292	99.7	204	99.0	0.571^	199	99.5	297	99.3	1.000^
	In my own practice with the staff[2]	696	94	444	93.9	250	94.8	0.633	250	97.6	444	92.3	0.004
	In my usual CME group[2]	689	89	437	87.4	250	90.8	0.178	247	91.5	440	87.1	0.078
	In a special CME group with colleagues of my own choice working with critical events[2]	672	46	432	44.7	238	47.5	0.486	237	48.1	433	44.1	0.321
Consideration is being given to the establishment of a system for reporting critical events to a database with a view to enhancing exchange from experience	I am positive provided that the physician cannot be "exposed" or exposed to penal sanction[3]	724	79	463	77.5	259	82.6	0.105	257	84.4	465	76.8	0.015
General attitude question	Patient safety will be improved if a reporting system is established[3]	722	74.5	461	72.9	259	77.2	0.201	258	75.6	462	74.0	0.646

[1]Only for non-solo respondents. [2]Only positive answers stating "certainly" and "willing" are included under Yes (%). [3]Only positive answers stating "strongly agree" and "somewhat agree" are included under Yes (%). P-value: chi-squared test (except^) Fisher's exact test.

Reports from outside the GP setting

We observed strong or somewhat strong agreement among 61% of GPs (n = 724; 53 answered "don't know") that they should be able to report adverse events in other parts of the healthcare sector. A total of 58% of GPs (n = 724; 44 answered "don't know") strongly or somewhat agreed that hospital physicians should be able to report adverse events in general practice. Finally 56% of the GPs (n = 723; 50 answered "don't know") strongly or somewhat agreed that district nurses should have this opportunity.

Many respondents answered "don't know" and/or used the free text box below these questions. They often stated that the issue should be addressed with caution in order to avoid cooperation problems or that this type of report should only be prepared after having contacted the parts of the healthcare sector involved in the adverse event.

Patients and GPs may disagree in their evaluation of events [23] and it may therefore be interesting to let the patients report on adverse events. We asked the GPs if the patients should have the opportunity to report what they perceive as adverse events and 68% strongly or somewhat strongly agreed with this question (n = 724; 38 answered "don't know"). We also asked whether they thought that patients could provide new knowledge and 62% strongly or somewhat strongly agreed with this question (n = 724; 86 answered "don't know"). A total of 66% strongly or somewhat strongly agreed (n = 723; 50 answered "don't know") that patient reporting could enhance treatment, but fewer found that it would make the patients more satisfied as only 36% strongly or somewhat strongly agreed (n = 722; 51 answered "don't know") and 45% strongly or somewhat strongly agreed (n = 721; 123 answered "don't know") that patient reporting could generate more complaints.

Discussion

GPs held a positive attitude towards quality improvement through analysis of adverse events and were prepared to report and learn from such events locally, regionally, or nationally provided that they did not risk exposure to public contempt or to sanctions. This finding is supported by our focus-group interviews [21] and by an American study also based on focus-group interviews [24]. GPs are less positive, but still quite positive towards reporting by other parts of the healthcare sector, including patients. The GPs also expected a reporting system of adverse events to enhance openness concerning the fact that GPs do make errors and they expected that it would improve their job satisfaction if they had a forum where they could discuss and analyse adverse events. This indicates that a well-organized and well-functioning reporting system is expected to enhance quality of treatment for the patients as well as GPs' professional quality of life. The GPs were in fact already using their experience from adverse events to change conduct and 60% felt that other GPs could benefit from their experience.

It is remarkable that young female GPs in partnership practices were generally most positive, but the differences between age, sex, and practice type were largely small and insignificant.

This study is based on thematized questions generated in previous exploratory focus-group interviews, and it is, as far as we know, the first study of its kind addressing GPs' attitudes towards quality improvement based on analysis of adverse events. The survey respondents may be expected to be those GPs who are most interested in quality improvement and/or aspects regarding GPs' working conditions. This may have biased our results and the response rate was only 61%. We have no data on non-responding doctors.

Our analysis shows that, besides the clinic, the existing CME groups in Denmark are a suitable forum for analysis and discussion of adverse events. This observation is supported by a Danish pilot study [25], which emphasized the need for a structured process, preferably supported by a supervisor. It is also in line with international findings [6,7,19]. The alternative, to create a special CME group for discussion of adverse events, however, was supported by 46%.

Our respondents preferred reporting to a research institution and were sceptical about reporting to the National Board of Health and especially to the National Health Insurance authorities. American focus-group interviews show the same trend [24].

Interestingly, 80% were willing to report adverse events confidentially while 66% could accept anonymous reporting. This may indicate high trust in confidential reporting. An American study found that both confidential and anonymous reporting supply valuable knowledge on adverse events, but the latter mode produced more information and allowed detailed coding and deeper understanding of the critical processes that may lead to adverse events [26]. The American focus-group study found that reporting should be anonymous [24], a difference that may be due to differences in culture, legal systems, and patient complaint systems.

The GPs prefer reporting based on their own judgement in combination with some guidance on what to report. Previous pilot projects have usually been designed to let the GPs report what

they themselves conceive as adverse events [4,6, 16,18,25–30].

Most of the GPs approve of patients' reporting of what they perceive as adverse events and they believe that patient reporting gives new knowledge and may contribute to improved treatment. At the same time almost half of the respondents agreed or agreed strongly that giving the patients this opportunity would generate more complaints to the National Board for Patients' Complaints, which indicates that such reporting may have a negative impact on the GPs' job satisfaction.

