Conclusions and discussion

Healthcare managers together with healthcare professionals have a central role in ensuring safe care delivery in hospitals. Despite broad agreement on the leading role of managers, no clear consensus exists on how to effectively manage patient safety. In the literature, a wide array of leadership behaviours and management practices has been described with regard to patient safety management (e.g., Parand, Dopson, Renz, & Vincent, 2014; Verschueren, Kips, & Euwema, 2013). Some of these practices and behaviours have demonstrated reductions in adverse events or preventable mortality, but scientific evidence on their effectiveness is often inconclusive (Shekelle et al., 2013). Moreover, safety interventions are never implemented in isolation and their chances of success seem to depend largely on the implementation process and their embedding within the organisation (Singer & Vogus, 2013). Furthermore, attention is predominantly given to managers who show commitment, create awareness and generate an intrinsic motivation in employees (Verschueren et al., 2013). Far less attention has been devoted to hospital managers' role in regulating, monitoring and controlling employee behaviour. Although, the latter more control-oriented approach might be important for patient safety management as well, especially at operational level (Flin & Yule, 2004). Therefore, in this study we shifted the focus towards the broader spectrum of leader behaviours and management practices used to ensure safe care delivery. This dissertation aimed to provide insight into how healthcare managers manage patient safety, why they choose a specific safety management approach and how different management approaches affect healthcare professionals' safety-related attitudes and behaviour as well as patient safety performance. In the following section, we will summarise the main findings by answering the research questions. Subsequently, theoretical as well as methodological issues are discussed. Finally, we offer suggestions for future research and recommendations for practice.

CONCLUSIONS

Conceptualising control- and commitment-based safety management

Our first sub-question addressed the conceptualisation of safety management approaches in hospital care. Elements of both control- and commitment-based management are found to be relevant for managing patient safety. Our results demonstrate, however, that the concepts as described in HRM literature (e.g., Arthur, 1994; Walton, 1985) need to be adapted and refined to specifically fit patient safety management in hospital care. During an iterative process, we combined theoretical insights from HRM literature with empirical evidence derived from semi-structured interviews to come to a reconceptualisation of control- and commitment-based safety management. Figure 1 provides an overview of the sub-dimensions of both management approaches that we identified to be relevant for managing patient safety in hospital care.

Sub-dimension	Definition
Control-based safety management	
Stress the importance of safety rules and regulations	A manager stresses the importance of compliance with safety rules and regulations
Monitor compliance	A manager monitors compliance with safety rules and regulations during care delivery and audits, as well as based on registrations in (electronic) patient records
Provide feedback on (non-) compliance	A manager provides employees with either positive or negative feedback on their compliance with safety rules and regulations and uses formal sanction policies in case of recurrent non-compliance
Commitment-based safety management	
Prioritise patient safety	A manager gives priority to delivering safe care and demonstrates this to employees, both in words and deeds
Show commitment on patient safety	A manager shows determination to ensure patient safety by encouraging employees to deliver safe care to patients, coaching workers in safety behaviours and taking improvement initiatives
Show role modelling behaviour	A manager is a role model for employees in regard to patient safety and practises what he/she preaches
Create safety awareness	A manager attempts to increase consciousness of safety issues by making employees aware of the potential safety risks and deficiencies in their own performance
Encourage participation	A manager encourages employees to take initiative on improving patient safety and to participate in decision-making processes on safety issues

Figure 1 Sub-dimensions of control- and commitment-based safety management

A control-based safety management approach focuses on encouraging appropriate safety behaviours by enforcing compliance and controlling employee behaviour. In the case of patient safety management, this approach is first characterised by managers who stress the importance of compliance with detailed clinical guidelines, protocols and checklists. These safety rules and procedures increase the predictability of care delivery, thereby enabling managers to monitor whether healthcare professionals show adequate safety behaviours. The interviews illustrated that managers monitor compliance during care delivery and safety audits, as well as based on registrations in (electronic) patient records. Based on these monitoring results, employees are provided with feedback on their behaviour. Remarkably, respondents mostly reported feedback on non-compliance, while compliments for adequately following safety procedures were hardly mentioned. In line with this, all of the hospitals included in our qualitative research have formal sanction policies for specific safety issues, allowing them to give employees formal reprimands or even to dismiss someone in the case of recurrent non-compliance.

Commitment-based safety management is, in contrast, targeted at strengthening employees' intrinsic motivation for patient safety by showing true dedication and creating awareness on safety issues. Our results demonstrate that this approach is first

characterised by managers who clearly prioritise patient safety over other organisational domains, such as production. Second, managers try to show genuine commitment to safe care delivery. Respondents described, for example, how they recurrently brought patient safety to employees' attention, coached workers in safety behaviours and continuously looked for opportunities to improve patient safety within their unit. Managers seem also well aware that they are important role models when it comes to patient safety management. Managers who 'walk the talk' may demonstrate what kinds of safety behaviours are expected from employees and may encourage employees to imitate these desired behaviours. In addition, commitment-based safety management is found to be characterised by managers who create awareness of potential safety risks and deficiencies in healthcare professionals own performances. To illustrate, managers discuss safety incidents or near misses during team meeting and they report benchmarking results when they compare their safety outcomes with similar units in other hospitals. Finally, we found that managers try to sharpen employees' sense of ownership for patient safety by actively inviting them to make safety recommendations, to question the feasibility of safety initiatives and to apply their medical expertise to safety matters.

Environmental conditions influence the shaping of safety management approaches

Secondly, we were interested in why hospitals choose a specific safety management approach. Therefore, the second sub-question is: how do internal organisational characteristics and external environmental conditions influence the shaping of safety management approaches in hospital care? Our qualitative research demonstrates that the shaping of safety management approaches is strongly influenced by demands from stakeholders in the institutional environment, competitive mechanisms deriving from the healthcare market as well as internal organisational characteristics. Hospitals face, for example, requirements imposed by the Dutch Healthcare Inspectorate, government initiatives or accreditation committees. Furthermore, the shaping of safety management approaches is influenced by professional norms and regulations, pressure from health insurers that negotiate with hospitals on both quality and price and the public opinion on patient safety in hospital care. All studied hospitals try to balance these directives of external stakeholders with the needs of the organisation and the practical experiences of their own employees. We found that managers always combine elements of control- and commitment-based management when it comes to patient safety management. However, variation in the (perceived) external pressure exerted on hospitals as well as internal organisational characteristics does also give rise to considerable variation in the management approaches adopted across hospitals and departments.

