

Advancing patient safety in Sri Lanka: Strengthening incident reporting systems through global experience

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Abstract

Incident reporting and learning systems are central to patient safety because they make hazards, adverse events and near misses visible and allow organisations to identify recurring system weaknesses. This review examined published literature and official guidance on incident reporting in South-East Asia and selected higher-performing health systems, with particular attention to lessons applicable to Sri Lanka. A thematic review was undertaken using the supplied literature matrix and official documents from the World Health Organization, the National Health Service in England and national safety bodies in Australia and other comparator countries. The analysis identified eight interrelated themes: a just and non-punitive culture; simple and accessible reporting; inclusion of near misses; structured classification and prioritisation; timely feedback; leadership and workforce capability; national aggregation and learning; and patient and family involvement. Evidence consistently shows that reporting volume alone is not a measure of safety. The value of a reporting system depends on whether reports are analysed, translated into proportionate action, communicated back to staff and monitored for sustained improvement. Sri Lanka should therefore strengthen its existing approach through a phased, nationally coordinated electronic system linked to local investigation, feedback, learning alerts and governance oversight. Implementation should begin with a limited minimum dataset, clear definitions, protection for reporters, staff training and measurable feedback standards. Pilot testing in selected hospitals should precede national scale-up.

Keywords: Patient safety; Incident reporting; Adverse events; Near misses; Just culture; Organisational learning; Sri Lanka

1 Introduction

Patient safety incidents are unintended or unexpected events that could have, or did, result in harm during healthcare. They include harmful incidents, no-harm incidents, near misses and identified risks. Reporting these events is not an end in itself. Its purpose is to create reliable organisational intelligence, support investigation and enable preventive action. The World Health Organization (WHO) emphasises that incident reporting and learning systems should be designed primarily for learning and risk reduction rather than for estimating the true incidence of harm, because voluntary reports are affected by awareness, culture and reporting behaviour (WHO, 2020).

Under-reporting remains a persistent global problem. Common barriers include fear of disciplinary consequences, uncertainty about what should be reported, time pressure, complex forms, weak electronic infrastructure, lack of feedback and limited confidence that action will follow. A systematic review by Aljabari and Kadhim (2021) found that fear of consequences was the most frequently reported barrier, followed by lack of feedback and an unsupportive work

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climate. Similar barriers have been identified in medication-error reporting, including unclear definitions, managerial responses and individual professional concerns (Afaya, Konlan and Kim Do, 2021).

Sri Lanka has established quality and patient-safety structures within the public health system, but reporting practice remains variable between institutions. The supplied local literature indicates that reporting is often paper based, more visible for selected non-clinical events and constrained by fear of blame and shame. A sustainable national system must therefore address culture, workflow and leadership as well as technology. International experience is useful because it demonstrates how local reporting can be combined with national learning, legal or policy protection, structured analysis and feedback.

The aim of this review was to identify the principal characteristics of effective hospital incident reporting and learning systems in South-East Asia and selected comparator countries, and to propose feasible directions for strengthening the Sri Lankan system.

2 Literature review

Healthcare is a complex adaptive system in which outcomes arise from interactions among patients, staff, technology, clinical processes, organisational conditions and the wider health system. Incidents rarely result from a single careless act. Human factors, workload, communication, task design, equipment, staffing and environmental conditions frequently interact. Consequently, modern patient-safety practice focuses on contributory factors and system improvement rather than individual blame.

The WHO International Classification for Patient Safety provides a common conceptual framework that links incident type, patient outcomes, contributory factors, organisational outcomes and actions taken to reduce risk (WHO, 2009). Harm severity can be classified from no harm to death, while preventability can be assessed separately. These classifications help organisations prioritise investigations and compare patterns, although they should not replace clinical judgement.

Root cause analysis and related systems-based methods are commonly used after serious or recurrent events. Their value depends on the quality of the investigation and the strength of resulting actions. Weak actions, such as reminders or one-off education, are less reliable than redesigning processes, simplifying tasks, standardising equipment, improving staffing arrangements or introducing forcing functions. Proactive methods such as failure mode and effects analysis can complement retrospective reporting by identifying vulnerabilities before harm occurs (Ullah et al., 2022).