In conclusion, the results show a clear positive attitude towards quality improvement through analysis of adverse events. The results encourage concrete research and pilot projects on GP reporting with the ultimate goal of establishing a feasible reporting system that should also be based on experiments from other countries and contexts.

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References

[1] Barach P, Small SD. Reporting and preventing medical mishaps: lessons from non–medical near miss reporting systems. BMJ 2000;320:759–63.
[2] Reducing error. Improving safety. BMJ 2000;320:725–814.
[3] Patient safety methodology. Qual Saf Health Care 2003;12: ii1–ii72.
[4] Bhasale AL, Miller GC, Reid SE, Britt HC. Analysing potential harm in Australian general practice: An incident-monitoring study. Med J Aust 1998;169:73–6.
[5] Bhasale A. The wrong diagnosis: identifying causes of potentially adverse events in general practice using incident monitoring. Fam Pract 1998;15:308–18.
[6] Westcott R, Sweeney G, Stead J. Significant event audit in practice: A preliminary study. Fam Pract 2000;17:173–9.
[7] Britt H, Miller GC, Steven ID, Howarth GC, Nicholson PA, Bhasale A, et al. Collecting data on potentially harmful events: A method for monitoring incidents in general practice. Fam Pract 1997;14:101–6.
[8] Dovey SM, Meyers DS, Phillips RL Jr, Green LA, Fryer GE, Galliher JM, et al. A preliminary taxonomy of medical errors in family practice. Qual Saf Health Care 2002;11:233–8.
[9] Elder NC, Dovey SM. Classification of medical errors and preventable adverse events in primary care: A synthesis of the literature. J Fam Pract 2002;51:927–32.
[10] Ely JW, Levinson W, Elder NC, Mainous AG III, Vinson DC. Perceived causes of family physicians' errors. J Fam Pract 1995;40:337–44.
[11] Fischer G, Fetters MD, Munro AP, Goldman EB. Adverse events in primary care identified from a risk-management database. J Fam Pract 1997;45:40–6.
[12] Britten N, Stevenson FA, Barry CA, Barber N, Bradley CP. Misunderstandings in prescribing decisions in general practice: Qualitative study. BMJ 2000;320:484–8.
[13] Holden J, O'Donnell S, Brindley J, Miles L. Analysis of 1263 deaths in four general practices. Br J Gen Pract 1998;48: 1409–12.
[14] Gandhi TK, Sittig DF, Franklin M, Sussman AJ, Fairchild DG, Bates DW. Communication breakdown in the outpatient referral process. J Gen Intern Med 2000;15:626–31.
[15] Wilson T, Smith F, Lakhani M. Patient safety in primary healthcare – an overview of current developments in risk management and implications for clinical governance. J Clin Govern 2002;10:25–30.
[16] Dovey SM, Phillips RL, Green LA, Fryer GE. Consequences of medical errors observed by family physicians. Am Fam Physician 2003;67:915.
[17] Dovey SM, Phillips RL, Green LA, Fryer GE. Types of medical errors commonly reported by family physicians. Am Fam Physician 2003;67:697.
[18] Sandars J, Esmail A. The frequency and nature of medical error in primary care: Understanding the diversity across studies. Fam Pract 2003;20:231–6.
[19] Geboers H, van der Horst M, Mokkink H, van Montfort P, van den Bosch W, van den Hoogen H, et al. Setting up improvement projects in small scale primary care practices: Feasibility of a model for continuous quality improvement. Qual Health Care 1999;8:36–42.
[20] Law number 546 of 24 June 2005 (in Danish).
[21] Mikkelsen TH, Rubak JM, Olesen F. Praktiserende lægers holdninger til rapportering af og læring fra utilsigtede hændelser – erfaringer fra fokusgruppeinterview [General practitioners' attitudes toward reporting and learning from adverse events: Experiences from focus-group interviews]. Ugeskr Laeger 2004;166:1766–9.
[22] Hermann N, Andersen HB, Schiøler T, Madsen MD, Østergaard D. Rekommandationer for rapportering af utilsigtede hændelser på sygehuse. [Recommendations for reporting Adverse Events in Hospitals]. Copenhagen: DSI Danish Institute for Health Services Research; 2002.
[23] Fagerberg CR, Kragstrup J, Stovring H, Rasmussen NK. How well do patient and general practitioner agree about the content of consultations? Scand J Prim Health Care 1999; 17:149–52.
[24] Beasley JW, Escoto KH, Karsh BT. Design elements for a primary care medical error reporting system. WMJ 2004; 103:56–9.
[25] Thorsen T. Utilsigtede hændelser – Evaluering af et kvalitetsudviklingsprojekt i almen praksis. [Adverse events – Assessment of a quality improvement project in general practices]. Copenhagen: TT-analyse; 2004.
[26] Fernald DH, Pace WD, Harris DM, West DR, Main DS, Westfall JM. Event reporting to a primary care patient safety reporting system: A report from the ASIPS collaborative. Ann Fam Med 2004;2:327–32.
[27] Runciman WB, Edmonds MJ, Pradhan M. Setting priorities for patient safety. Qual Saf Health Care 2002;11:224–9.
[28] Makeham MA, Dovey SM, County M, Kidd MR. An international taxonomy for errors in general practice: A pilot study. Med J Aust 2002;177:68–72.
[29] Vincent C, Stanhope N, Crowley-Murphy M. Reasons for not reporting adverse incidents: An empirical study. J Eval Clin Pract 1999;5:13–21.
[30] Kohn T, Corrigan JM, Donaldson MS, editors. To err is human: Building a safer healthcare system. Washington, DC: National Academy Press; 2000.