By imposing safety requirements and presenting demands for accountability, influential stakeholders in the institutional and competitive environment (e.g., Dutch Healthcare In-

spectorate, government initiatives, accreditation committees and health insurers) mainly steer managers towards a control-based safety management approach. This research revealed that when managers face concrete and practicable safety requirements that are accompanied by tight external supervision and serious consequences when requisites are not met (e.g., sanctions, fall in production, loss of reputation), they generally experience little room to manoeuvre and a pressing need for compliance. As a consequence, managers frequently choose top-down enforcement and strictly monitor and control healthcare professional behaviours. Especially if healthcare professionals seem to lack the intrinsic motivation to follow safety rules or procedures, for example because they question the practical relevance. Furthermore, our findings indicate that demands for accountability (e.g., performance indicators) are often incorporated in hospital's internal planning and control cycle and discussed during periodic appraisal interviews between ward managers and the board of directors. Ward managers are thus held accountable for the safety performances of their department and will, consequently, enforce appropriate safety behaviours of their employees. The extent to which control-based management practices dominate the safety management approach differs: the greater the pressure that a manager faces, the higher the chance that he or she chooses to monitor and control healthcare professional behaviours rather than relying on employees' intrinsic motivation. Especially in the case of a crisis situation (e.g., following sanctions, serious safety incidents) which requires a hospital to rapidly respond and exhibit decisiveness, managers frequently tighten up the safety rules and procedures, closely monitor employee behaviours, and increase feedback and sanction policies.

In contrast, professionals' dedication to ensure patient safety steers managers towards a commitment-based safety management approach. The hospital workforce is characterised by highly educated, autonomous working professionals who are socialised to constantly pursue error-free and safe care delivery. Accordingly, the managers who we interviewed argue that most healthcare professionals are intrinsically motivated for safety behaviours. This intrinsic motivation can be strengthened by the use of commitment-based management practices, such as raising awareness of safety risks and explaining the relevance of safety practices. Therefore, managers frequently choose a commitment-based management approach if externally imposed safety requirements target a clinically relevant issue and are underlined by strong evidence. Furthermore, this study reveals that when managers experience plenty of room to manoeuvre, they do more frequently opt for commitment-based management practices. This is, for example, the case when safety demands are difficult to put into concrete and controllable regulations, or when they require the specific expertise of healthcare professionals to transform them into practicable safety procedures. To illustrate, 'soft skills' such as speaking up behaviour are hard to enforce, therefore managers mostly try to inspire healthcare professionals to voice their safety concerns or suggestions. Finally, this study illustrates that the shaping of

commitment-based management practices is also motivated by personal preferences of managers and influenced by one's position in the managerial hierarchy. Healthcare managers frequently have a professional background themselves and a commitment-based management approach is considered to be more in line with the way professionals typically interact. Thus, our findings indicate that managers generally prefer a commitment-based safety management approach, but external environmental conditions often steer them more towards a control-based management approach.

The ConCom Safety Management Scale

Gaining insight into the effect of different safety management approaches first requires the ability to measure a management approach. Therefore, we developed a questionnaire for healthcare professionals' perceptions of the safety management approaches used by their direct supervisor, using the sub-dimensions of control- and commitment-based management that were identified in our qualitative research (see Figure 1). The newly developed ConCom Safety Management Scale was tested in a sample of 2,378 nurses working in clinical hospital wards. We also tested a second version of the questionnaire, in which direct supervisors themselves report on the management approaches they put into practice. The latter version was tested in a sample of 302 nurse managers. Psychometric properties of both questionnaires were evaluated using confirmatory factor analysis and reliability estimates.

We first tested the questionnaire concerning nurses' perceptions of control- and commitment-based safety management approaches. Our study provides support for the construct validity and the reliability of this ConCom Safety Management Scale. The factor structure revealed three sub-dimensions for control-based safety management: (1) stressing the importance of safety rules and regulations; (2) monitoring compliance; and (3) providing employees with feedback. Commitment-based management consisted of four sub-dimensions: (1) showing role modelling behaviour; (2) creating safety awareness; (3) showing safety commitment; and (4) encouraging participation. Overall, our final model strongly resembles our theoretical model: only the sub-dimensions 'Prioritise patient safety' and 'Show role modelling behaviour' were found to be one rather than two separate factors. The final 33-item questionnaire showed acceptable goodness-of-fit indices. Construct validity of the scale was further supported by high factor loadings. Our findings suggest that control- and commitment-based safety management are two distinct yet related constructs. The reliability coefficients of the management approaches as well as most of the sub-dimensions (see Table 1) well exceeded the generally accepted criterion of 0.70 for acceptable reliability (Nunnally, 1978). The results did also provide initial evidence that the measurement instrument has the ability to detect variation in nurses' perceptions of the safety management approaches adopted by nurse managers at different departments and to a slightly lesser extent between hospitals. Considerable

congruence was found in the scores of nurses working at the same clinical ward. Findings on the construct validity and reliability were reconfirmed in a cross-validation procedure, providing support for scale stability (DeVellis, 2012).

Table 1 Sub-dimensions of the ConCom Safety Management Scale

	Nurses		Nurse managers	
Sub-dimensions	Items (N)	α	Items (N)	α
Control-based safety management		**.79**		**.72**
Stress the importance of safety rules and regulations	5	.70	5	.60
Monitor compliance	4	.59	4	.56
Feedback on (non-) compliance	3	.64	3	.47
Commitment-based safety management		**.94**		**.82**
Role modelling behaviour	7	.90	5	.56
Create safety awareness	6	.86	6	.77
Leader's safety commitment	5	.90	5	.80
Encourage participation	3	.82	3	.70

Subsequently, we tested the questionnaire in which nurse managers themselves report on the safety management approaches they put into practice. Two items were dropped from the sub-dimension 'Role modelling behaviour' in the initial commitment-based management scale because of high risks of socially desirable answers. Confirmatory factor analysis provided support for the construct validity of the scale measured among nurse managers. Furthermore, although relatively low reliability estimates were found for some of the subscales, acceptable reliability coefficients were found for both manager-rated control- and commitment-based safety management approaches (see Table 1).

In conclusion, our findings support the construct validity of the ConCom Safety Management Scale measured among nurses as well as nurse managers. For both groups of respondents a similar factor structure was found, consisting of seven sub-dimensions that were allocated to either control- or commitment-based safety management; although two items were dropped from the manager version of the questionnaire. Relatively low reliability estimates were found for some of the sub-dimensions (predominantly in the control-based management scale), but the internal consistency of both control- and commitment-based safety management measured among nurses as well as nurse managers were found to be acceptable.

Control- and commitment-based safety management both contribute to healthcare professionals' safety-related attitudes and behaviour

The fourth sub-question addressed the effect of different safety management approaches on healthcare professionals' safety attitudes and behaviour. Our findings indicate that control- and commitment-based safety management both in their own way contribute to healthcare professionals' safety-related attitudes and voice behaviours.

First, positive associations were found between nurses' perceptions of control-based safety management and climate for safety, and between the perceived level of commitment-based management and team psychological safety. If nurses experience that their direct supervisor stresses the importance of safety rules, monitors compliance and provides them with feedback, they consider patient safety to be highly valued. Nurses who perceive that their direct supervisor shows commitment and role modelling behaviour, creates awareness and encourages employees to participate, perceive the environment to be psychologically safe for taking interpersonal risks. Remarkably, we did not find a statistically significant association between commitment-based safety management and climate for safety, neither did we find any indication for a negative relationship between control-based management and team psychological safety.

