

# Implementatie VMS Veiligheidsprogramma



Evaluatieonderzoek  
in Nederlandse ziekenhuizen

# Implementation of the Dutch National Patient Safety Programme (VMS Veiligheidsprogramma)

## Evaluation research in Dutch hospitals

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## Summary

### Core findings

- The levels of implementation of the ten clinical topics have improved
- There are large differences between hospital departments in the extent to which they comply with the guidelines given by the National Patient Safety Programme
- The perceived complexity of a topic (single-discipline or multidisciplinary) influences the degree of implementation
- Providing numerical insights into the results of each topic and giving feedback to care professionals are essential for the successful implementation of a topic
- Provision of customised care to patients sometimes makes a compliance rate of 100% undesirable

Over recent years, the Dutch hospital sector has worked systematically towards improving patient safety in care provision. In addition to initiatives concerning legislation and regulation, accreditation, quality-driven purchasing and many local initiatives, all Dutch hospitals committed to implement the National Patient Safety Programme ‘Prevent harm, work safely’ (in Dutch: VMS Veiligheidsprogramma ‘Voorkom schade, werk veilig’). This five-year programme (2008 – 2012) was initiated after the first national review of patient records, studying adverse events and potentially preventable deaths in Dutch hospitals (De Bruijne *et al.*, 2007). By implementing and complying with guidelines and interventions for ten clinical topics and implementing a safety management system, the hospitals aimed to work towards reducing potentially preventable adverse events in hospitalised patients over a period of five years. The National Patient Safety Programme’s office supported the hospitals by - among other things - providing training and practical guides with guidelines and interventions for the ten clinical topics.

### Evaluation study design

Implementation goals were formulated by the National Patient Safety Programme for each of the ten clinical topics and published in practical guides for care professionals. An evaluation study was carried out in order to obtain a picture of the extent of implementation of the ten topics. Theories on

quality (Deming, Kaizen, Noland) assume that well-organised evidence-based processes lead to improved patient outcomes. Two topics ('Prevention of surgical site infection' and 'Prevention of sepsis and treatment of severe sepsis') were evaluated using existing recording systems and two topics ('Vulnerable elderly' and 'Optimum care for AMI') were evaluated as part of a large national study of patient record reviews. For the remaining six topics, a longitudinal prospective evaluation study was carried out during the final year of the National Patient Safety Programme (end 2011 – end 2012). Depending on the topic, data was gathered at 2 to 12 data collection moments by means of patient record review, observational research and/or qualitative research based on interviews. The extent of implementation of each of the topics was determined by means of process indicators that focused on compliance with professional standards and guidelines given in the practical guides.

## Results

### Improvement in level of implementation

Over half of the Dutch hospitals (N=49) participated in the evaluation of topics in the large national study into patient record review and the longitudinal evaluation study. These hospitals were randomly selected as far as possible. Like other Dutch hospitals, the selected hospitals had been working on the implementation of the ten topics since 2008. Twenty to 76 hospitals provided data to for existing records databases for the evaluation over time of two clinical topics.

The outcomes of the evaluation study show that the goals that were set in 2008 have been met (or nearly met) for some of the topics. For example, one of the goals of the topic 'Prevention of renal failure induced by contrast agents containing iodine' is to identify all high-risk patients by determining their eGFR before introducing the contrast fluids. The evaluation shows that this goal was achieved for 96% of the patients. The goal for the sub-topic 'Treatment of severe sepsis' has been met in terms of its outcome indicator (i.e. a 15% reduction in hospital mortality). For the topic 'Optimum care for patients with AMI', all hospitals that took part in the study were offering access to a rehabilitation programme by the end of the National Patient Safety Programme, thereby fulfilling one of the topic's goals. For the topic 'Early recognition and treatment of deteriorating patients', the goal was to implement a rapid response system. The evaluation study showed that 17 of the 18 hospitals evaluated had their RRS operational by the end of 2012.

The goals set for other topics have not been met, although these topics are showing increases in the level of implementation over the course of the evaluation study. Screening of vulnerable elderly patients for falls, poor nutrition, physical limitations and delirium showed a significant increase. Within the topic 'Optimum care for patients with AMI', the percentage of patients for whom risk stratification was used to estimate the mortality risk increased significantly. The number of pain measurements on the first day after surgery increased significantly within the topic 'Early recognition and treatment of pain'. In general, the intervention bundle to prevent sepsis was used more often, and in ICU patients the screening bundle to prevent severe sepsis was used more often. With respect to the use of medication reconciliation bundles at hospital admission and hospital discharge, a slightly positive trend was seen; however bundle compliance remained low over the course of the evaluation study.