The literature matrix supplied for this review showed that medication-related events are commonly reported and that reporting behaviour is influenced by safety culture, leadership, teamwork, training and the work environment. Studies also highlight emerging approaches, including patient engagement, trigger tools, artificial intelligence and integrated patient-safety monitoring systems. However, digital sophistication cannot compensate for a punitive culture or a failure to provide feedback.

3 Methods

A structured thematic literature review was conducted. The source material comprised the supplied spreadsheet of patient-safety studies, the draft review document and official guidance or webpages from international patient-safety organisations. Literature addressing incident reporting, patient-safety culture, barriers and enablers, medication errors, leadership, feedback, digital systems, patient engagement and organisational learning was considered.

English-language systematic reviews, integrative reviews, original studies and authoritative guidance documents were included. Studies were not restricted by clinical specialty or professional group. Sources with no clear relevance to incident reporting or system learning were excluded from the thematic synthesis. The review was narrative rather than a formal systematic review; therefore, no pooled effect estimate or risk-of-bias assessment was undertaken.

The documents were read repeatedly and coded for recurring concepts. Related codes were grouped into broader themes. Country-level systems were then compared according to reporting scope, reporter protection, electronic accessibility, national coordination, investigation and feedback mechanisms, and links with governance or accreditation.

4 Overview of selected international systems

4.1 United Kingdom

The National Health Service (NHS) in England developed the National Reporting and Learning System and is replacing it with the Learn from Patient Safety Events service. The newer service provides a single national mechanism for recording and analysing patient-safety events and supports the capture of harmful incidents, near misses, future risks and examples of good care. National data are used to identify recurring risks and support wider learning, while local organisations remain responsible for response and improvement (NHS England, 2024).

4.2 Denmark

Denmark is recognised for nationwide reporting of adverse events, local case handling and strong protection of the learning purpose of reports. Healthcare professionals and patients or relatives can report events. Reports are handled locally and transmitted in anonymised form for national learning. The approach illustrates the importance of separating learning processes from disciplinary processes wherever possible.

4.3 Australia

Australian guidance places incident management within clinical governance. Health services are expected to identify, report, review and learn from incidents, near misses and adverse events, involve patients and families appropriately, and use findings to improve systems. Incident management is also linked to national accreditation standards, creating organisational accountability for reporting and learning (Australian Commission on Safety and Quality in Health Care, 2021).

4.4 Canada and New Zealand

Canadian systems are mainly provincial, with emphasis on disclosure, local learning and patient engagement. New Zealand uses a national learning-oriented approach, including review of serious events and publication of learning. Both systems demonstrate the value of transparent communication and patient-centred investigation, while also showing that national consistency must be balanced with local operational responsibility.

4.5 United States, the Netherlands and Sweden

The United States has multiple mechanisms, including Patient Safety Organizations and specialty reporting systems, but the decentralised structure can fragment learning. The Netherlands and Sweden are frequently cited for strong safety culture, transparency and integration of reporting within hospital governance. Across these systems, the recurring success factors are accessibility, protection, leadership, analysis and feedback rather than any single software platform.

5 Results

The thematic analysis produced eight broader themes. Representative evidence and codes are shown in Table 1.

Table 1 Thematic Coding of Literature on Incident Reporting and Patient Safety

Article/source	Codes	Broader theme
WHO (2020); Aljabari and Kadhim (2021)	Fear of punishment; blame; shame; work climate	Just culture and reporter protection
Afaya, Konlan and Kim Do (2021); Hamed and Konstantinidis (2021)	Unclear definitions; managerial response; negative consequences	Clear policy, definitions and psychological safety
NHS England (2024); Australian Commission (2021)	National electronic capture; simple access; standard dataset	Accessible electronic reporting and national aggregation
Goekcimen et al. (2023); Khalid et al. (2022)	High reporting volume; medication incidents predominate	Reporting patterns and priority risk areas
Azyabi, Karwowski and Davahli (2021); Lee, Lee and Sang (2023)	Teamwork; organisational learning; effective leadership	Leadership and safety culture