Furthermore, our findings indicate that if nurses experience high levels of commitment-based safety management they are more willing to engage in problem-focused as well as suggestion-focused voice; although a positive association was only found under certain conditions or indirectly via a mediating variable. The positive relationship between nurses' perceptions of commitment-based management and their willingness to speak up about patient safety concerns is found to be fully mediated by team psychological safety. Thus when nurses experience that their direct supervisor uses more commitment-based management practices, they feel psychologically safer and are, consequently, more willing to take the risks of engaging in problem-focused voice. The positive relationship between nurse-rated commitment-based management and suggestion-focused voice is, in turn, found to be moderated by climate for safety. In other words, high levels of perceived commitment-based management do only significantly relate to suggestion-focused voice when nurses experience that patient safety is (highly) valued within their department. The latter requires managers to use control-based management practices, since healthcare professionals' perceptions of control-based management are positively related to a climate for safety. Our findings do, however, not show a direct or indirect relationship between nurses' perceptions of control-based safety management and their willingness to engage in problem- or suggestion-focused voice. Control-based safety management does not seem to hinder nor facilitate nurses to speak up about safety concerns or to offer suggestions for patient safety improvement.

Role of safety management approaches in ensuring patient safety

At last, we explored the relationship between nurses' perceptions of control- and commitment-based safety management and the perceived level of patient safety within their ward. Results of this study provide support for a positive association between nurses' perceptions of the control-based safety management practices of their direct supervisor and the level of patient safety within the clinical ward. When nurses experience that their direct supervisor stresses the importance of safety rules, monitors compliance and provides them with feedback they tend to evaluate the level of patient safety more positively. No direct relationship was found between nurse-rated commitment-based safety management and nurses' perceptions of the level of patient safety. However, we found indications for an indirect effect of commitment-based safety management on nurses' perceptions of patient safety within the department through the expression of suggestion-focused voice, but only if nurses experience that patient safety is highly valued within their department.

THEORETICAL REFLECTIONS

The main findings of this dissertation reveal different themes that will be discussed in more detail in the following paragraphs. First, we elaborate on the multidimensional nature of control- and commitment-based safety management, followed by the contextualisation of the safety management approaches of nurse managers. Subsequently, the regulatory style of external stakeholders is discussed. Furthermore, a plea is made for reappraising a control-based approach when it comes to managing patient safety. Finally, we discuss the role of nurse managers in safety management.

Safety management requires a multidimensional approach

The findings of this study indicate that patient safety management is a multidimensional construct, consisting of two separate but closely related approaches towards workforce management: control- and commitment-based safety management. The multidimensional character of safety management implies that both management approaches could be adopted independently at the same time. In theory, managers can exclusively focus on either control- or commitment-based management practices. However, in practice all of the studied nurse managers combined elements of both approaches when it comes to patient safety management. This in contrast to a generally accepted thought in HRM literature that organisations primarily rely on either one of the management approaches (Walton, 1985). According to HRM scholars, control- and commitment-based management reflect two radically different views on employee motivation that form the two opposite extremes of a management spectrum (e.g., Arthur, 1994; Walton, 1985). Co-existence of both

approaches might be inevitable during the transitional stage from a traditional control-oriented towards a commitment-based management approach, but is overall considered to be undesirable (Khatri, Baveja, Boren, & Mammo, 2006; Walton, 1985). According to Khatri and colleagues simultaneously adopting elements of both approaches would even result in *"an unstable and inconsistent management approach"* (Khatri et al., 2006, p. 134) which forms a source of confusion for employees. However, our research does not provide any indication for such negative effects in hospitals. It appears that nurse managers consider control- and commitment-based management approaches to be complementary rather than mutually exclusive when it comes to patient safety management. For example, in the case of hospital-acquired infections, nurse managers point out healthcare professionals' role in infection prevention, they create awareness by discussing infection rates, focus attention on relevant safety protocols and procedures, monitor compliance and, simultaneously, set a good example by showing appropriate safety behaviours. Thus in order to prevent hospital-acquired infections, nurse managers adopt control-based management practices in synergy with elements of a commitment-based safety management approach. So in healthcare practice, the management approaches are often intertwined to ensure patient safety. However, results of our factor analysis demonstrate that control- and commitment-based safety management should still be seen as two separate dimensions rather than one broader management approach. Thus, conceptually control- and commitment-based safety management are framed as two separate management approaches that combine into a multidimensional safety management construct. As shown in Figure 2, this multidimensional safety management construct could take any possible combination of control- and commitment-based management practices. Nurse managers could, for example, choose to emphasise commitment-based management practices and combine these with varying levels of a control-based safety management approach. In other situations, managers may prefer to emphasise control-based safety management, or they could choose to balance both management approaches by simultaneously adopting comparable levels of control- and commitment-based management practices.

Contextualising control- and commitment-based safety management

How control- and commitment-based safety management combine varies among hierarchical levels, between different situations as well as over time. Nurse managers' choice to emphasise either one of the approaches, intensively use both control- and commitment-based management practices or (temporarily) put little effort in patient safety management is dependent on contextual features as well as the individual agency shown by a manager (i.e., does the manager have a personal drive to work on patient safety, feel responsible and dare to take a risk by deviating from external safety requirements). Accordingly, we found that the multidimensional safety management approach adopted by a nurse manager varies from situation to situation.

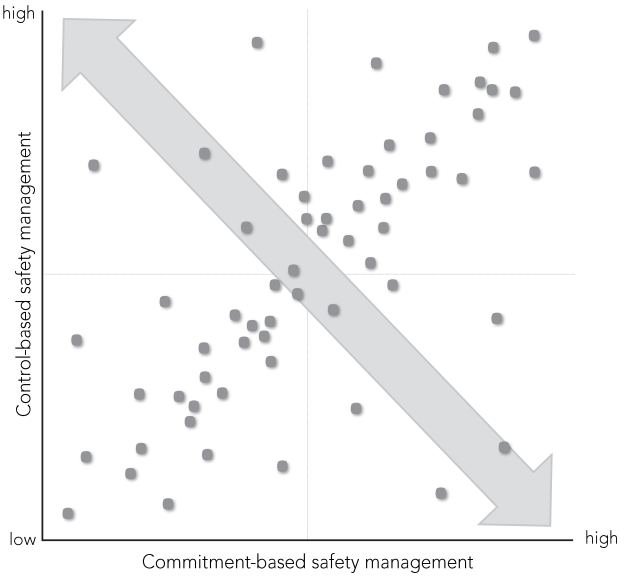

Figure 2 Multidimensional safety management construct
Note: The double arrow represents the theoretical continuum of control- and commitment-based management approaches, whereas the dots stand for the multidimensional safety management approach which could take any possible combination of control- and commitment-based management practices.

