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the BRIEFING

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The implementation of Safety Management Systems in healthcare
A systematic review and international comparison

Safety is a priority in healthcare - and any industry where failures or errors could have serious consequences for people or the environment.[1] In other safety-critical industries, such as aviation, safety has been improved by taking a systems approach, operationalised in the form of *safety management systems* (SMS).[1,2] An SMS is an organised approach to managing safety and is generally considered to have four key components: leadership commitment and safety policy, safety risk management, safety assurance, and safety promotion and culture.[1-4]

This is a summary of a systematic review which investigated and compared how SMS, or the components of an SMS, have been implemented in healthcare in countries beyond the UK. This review is intended to inform NHS patient safety policy and practice, by drawing on the experience of other countries.

We found that:

- only the Netherlands had introduced a national patient safety programme explicitly based on a high-risk industry SMS approach,
- the main components of an SMS were identified, to varying extents, in the patient safety policies and initiatives of other countries included in the review, and
- other concepts from wider *safety science* had influenced patient safety approaches in all countries.

These findings suggest there is no single most effective approach to patient safety, and highlight the need for adaptations to context.

Safety Management System:
a systematic approach to managing safety, including the necessary organisational structures, accountabilities, responsibilities, policies and procedures.

Exeter HS&DR Evidence Synthesis Centre

We are one of two research groups in the UK commissioned by the National Institute of Health Research HSDR (Health Services Delivery Research) Programme to conduct syntheses of evidence about the organisation and delivery of healthcare (Project NIHR130538). The views expressed are those of the authors and not necessarily those of the NHS, the NIHR or the Department of Health and Social Care.

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What is this review about?

This review investigated the application of safety management systems (SMS) to patient safety in terms of effectiveness, implementation and experience.

What evidence did we include?

We included publications from five countries:

- Australia
- Canada
- Ireland
- New Zealand
- The Netherlands.

Publications could be policy documents, research and evaluations, and other evidence (e.g. narratives of staff and patient experience).

They had to look at national or regional policies, initiatives, or programmes in the included countries which related to the key components of an SMS.

Finding the literature: We searched the websites of patient safety organisations in each included country for publications and had conversations with experts from these organisations. We also searched three bibliographic databases for studies and the citations and reference lists of included studies.

Study selection and data extraction: Studies were screened for inclusion by two reviewers, who then carried out data extraction.

We mapped included evidence onto an initial analytical framework based on analysis of SMS in high-risk industries and made comparisons between countries. We also shared drafts with the experts identified above for comment.

What did we find?

Fifty-three publications were included in the review. As described in the table below, these included descriptions of each country's approach to patient safety (mainly policy documents) and evidence on the impact and implementation of a specific patient safety approach (mainly research papers and reports).

Country	Type of document			Total
	Policy	Research	Other*	
Netherlands	2	20	2	24
Australia	3	2	0	5
Canada	5	2	0	7
Ireland	7	1	0	9
New Zealand	9	0	0	8

*Such as opinion papers.

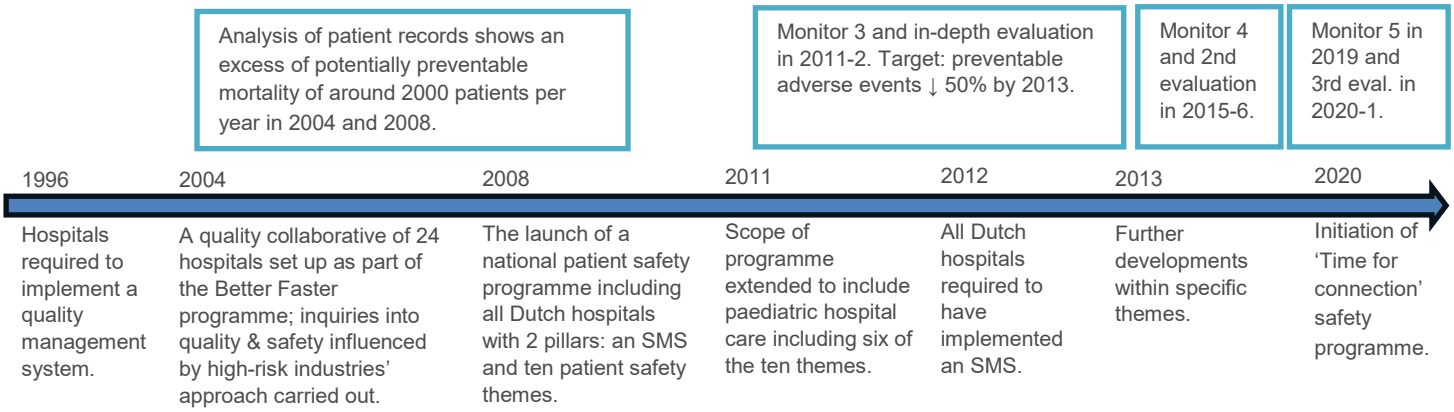
Netherlands

The Netherlands was the only country to have implemented a patient safety programme, called 'Prevent harm, work safely', in which there was a strategic and system-wide approach to using SMS to address patient safety . The Dutch programme was set up by key stakeholder organisations, building on previous safety initiatives. It included all Dutch hospitals, which were required to implement an SMS and guidelines for ten specific areas of patient safety (safety themes).