Zhang, Liao and Luo (2022); Prihatiningsih et al. (2025)	Training improves attitudes and safety performance	Workforce capability and continuous training
Newman et al. (2021); Goldman et al. (2025)	Consultation; partnership; accessible and culturally safe mechanisms	Patient and family engagement and equity
Pierdevara, Porcel-Gálvez and Eiras (2025); Alizadeh-Dizaj et al. (2025)	Trigger tools; monitoring systems; combined detection methods	Multiple data sources and proactive surveillance
Beecham et al. (2025); WHO (2020)	Near-miss under-reporting; lack of feedback; time pressure	Timely feedback and learning loops
Ullah et al. (2022); WHO (2009)	Contributory factors; prospective risk assessment; severity	Structured analysis and proportionate response

The eight discussion themes were developed from the thematic coding presented in Table 1, with related and overlapping codes combined into broader practical themes.

5.1 Just culture and protection from blame

Fear of punishment was the most consistent barrier across settings. Staff are less likely to report when they believe that a report will automatically lead to disciplinary action, reputational damage or conflict with managers. A just culture does not mean absence of accountability. It distinguishes human error, at-risk behaviour and reckless behaviour, and it ensures that incident review is primarily directed towards learning. Clear policy should specify when information may be used for disciplinary or legal processes and when confidentiality can be maintained.

5.2 Easy reporting and a minimum dataset

Reporting systems should be easy to access, quick to complete and available to all relevant staff. Long forms discourage reporting, particularly of near misses. A minimum dataset should capture what happened, where and when it happened, actual or potential harm, immediate action, incident category and key contributory factors. Additional detail can be gathered during follow-up. Mobile-compatible and offline-capable options may be needed in settings with variable connectivity.

5.3 Near misses and weak signals

Near misses occur more frequently than serious harm events and provide opportunities to learn before injury occurs. Systems that focus only on deaths or severe incidents lose valuable information about emerging risks. Reporting guidance should therefore include clear examples of near misses, unsafe conditions and positive safety actions.

5.4 Analysis, prioritisation and strong corrective action

Not every report requires a full investigation. Incidents should be triaged according to harm, potential severity, recurrence, preventability and wider system relevance. Serious, recurrent or high-potential events require multidisciplinary systems-based review. Actions should be specific, assigned to accountable persons, time limited and monitored. Where possible, stronger controls such as process redesign, standardisation and engineered safeguards should be preferred over warnings or education alone.

5.5 Feedback and visible learning

Lack of feedback discourages future reporting. Reporters should receive acknowledgement and proportionate updates. Clinical units should receive regular summaries of themes, actions and outcomes, while national bodies should issue alerts or recommendations where risks extend beyond one organisation. Closing the loop is essential: staff must be able to see that reporting leads to change.

5.6 Leadership, staffing and workforce capability

Leadership behaviour shapes safety culture. Managers who respond respectfully, protect staff from unfair blame and allocate time for review encourage reporting. Training should cover definitions, how to report, immediate patient protection, disclosure, contributory-factor analysis and action planning. Adequate staffing and attention to burnout are also relevant because workload and emotional exhaustion affect both safety performance and willingness to speak up.

5.7 Patient and family involvement

Patients and families may identify communication failures, delays and dignity-related harm that are not visible in staff reports. Reporting and concerns mechanisms should be accessible, culturally safe and available in relevant languages. Involvement should extend beyond complaint handling to participation in review and co-design of improvements where appropriate.

5.8 National coordination with local ownership

A national database can identify patterns that are invisible to individual hospitals, but central collection alone does not create learning. Hospitals need clear local responsibility for immediate action, investigation and feedback. National oversight should focus on standard definitions, data quality, cross-institutional analysis, safety alerts, benchmarking of processes and dissemination of effective solutions.

6 Discussion

The findings indicate that effective incident reporting is a socio-technical system. Technology is important, but reporting performance depends equally on trust, leadership, workforce capacity, investigation quality and feedback. High numbers of reports may reflect a positive safety culture rather than poor care, whereas low reporting may indicate fear or system inaccessibility. Macrae (2016) cautions that incident-reporting systems can generate large quantities of data without necessarily producing safer care unless organisations develop the capacity to interpret reports, investigate patterns and implement effective changes. Measures of success should therefore include the proportion of near misses reported, timeliness of review, feedback completion, action closure, recurrence of priority incidents and evidence of improvement.