Our results indicate that managers at strategic (hospital) level frequently choose to adopt a basis of control-based safety management, whereas nurse managers at operational (ward) level prefer to lay a foundation of commitment-based management practices (see Figure 3). Higher-level managers generally experience greater pressure for public accountability and compliance with the demands from external stakeholders than do their colleagues at operational level. Consequently, they lay emphasis on internal planning and control cycles to monitor whether the imposed safety demands are met and they provide operational managers with feedback. On top of the control-based foundation, higher-level managers often incorporate commitment-based management practices. However, the level of commitment-based management varies considerably, depending on the priority given to patient safety versus other organisational issues and the individual agency shown by a manager. In contrast, nurse managers at operational level generally prefer to adopt a sound basis of a commitment-based safety management approach. These nurse managers frequently have a nursing background themselves and a commitment-based approach is considered to be more in line with the way professionals usually interact (Khatri et al., 2006). On top of the commitment-based foundation, nurse managers use control-based management practices. We found that their choice for control-based safety management is dictated by top-down imposed control mechanisms that seep through the organisation as well as the urgency of safety issues and the motiva-

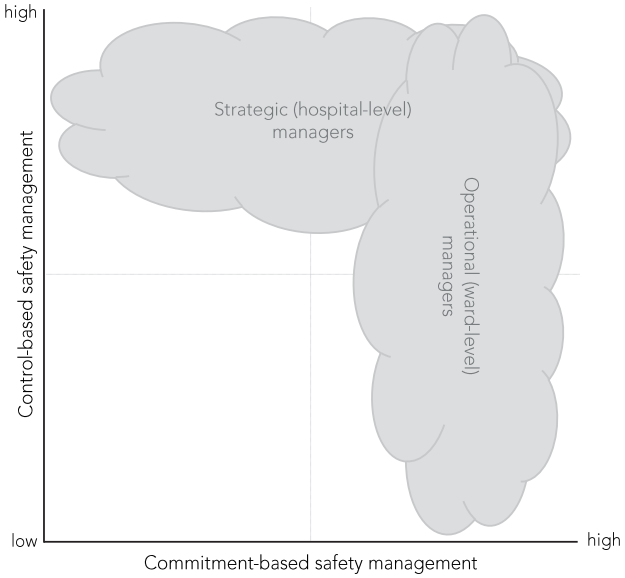

Figure 3 Hierarchical variation in safety management approaches

tion and self-regulating abilities of a manager's subordinates. In line with this, the shaping of the safety management approaches varies among (types of) clinical departments.

Apart from hierarchical differences, the multidimensional safety management approach adopted by nurse managers is found to vary between situations. In fact, managers' choice to give emphasis to control- or commitment-based management practices is not a black-and-white issue. Specific contextual features, characteristics of the safety issues at hand, personal preferences and individual agency shown by nurse managers are all found to influence the shaping of a safety management approach (see Figure 4). Accordingly, a management approach is always customised. Management practices that work in one situation are not necessarily effective in another case; as previously demonstrated in organisational behaviour (Johns, 2006; Johns, 2017), HRM (Paauwe & Farndale, 2017) and patient safety literature (Taylor et al., 2011). According to HRM scholars (Arthur, 1994; Khatri et al., 2006; Walton, 1985), a commitment-based management approach would be best suited to manage complex and ambiguous safety issues in the context of highly-skilled, intrinsically motivated and autonomous working healthcare professionals. However, our results show a more nuanced view. Although nurse managers do indeed reveal a natural tendency towards a commitment-based approach, some situations simply require the use of control-based management practices. This is especially the case when managers want to highlight the critical importance of specific safety issues or behaviours and when they do not have full confidence in the intrinsic motivation of healthcare professionals to naturally show this behaviour. The importance of enforcing particular safety behaviours

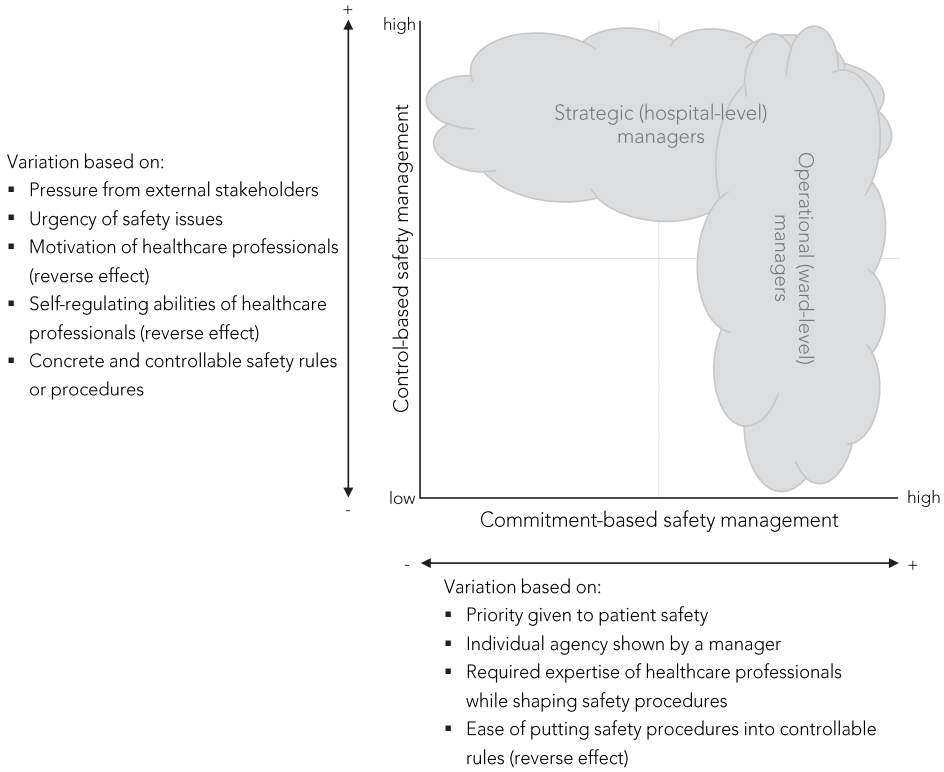

Figure 4 Contextualising a multidimensional safety management approach

may arise from evidence on its effectiveness in ensuring patient safety, the urgency of safety issues (e.g., following a safety incident), or top-down or externally imposed requirements and demands for accountability. However, it should be noticed that adopting a control-based management approach first requires that the relevant safety behaviours are put into concrete and controllable rules or regulations. Despite evidence on its effectiveness (Kirkland et al., 2012), proper hand hygiene is for example still not self-evident in many hospitals (Erasmus et al., 2010). In order to motivate appropriate hand hygiene practices, nurse managers increasingly spell out relevant protocols, monitor hand washing, provide employees with feedback and impose sanctions. Nevertheless, our results show that control-based safety management is always complemented by elements of a commitment-based approach, such as creating awareness of the relevance of hand hygiene for reducing infection rates. Furthermore, when nurses have a strong intrinsic motivation for hand hygiene compliance, nurse managers do not necessarily have to adopt a control-based approach. In that case, emphasising commitment-based safety management practices might be enough to ensure appropriate safety behaviours. If nurses are intrinsically motivated and demonstrate great self-regulating abilities, manag-

ers might even (temporarily) keep both control- and commitment-based management approaches to a minimum. So, equivalent to the situational leadership approach which shows that managers should adjust their leadership style to the level of competence and the commitment of their subordinates (Northouse, 2013), our results suggest that nurse managers should align their choice to emphasise control- or commitment-based management practices with the importance and urgency of safety issues as well as the level of intrinsic motivation (or commitment) of the nurses whom they supervise.