The SMS were implemented in two phases: (i) involved the development of basic requirements (e.g. leadership, risk assessment), and (ii) added additional requirements to make the system more comprehensive (e.g. management of third party activity in hospitals). Later developments introduced ideas from a Safety-II perspective (e.g. learning from success as well as incidents and failures).

The themes were based on priority areas for safety (e.g. patient mix-up). Guides describing structure, processes and outcomes were developed for each theme, expert groups convened, and interventions presented and explained during national theme conferences. Resources and patient-facing materials were also made available on the programme's website.

Timeline of the implementation of the Dutch patient safety programme 'Prevent harm, work safely'



Impact and factors affecting implementation

Multiple studies looked at the impact of the Dutch programme. Patient records were monitored over time to see if there were changes in preventable adverse events (harm to patients that could have been avoided such as medication errors) and mortality. An in-depth evaluation assessed the implementation of the themes. The programme aimed to reduce potentially preventable adverse events and mortality by 50%.[5] After statistical corrections (e.g. to take patient mix into account), the target was not met but a decrease was seen in preventable adverse events. Implementation varied across the ten themes and between hospitals and departments, with staff, organisational and factors related to the topic of the theme influencing success. These included: the enthusiasm of the theme lead, the availability of people and resources, management involvement, the connection between a topic and existing guidelines, and the scientific evidence providing the backing for a theme.

Australia

The federal government mandates patient safety through the National Safety and Quality Health Service (NSQHS) Standards, developed by the Australian Commission for Safety and Quality in Health Care. State and territory governments are responsible for the implementation of the Standards in their own health systems.

Canada

The Canadian Quality and Patient Safety (CPQS) Framework was launched in 2020 and has five goals. However, whilst it provides guidance at a national level, the responsibility for delivering health services lies with the province or territory, with each having different requirements and legislation.

Ireland

The Health Information and Quality Authority developed the National Standards for Safer Better Healthcare in 2012, replacing them with a principles-based approach in 2021. The Health Service Executive developed a national patient safety strategy building on the standards, intended for implementation at the local level.

New Zealand

New Zealand's patient safety policy is currently undergoing a period of change, with a new Clinical Governance Framework in the process of consultation. The new framework emphasises a systems approach to safety and the importance of empowering and meeting the needs of underserved groups.

Comparison

Only the Netherlands adopted a patient safety approach explicitly using SMS. However, the components of an SMS were seen to some extent in the patient safety approach of the other four countries. There were similarities between the countries in:

- Leadership commitment to patient safety.
- National patient safety policy (separately or as part of a wider quality improvement policy).
- Systems to allow safety incidents to be reported and investigated, with learning from investigations used to improve patient safety.
- Risk management, drawing on multiple sources of evidence (e.g. local as well as national and international research).
- Monitoring of patient safety performance; national-level indicators were common and monitoring at local level less clear.
- Focus on safety culture, taking different forms reflecting local circumstances.
- Patients' and families' involvement, both in the development of policies and at the local level.
- A broad focus on creating a blame-free culture, where staff could openly report, discuss and learn from experience, both negative (incidents and near misses) and positive (what works well).

Whilst these features were seen in each country, there were differences in the way that they were implemented. The scope of the patient safety approach also varied in:

- A separate focus on safety or inclusion in other management areas (e.g. quality improvement).
- Setting of the SMS (e.g. the patient safety programme in the Netherlands only applied to hospital care, whilst patient safety in the other countries included all healthcare settings).
- National patient safety approaches (Netherlands and Ireland) vs regional implementation of national standards (Canada and Australia), or transitioning to a national system (New Zealand).

Finally, the countries drew on a range of concepts from both high-risk industries (beyond SMS) and from broader safety science and related fields.

What are the implications of this review?

There has been a shift from the view that healthcare needs to adopt a high-risk industry approach to safety, and increasing recognition that healthcare and high-risk industries share an interest in the same field - safety science. With this change, there has been acknowledgement of the need to learn from positive experiences as well as failures. However, few countries considered the measurement of impact when implementing their approaches. New initiatives should consider monitoring and evaluation from their outset. Additionally, the findings of this review indicate that for a patient safety approach to be successful, it needs to be adapted to its context.

View the project report online:

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