For Sri Lanka, a direct replication of a complex high-income-country system would be neither necessary nor sustainable. A phased model is more feasible. Initially, the Ministry of Health could define a national minimum dataset and taxonomy aligned with WHO concepts, introduce a simple electronic reporting module, and retain a paper or offline contingency. Selected hospitals could pilot the system, with multidisciplinary patient-safety teams reviewing reports and sending monthly learning summaries to clinical units.

The reporting pathway should separate immediate clinical management from subsequent learning review. Serious incidents should trigger timely escalation and appropriate disclosure to patients and families. Less severe events and near misses should be grouped for thematic analysis. Evidence from intensive-care reporting systems shows that reporting becomes largely administrative when analysis, feedback and improvement actions are weak (Brunsveld-Reinders et al., 2016). A small national team could aggregate de-identified data, identify recurring hazards and issue concise learning alerts. Existing quality-management meetings and hospital governance structures could be used rather than creating a parallel bureaucracy.

Implementation should also address fairness and confidentiality. Staff should be informed that deliberate harmful conduct and reckless violations remain accountable, but ordinary error and good-faith reporting will be managed through a just-culture approach. The National Health Service Patient Safety Incident Response Framework supports compassionate involvement, proportionate responses and systems-based learning rather than routine investigation of every event (NHS England, 2022). Training for medical, nursing, allied health, administrative and support staff is essential. Leaders should be assessed not only on the number of reports submitted but also on feedback quality, action completion and demonstrated reduction of recurrent harm.

7 Recommendations

The proposed framework for incident reporting in healthcare in Sri Lanka should include the following.

- Governance: establish standard guidelines, various modes of reporting mechanisms, confidentiality provisions, legal protection (not to produce the information at the court of law), escalation thresholds and accountability for feedback.
- Simple reporting channels: provide a short electronic form with mobile access, supported by paper or offline alternatives during the transition.
- Minimum information model: record incident type, location, date, actual and potential harm, immediate action and key contributory factors (reporters name should never be included).

- Local triage and learning: require designated multidisciplinary teams to screen reports, protect patients, select proportionate review methods and monitor actions.
- National aggregation: collect de-identified data for trend analysis, national safety alerts and shared learning.
- Feedback standards: acknowledge reports promptly and provide unit-level learning summaries at least quarterly.
- Just-culture implementation: train leaders to distinguish human error, at-risk behaviour and reckless conduct, and protect good-faith reporters from unfair blame.
- Patient and family access: create channels for patients and carers to report concerns and participate in relevant reviews.
- Measurement: monitor reporting access, near-miss reporting, review timeliness, action completion, feedback, repeat incidents and staff perceptions of psychological safety.
- Phased scale-up: pilot, evaluate and refine the model before national implementation.

8 Limitations

This was a narrative thematic review based on a supplied literature matrix and selected official sources. It did not use a registered systematic-review protocol, exhaustive database search, duplicate screening or formal risk-of-bias assessment. Country systems also differ in legal framework, financing, workforce and digital maturity; therefore, apparent good practice must be adapted to the Sri Lankan context. Some studies in the source matrix addressed broader patient-safety culture rather than incident reporting alone, but they were retained where they clarified important organisational determinants.

9 Conclusion

A high-performing incident reporting and learning system is characterised by a just and non-punitive culture, simple reporting, inclusion of near misses, structured classification, proportionate investigation, timely feedback, strong leadership, patient involvement and national learning. The principal lesson from international experience is that collecting reports is only the beginning. Reports must lead to analysis, action, communication and sustained improvement. Sri Lanka can strengthen its current arrangements through a phased nationally coordinated model that uses a limited dataset, protects good-faith reporters, builds local analytical capacity and closes the feedback loop. Success should be judged by learning and reduction of recurrent risk, not merely by the number of forms submitted.

Compliance with ethical standards

Disclosure of conflict of interest

No conflict of interest to be declared

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