Responsive regulation should trigger both control- and commitment-based safety management

Our results reveal that the safety requirements and demands for accountability from external stakeholders mostly trigger managers to adopt control-based management practices, they hardly give rise to a commitment-based safety management approach. Preferably, the external stakeholders stimulate the use of both management approaches by combining and alternately emphasising different regulatory mechanisms, depending on the importance of the safety issues at hand and the faith placed in the self-regulation abilities of a hospital. This is in line with Healy & Braithwaite (2006) who argued that regulation mechanisms should be responsive to the context and the culture of those being regulated. Hence, variation in regulatory styles might occur over time, between hospitals and even among the departments within a single hospital. The 'regulatory pyramid' recommends regulators to start with trust in the self-regulation capacities of a hospital or department and to escalate into stricter forms of enforcement when safety requirements are not met (Healy & Braithwaite, 2006). In other words, external stakeholders should deliberately target their regulatory style to the specific situation they face. If necessary strictly enforcing compliance, if possible offering managers more leeway; consequently giving rise to both control- and commitment-based safety management approaches. For example, when patient safety is not sufficiently guaranteed a department can temporarily be confronted with extra (unannounced) inspections or stringent supervision, whereas regulators could rely more on an organisations' self-regulating abilities when a department recently received positive evaluations. Remarkably, most of the managers who we interviewed during our qualitative research did not clearly differentiate between the pressures exerted by different stakeholders in the institutional and competitive environment. In fact, they lumped together the majority of the external pressures under the same heading and typically perceived these as prescriptive, mistrusting and compliance-oriented. Although regulation in Dutch healthcare does indeed mostly focus on enforcing compliance, recently some new regulatory initiatives were introduced which offer more room to manoeuvre for hospital managers. For example, the Dutch Healthcare Inspectorate started experimenting with process-oriented or governance-based regulation which focuses on the inspection of a hospital's governance system for patient

safety (and care quality) rather than meeting predefined safety standards (Stoopendaal, de Bree, & Robben, 2016). Compared with traditional compliance-oriented regulatory styles, this initiative placed more emphasis on self-organisation, self-critical reflection and the autonomy of participating hospitals (Stoopendaal & van de Bovenkamp, 2015). Consequently, governance-based regulation offers managers more room to manoeuvre and, correspondingly, more possibilities for emphasising a commitment-based safety management approach. The Dutch Healthcare Inspectorate recently expressed the ambition of *"finding the right balance between trust and sanctioning"* (Dutch Healthcare Inspectorate, 2016, p. 16). It would be desirable that other external stakeholders follow this line of reasoning and specifically target their regulatory style at the specific situation they face, consequently giving rise to both control- and commitment-based safety management practices.

Reappraising a control-based management approach

Findings of this study indicate that control-based management should be reappraised when it comes to managing patient safety. A control-based approach carries a negative connotation, both in practice and the literature. In the public debate, managerial control is frequently associated with 'ticking the boxes' and requirements that lay down an administrative burden (Meurs, 2014; [Ont]regel de Zorg, 2018). Our conceptualisation of control-based safety management focuses instead on behavioural safety directives that give healthcare professionals instructions on how to deliver safe patient care. According to the literature, these directives and managerial control would be demoralising and impede safety improvement (Khatri et al., 2006). Therefore, HRM scholars highlighted the need to shift away from a traditional control-oriented approach towards commitment-based management practices (Khatri et al., 2006; Walton, 1985). However, our findings indicate that both management approaches in their own way contribute to nurses' safety-related attitudes and behaviour. Nurses interpret control-based safety management as a reflection of the importance of (certain) patient safety (behaviours) rather than a sign of distrust. Hence, we make a plea for reappraising a control-based approach when it comes to patient safety management. Nurse managers' choice for a control-based approach is found to be motivated by managers' sincere concerns about patient safety and their willingness to facilitate safe care delivery. On top of that, nurse managers feel forced to adopt control-based management practices because of top-down or externally imposed safety requirements. Thus, the choice for control-based safety management is mainly patient-oriented or externally induced. This in contrast with assumptions in the literature that control-based management primarily originates from distrust in the self-regulation capacities of employees (Khatri et al., 2006) and the felt need to establish order and exercise control (Walton, 1985). Despite the importance of control-based safety management, nurse managers are still seeking for the best way to shape a control-based management

approach. First, nurse managers do not always feel comfortable about exercising managerial control. Control-based management does not naturally align with the autonomy and self-regulating abilities of healthcare professionals (Freidson, 2001; Numerato, Salvatore, & Fattore, 2012), neither with the caring and compassionate personality traits of nurses (Eley, Eley, Bertello, & Rogers-Clark, 2012; Williams, Dean, & Williams, 2009). As one of the interviewed nurse managers said: *"I don't want to be a police officer."* This may also clarify why control-based management practices are always combined with elements of a commitment-based approach. Second, control-based management may be hard to put into practice. Nurse managers cannot always observe the one-to-one situation in which a nurse takes care of her patient and management information on compliance is frequently not (real-time) available in the (electronic) patient record. Moreover, deliberate non-compliance can sometimes be the right thing to do in order to ensure a patient's safety. These findings might also explain the relatively low internal consistency of the control-based safety management subscales. For example, respondents' interpretation of the statement *"When we repeatedly do not comply with safety rules or procedures, disciplinary actions will be taken"* (item of the 'Provide feedback on (non-) compliance' subscale) is not necessarily obvious. After all, nurses could (and should) break the rules when they have good reasons to do so. How nurses interpret control-based safety management is, among other things, dependent on the level of ambiguity or strength of the message communicated by the management practices (Bowen & Ostroff, 2004), the quality of the communication by the nurse manager (Den Hartog, Boon, Verburg, & Croon, 2013) and the attributions that nurses make about *why* their manager implements a control-based approach (Nishii, Lepak, & Schneider, 2008). It seems to matter *"whether control is viewed as communicating restrictions and limits or whether it is seen as communicating valuable information"* (Speklé, van Elten, & Widener, 2017, p. 74). We found that control-based safety management is typically interpreted by nurses as signalling the importance of patient safety issues. A (partial) explanation for this might be that control-based management practices are often embedded in a commitment-based management approach, which could soften the message communicated by the control-based practices. So, even though nurse managers do not always feel comfortable about exercising managerial control, control-based safety management is found to make a valuable contribution to managing patient safety.