For some topics, the level of implementation was constant during the research period. Examples of these were 'High risk medication', 'Mix-ups', hydration of high-risk patients in the topic 'Prevention of contrast-induced renal failure' and 'Prevention of surgical site infections'. The degree of implementation differed among the topics. However, for all these topics, the national goals set were not achieved which leaves room for improvement in all hospitals.

### *Differences between hospital departments*

The evaluation research showed large differences between hospital departments in the degree to which they implemented the guidelines and interventions given by the National Patient Safety Programme. This holds for all ten topics. Where some hospital departments show 100% compliance rates with the guidelines for 'Medication reconciliation', 'High risk medication' and 'Mix-ups', other departments comply with the guidelines for only a small percentage of their patients. Because large differences were found in each topic, it is almost impossible to achieve the overall compliance goals at the national level. Non-compliance was sometimes caused by reasons related to the content of the guidelines; when they differed from national and international guidelines, they were not endorsed by all care professionals. In addition, specific situations of individual patients might make deviating from the guidelines both necessary and justifiable.

### **Context**

Interviews were conducted to gain insights into the factors that influenced the extent of implementation and compliance with the guidelines given for the ten topics. Interviewees in the hospitals that took part in the evaluation study expressed the view that successful implementation depends on human, organisational and topic-related factors. Human factors include e.g. the perceived need for the implementation of the clinical topic and factors that concern the implementation team and its leader. When professionals felt that a topic was very urgent and the leader and project team were enthusiastic and competent, implementation was seen as successful more often. Organisational factors include availability of people and resources, management involvement, the implementation process and the availability of recording systems to monitor progress and outcomes of the implementation. The implementation was more often perceived as successful when time and money were made available by management, when the implementation process had a clear approach and division of tasks and responsibilities and when the effects of the implementation were shared. Topic-related factors concern the perceived complexity of a topic, which depended on whether the topic was single-discipline or multi-disciplinary, the connection between a topic and existing projects or guidelines, and the degree of scientific evidence providing the backing for a topic. Topics that were perceived as more successful in the implementation were more often single-discipline and were based on clear, proven and widely accepted guidelines.

### **International comparison**

Other countries have also initiated national programmes to improve patient safety. All these countries indicate that the attention to patient safety has increased because of these programmes. The experience in these countries was also that many of their hospitals are prepared to take part in the programme. When a programme consists of a large number of divergent topics, some topics are more successfully implemented than others. However, few numerical results are available on the topic-specific outcomes of safety programmes. Some countries have produced a picture of the effects of their safety programmes on potentially preventable harm: hospital mortality in Scotland has decreased by 5% and the numbers of 'saved lives' in the US and in Wales have been estimated as 122,000 and 1,100 respectively.

### **Conclusion**

This evaluation research has shown that a large movement for improved patient safety has been put in motion. However, not all clinical safety topics have been embraced by all hospitals to the same extent. Because of this, none of the ten topics has been fully implemented in all Dutch hospitals as yet.

Groups of leaders can be identified for all the topics who have achieved or come close to the topic's target. We can conclude from this that implementation of the topics is possible; however prerequisites have to be met if this is to be achieved. Further facilitation of the implementation of the clinical topics of the National Patient Safety Programme, both within the hospitals and elsewhere is likely to ensure that more hospitals achieve the topic-specific goals.

Over recent years, a culture change has started in healthcare. Hospitals are developing a way of working in which every professional is alert to possible patient risks, safety-related issues are continuously monitored, improved and evaluated, and suboptimal care is openly discussed and corrected. Such a culture change requires time and continuous attention. Continuation of the National Patient Safety Programme, whether in the same form or slightly modified, is therefore of the utmost importance.

**Reference to full report (in Dutch)**

De Blok, C., Koster, E., Schilp, J., Wagner, C. (2013). Implementatie VMS Veiligheidsprogramma. Evaluatieonderzoek in Nederlandse Ziekenhuizen. NIVEL/EMGO: Utrecht/Amsterdam.



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