Nurse managers provide an important link in the safety management chain

Growing evidence points to the leading role of (nurse) managers in ensuring patient safety (Parand et al., 2014; Verschueren et al., 2013). Our findings indicate that nurse managers do indeed have a central role in shaping nurses' safety-related attitudes and behaviour, yet they represent just one (important) link in the safety management chain. Nurse managers are well able to set the right tone in order to motivate their nursing

staff for patient safety and to overcome professionals' resistance because most of these managers are so-called professional-managerial hybrids: nursing *"professionals engaged in managing professional work, professional colleagues, and other staff"* (McGivern, Currie, Ferlie, Fitzgerald, & Waring, 2015, p. 412). Their hybrid role enables nurse managers to view patient safety issues through a 'two-way window' and to align the professional and managerial discourses (Llewellyn, 2001). Consequently, they are in a strong position to influence nurses' safety-related attitudes and behaviour. However, nurses' attitudes and behaviour are not only influenced by the management approach of their direct supervisor. Characteristics of the individual employee, the team and the broader work environment play an important role as well (e.g., Morrison, 2014; Nembhard, Labao, & Savage, 2015; Newman, Donohue, & Eva, 2017). To illustrate, results of our qualitative study show that higher-level managers, medical managers and informal leaders have a role in managing patient safety as well; stressing the importance of so-called distributed management (Bolden, 2011). In line with this, Taylor and colleagues (2015) demonstrated that high performing hospitals stand out by committed and supportive managers across all organisational levels, from the board room to the bedside. Higher-level managers who emphasise the priority of patient safety and create conditions favourable for delivering safe care may, for example, contribute to developing a safety climate (Singer & Tucker, 2014), encouraging quality improvement (Jones et al., 2017) and enhancing patient safety performance (Jiang, Lockee, Bass, Fraser, & Norwood, 2009). Furthermore, physicians have a crucial role and powerful voice in patient safety management, both in formal managerial roles and as informal leaders or role models during clinical practice (Berghout, Fabbricotti, Buljac-Samardžić, & Hilders, 2017). The latter is also referred to as *"managing beyond the manager"* (Mintzberg, 2011, p. 147) and is considered particularly relevant in organisations employing a highly professionalised workforce and in case of complex problems for which professionals themselves have a great responsibility (McKee, Charles, Dixon-Woods, Willars, & Martin, 2013), such as patient safety. Our qualitative research demonstrated that leading physicians are important role models when it comes to patient safety management. In day-to-day interactions, prominent healthcare professionals may lead by example, draw attention to safety matters and convince their colleagues to act the same. Furthermore, in line with the self-regulation tradition that characterises medical professionals (Freidson, 2001), in some hospitals managerial control is partially replaced by professional control. In these hospitals, nurses or other healthcare professionals play a central role in monitoring each other's behaviour and providing co-workers with feedback on (non-) compliance. The distributed formal and informal responsibilities for patient safety management do, however, not downgrade the position of nurse managers. After all, our results indicate that nurse managers have a significant role in stressing the priority of patient safety, creating a work environment in which nurses feel psychologically safe and stimulating employee behaviour.

METHODOLOGICAL REFLECTIONS

This dissertation is one of the first studies to thoroughly examine control- and commitment-based management approaches in the context of patient safety management in hospital care. By combining qualitative and quantitative methodologies in an exploratory sequential mixed methods approach we obtained considerable insight into the safety management approaches used by (nurse) managers as well as the effects of different management approaches on healthcare professionals' safety attitudes, behaviour and patient safety performance. Based on our qualitative study, we adapted the conceptualisations of control- and commitment-based management approaches such that they specifically target patient safety management in hospital care. Subsequently, these conceptualisations were used to develop the ConCom Safety Management Scale to enable the measurement of (nurses' perceptions of) both management approaches in the context of nurse managers in clinical hospital wards. Psychometric properties of the newly developed questionnaire were tested thoroughly and provided support for the construct validity and the reliability of the scale. Finally, a large sample of nurses and nurse managers proved willing to participate in our survey study. As a result, our findings provide unique insight into patient safety management in nursing care in clinical hospital wards. However, despite these strengths, some limitations should be taken into account while interpreting the results.

First, our cross-sectional research design only demonstrates associations between the safety management approaches and nurses' attitudes, behaviour and patient safety performance. It did not allow us to test causality. As a result, the findings of the last two chapters need to be interpreted with some caution. Even though all of the relationships tested in these studies were theoretically underpinned by thorough literature review, we cannot rule out reverse causality. After all, shaping safety management is potentially a reciprocal process. It is theoretically plausible that the (perceived) safety management approaches influence nurses' attitudes and behaviour, but nurses' attitudinal and behavioural reactions could also influence the shaping of the management practices adopted by a nurse manager. In order to draw conclusions on the causal order of the relationships between the different variables, we could have collected longitudinal data or conducted a case control study. However, the prior is hard to put into practice because of environmental dynamics in healthcare – and more specifically patient safety management – and the latter might raise ethical questions.

Second, both our qualitative and quantitative datasets were used to write multiple empirical papers. Overusing a single dataset for more than one paper is increasingly criticised (Chen, 2011). However, it is deemed possible if every paper makes a unique contribution *"with respect to the research question, theories used, constructs / variables included, and the theoretical and managerial implications"* (Kirkman & Chen, 2011, p.

437). We undertook large-scale qualitative and quantitative studies, both of which covered multiple unique – although related – research questions that were underpinned by various theoretical approaches. However, the variables and data used to answer the research questions overlapped to some extent. For example, data about control- and commitment-based safety management was first divided into two subsamples which were used to develop and test the ConCom Safety Management Scale (chapter 4) and subsequently the data was included in the analyses of the chapters 5 and 6 as an independent variable. Hence, the evidence presented in these chapters is not completely independent. Our findings might be influenced by (unknown) extraneous factors specific to our sample. We could have increased the validity of our results and drawn stronger, more reliable conclusions if we would have been able to replicate our findings in a second, independent sample of nurses and nurse managers.

A third limitation of this study is the lack of objective outcome measures. In the end, we are interested how control- and commitment-based safety management contribute to ensuring patient safety. However, objective patient safety performance indicators are often difficult to measure and not always comparable across hospital wards and hospitals (Vincent, 2010). Staff perceptions of the level of patient safety are considered a useful substitute because they are found to align with more objective safety indicators (Lawton et al., 2015; Smeds-Alenius, Tishelman, Lindqvist, Runesdotter, & McHugh, 2016; Stalpers, Kieft, van der Linden, Kaljouw, & Schuurmans, 2016). Furthermore so-called proximal attitudinal or behavioural measures are more directly influenced by a nurse manager's safety management approach (Guest, 1997). We tried to obtain a fairly objective score for nurses' behaviour by using nurse manager ratings of nurses' suggestion-focused voice. However, these ratings reflect group- rather than individual-level behaviour. Our study would have benefited from including scores for individual nurses' actual safety behaviour. Furthermore, the nature of (part of) the attitudinal and behavioural measures dictated the use of nurses' self-reported ratings. After all, nurses' attitudes towards the climate for safety, team psychological safety and their intentions towards speaking up can only be reported by nurses themselves. As a consequence, our analyses are partly based on same source data. Hence, the validity of some of the conclusions might be threatened by common method bias (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003). We tried to reduce the likelihood of common method bias by preventing conceptual overlap in the items belonging to the different constructs, presenting information on the construct validity of the measures being used (Conway & Lance, 2010), guaranteeing respondents anonymity and assuring them that there were no right or wrong answers (Podsakoff et al., 2003).

A fourth limitation of this study concerns the broad focus on patient safety management. In the interviews as well as surveys, we asked respondents about (their perceptions of) the *overall* safety management approach adopted within a clinical ward or hospital. However, the findings of our qualitative study indicate that the safety management

approaches vary among situations. We did not take this variation into account during the quantitative phase of our research. On the one hand, the broad focus may provide an accurate reflection of how nurses and nurse managers perceive the overall safety management approach. On the other hand, a more narrow focus on managing specific safety issues or behaviours could possibly have shown more variation in the management approaches between hospital wards.

Finally, we mostly focused on nurse managers and nurses in clinical hospital wards. This focus limits the generalisability of our findings to different occupational groups (e.g., physicians) or different settings (e.g., outpatients clinic, long-term care). However, as mentioned in the individual chapters, the level of generalisability will vary. Firstly, our qualitative research indicates that our conceptualisation of control- and commitment-based safety management is not only relevant for nurse managers at operational level, but also for managers higher up in the hospital hierarchy. However, the specific management practices that managers adopt are found to vary. Since we exclusively focused on Dutch hospitals, the generalisability of our conceptualisation to other healthcare settings may be low. Specific situational features will lead to modifications in the safety management approach adopted. Yet in essence, we expect that both management approaches have the potential to be relevant for managing patient safety in other settings as well. Secondly, it is questionable whether the ConCom Safety Management Scale is generalisable outside the context of nurses and nurse managers in clinical hospital wards. Our sample provided a fair reflection of the population of Dutch hospital nurses and their nurse managers, supporting the generalisability of our results to these populations. However, applying the questionnaire to different occupational groups or in other healthcare settings may require reframing of the items. Physicians may, for example, not always identify with a direct supervisor. Furthermore, *"nursing as a profession is culturally more amenable to management"* (Turner, Ramsay, & Fulop, 2013, p. 540) than are physicians. Consequently, variation is to be expected in the (strength of the) relationships between the safety management approaches and healthcare professionals' safety-related attitudes and behaviour. Therefore, future research is needed to examine whether the results of our quantitative studies presented in chapters 5 and 6 will hold in different occupational groups or settings.

RECOMMENDATIONS FOR FUTURE RESEARCH

The findings of this study give rise to a number of themes that are relevant for future research on patient safety management.

One of the central questions of nurse managers concerning patient safety management is: How can I stimulate appropriate safety behaviours in employees and, accordingly, en-

sure patient safety within my department? The current study already provided insight into the associations between control- and commitment-based safety management, nurses' attitudes, voice behaviour and their perceptions of the level of patient safety within a hospital ward. However, these outcomes cover just some aspects of the broad range of behaviours and performance measures that are relevant to patient safety. Future research is needed to deepen our understanding how control- and commitment-based management practices combine to influence different kinds of safety-related attitudes and behaviours. Stimulating compliance with safety rules and regulations (e.g., concerning hand hygiene or patient identification) may possibly require a different safety management approach than motivating nurses for soft skills such as voicing safety concerns or suggestions. Furthermore, it is interesting to explore whether the influence of the safety management approaches compares across occupational groups (e.g., nurses, physicians, paramedics). In addition, future research should focus on how control- and commitment-based safety management approaches can be used to tackle specific patient safety problems. The required safety management approach may vary depending on the complexity, ambiguity or predictability of safety risks. Ideally, research would results in a roadmap for managers which reveals the most appropriate safety management approach for specific patient safety issues and how this approach should vary depending on situational factors as well as over time.

Secondly, nurse managers do not manage patient safety in isolation. Our findings illustrate that a variety of managers in formal managerial positions, informal leaders and external stakeholders is involved in patient safety management. Future research is needed to gain insight into how the system as a whole contributes to ensuring patient safety. In other words, the focus should shift from the influence of an individual (nurse) manager to the combined effect of anyone who is involved in patient safety management. After all, the message spread by the management practices or behaviour of a single formal or informal leader is possibly strengthened if it aligns with the management approach adopted by other actors within the system, otherwise the message could be weakened.

Thirdly, future research is needed on how hospitals as well as individual healthcare professionals could be stimulated to proactively deal with safety risks. Our results indicate that some hospitals are primarily concerned with conformity to external safety requirements. In other words, their safety culture is bogged down in a calculative stage rather than maturing into a proactive or generative safety culture in which *"patient safety constitutes an integral component of the working lives of everyone in the organization"* (Hoffmann & Rohe, 2010, p. 94). However, dynamics in healthcare require both care providers and managers to constantly signal potential safety threats and to come up with solutions to mitigate these risks. After all, safety risks might change and new threats could emerge from, among other things, the growing complexity of care delivery and the rapidly changing technical possibilities. As a consequence, patient safety management should evolve

as well. Therefore, future research should focus on how such a proactive or generative safety culture could be stimulated at all organisational levels. For example, what stimuli or incentives could external stakeholders use to trigger hospitals to take initiative in improving patient safety? And how could organisational conditions and the safety management approaches adopted by managers at various hospital levels be favourable for encouraging proactive safety behaviours in healthcare professionals?

RECOMMENDATIONS FOR PRACTICE

The results of this study lead to various recommendations concerning patient safety management for nurse managers, higher-level managers, informal leaders as well as different external stakeholders.

Nurse managers

Based on the findings of this study, nurse managers are advised to combine control- and commitment-based management practices with regard to patient safety management and to adjust their safety management approach to the specific situation they are facing. Nurse managers should be aware of the variation in impact of control- and commitment-based safety management and the different purposes that both management approaches can serve. They must align their management approach with the importance and urgency of safety issues and the level of intrinsic motivation of the nurses whom they supervise. Furthermore, it is important that nurse managers keep in mind that the 'actual' management approach that they implement may be perceived differently by their nursing staff. Therefore, nurse managers are advised to further explicate their safety management approach and to clearly communicate with their nurses in order to ensure that their message comes across. For example, nurse managers could discuss particular monitoring results during staff meetings and explain to their nursing staff how they observed the specific compliance behaviours. On the one hand this will provide nurses with insight into what their manager does to ensure patient safety, on the other hand it will provide understanding of what safety behaviours are expected from employees.

That every nurse manager should be able to properly use and effectively combine control- and commitment-based safety management has consequences for the recruitment and training of nurse managers. Hospital managers are advised to select nurse managers, among other things, based on their ability to effectively switch and easily balance control- and commitment-based management practices. Furthermore, hospitals might offer their nurse managers training and on-the-job coaching in *how* and *when* both safety management approaches could be best put into practice. By practicing the use of control- and commitment-based management approaches in training settings or dur-

ing simulations, nurse managers can familiarise themselves with the complete range of relevant safety management practices. As a result, they will probably more easily adopt management practices that they do not naturally prefer to use. Furthermore, peer-to-peer and on-the-job coaching could provide nurse managers with guidance on *when* to emphasise a control- or commitment-based safety management approach. By sharing concrete experiences and discussing practical recommendations for safety management, nurse managers will learn how to manage particular safety issues in specific situations. On top of these local training and coaching programmes, interaction and knowledge exchange among nurse managers across different hospitals could be stimulated in order to further improve patient safety management. For example, by organising professional education about patient safety management or nursing management more in general.

The leading role of nurse managers in managing patient safety in hospital wards pleads for strengthening nurse managers' position within the hospital and further professionalising nursing management. Currently, nurse managers are often not closely involved in shaping hospital-wide safety policies and procedures. However, their responsibility for stimulating appropriate safety behaviour in nurses – who form a significant part of the hospital staff and who have an important role in ensuring safe care delivery – would certainly justify a more central role in patient safety management. This might require an overall professionalisation of nursing management. Most nurse managers are socialised into the nursing domain and act more like a 'primus inter pares' rather than explicitly profiling themselves as (nurse) managers. On the one hand this enhances their credibility among the nursing staff, on the other hand it could weaken their position in the managerial hierarchy. Just like higher-level managers, nurse managers might professionalise their work *"by establishing occupational standards […] through educational programmes, journals, conferences and codes of conduct"* (Noordegraaf & van der Meulen, 2008, p. 1055). Educational institutions may, for example, initiate (post-) graduate programmes especially targeted at nursing management at operational level, in which nurse managers are taught how to ensure appropriate (safety) behaviours in their employees. After all, stimulating and facilitating employees to deliver the safest, best possible care to all of their patients is one of the core businesses of every nurse manager.

Higher-level managers and informal leaders

Higher-level managers should be aware of the role they have in shaping patient safety management through the strategic choices they make and by setting an example for managers at lower organisational levels. Rather than passively conforming to externally imposed safety requirements, higher-level managers should take an active role in determining a hospital's strategic direction regarding patient safety management. It is important that managers are aware of the room to manoeuvre available as well as their own role in emphasising control- and commitment-based safety management approaches.

Just like nurse managers, higher-level managers should create a proper balance between both management approaches, depending on the specific situational features. On the one hand emphasising internal planning and control cycles to monitor compliance with (externally imposed) safety demands and to provide healthcare professionals or operational managers with feedback, on the other hand creating awareness of safety issues and showing genuine commitment to ensuring patient safety. Although members of the board of directors, business unit managers and medical managers mostly work at strategic or tactical hospital levels, they must realise that their safety management approach is often clearly visible and might directly influence healthcare professionals' safety-related attitudes and behaviour. Moreover, the management approach used by higher-level managers might seep through the organisation and influence lower-level managers' choice for control- or commitment-based management practices. Therefore, it is important that higher-level managers constantly focus on shaping the appropriate safety management approach, also when other issues distract their attention. Furthermore, direct involvement of managers in various positions requires close collaboration in order to ensure that employees get unambiguous messages of what is expected of them when it comes to ensuring patient safety.

Patient safety management is not just the responsibility of managers in formal managerial positions, informal leaders have an important role in ensuring patient safety as well. Leading professionals are considered credible messengers who can act as role models, draw attention to safety issues, explain safety interventions to their colleagues and stimulate compliance and appropriate safety behaviours. In fact, every single healthcare professional should take his or her responsibility for patient safety management. On a small scale, professionals can already make a contribution by constantly prioritising patient safety in day-to-day care delivery, speaking up about safety concerns or offering suggestions for safety improvement. Furthermore, they could stimulate appropriate safety behaviours among colleagues by creating awareness of safety issues or providing co-workers with feedback when they observe that safety rules or regulations are not closely followed. The latter may occur on an informal basis during the teamwork of healthcare employees, but it could also be incorporated more formally if healthcare professionals take responsibility for a specific safety protocol and stimulate co-workers to follow those safety rules. This professional control might, however, require specific knowledge and skills of employees and may, consequently, influence what competencies need to be taught during the initial training of healthcare professionals. It first requires that healthcare professionals gather sound knowledge about (how to mitigate) patient safety risks. Moreover, healthcare professionals need to learn how to provide colleagues with constructive feedback and how to motivate their peers to exhibit appropriate safety behaviours. Furthermore, professionals' role in safety management would require a change in the *"culturally ingrained reluctance to correct an erring colleague"* (Leistikow, Kalkman, & de Bruijn, 2011). Every healthcare

professional should shoulder the professional responsibility to discuss potential safety threats and to motivate co-workers for safety behaviours, no matter hierarchical differences or seniority. Healthcare professionals must realise that ensuring patient safety is a *shared* responsibility of everyone who is involved in care delivery.

Regulatory agencies and health insurers

A variety of external stakeholders could influence the shaping of a hospital's safety management approach. Our recommendations will focus on those stakeholders that the respondents in our qualitative study considered most influential: regulatory agencies and health insurers.

Regulatory agencies are advised to strictly enforce compliance if necessary and to offer managers more leeway whenever possible; consequently giving rise to both control- and commitment-based safety management approaches. Results of our study indicate that demands for accountability and safety requirements of influential external stakeholders such as the Dutch Healthcare Inspectorate and accreditation committees are frequently perceived as prescriptive and compliance-oriented by hospital managers. However, not all safety issues require a command and control style of regulation. Depending on the importance and the urgency of safety issues, and the faith placed in the self-regulating abilities of a hospital, external stakeholders could also choose to offer managers more room to manoeuvre. For example, they are advised to adopt reflexive styles of regulation and focus on how hospitals govern patient safety rather than monitoring whether hospitals meet predefined performance standards. By doing so, regulatory agencies stimulate a more proactive role of hospitals and better use the existing professional and managerial expertise on patient safety management to its full potential. Hence, external stakeholders should find a proper balance in their regulatory styles. However, achieving such a balance does also require that regulatory agencies are given sufficient latitude in customising their regulatory style and that media and politicians do not reflexively demand stricter regulation of patient safety in response to (serious) safety incidents.

Furthermore, health insurers should not mimic the role of regulatory agencies but instead focus on providing financial, purchasing incentives to stimulate hospitals to walk the extra mile when it concerns patient (safety) outcomes and the added value of health care delivery. Our findings indicate that managers frequently place health insurers under the same umbrella as regulatory agencies: both groups of stakeholders are perceived as issuing demands for accountability for (minimum) patient safety requirements. Although insurers need to gain insight into the (minimum) level of patient safety to determine whether or not to purchase good quality healthcare, they could also stimulate hospitals to go beyond minimum performance standards by incorporating agreements on patient safety in their purchasing contracts. Regarding the former, health insurers are advised to align their safety indicators with those used by regulatory agencies in order to reduce

the administrative burden for hospitals. Concerning the latter, health insurers could for example negotiate agreements on specific safety issues that a hospital should focus on, or they could provide hospitals with (financial) incentives when they reach certain safety performances.

Finally, it is recommended that regulatory agencies as well as health insurers shift their focus from input or process indicators towards (patient safety) outcome indicators as a basis for external accountability over patient safety. The current focus on input or process indicators provides managers with rigid instructions about what is expected of them in terms of (protocols for) patient safety. Such standards could be beneficial for reducing simple patient safety risks, but they are not suitable for minimising uncertain of ambiguous risks involved in care delivery. Moreover, the focus on input or process indicators primarily gives rise to a control-based safety management approach and frequently leads to a compliance mentality of 'ticking the boxes' without internalising and actively thinking through the patient safety risks and the underlying mechanisms. Outcome indicators could offer managers more leeway to deal with safety risks and, concurrently, generate an intrinsic safety motivation in employees. After all, all healthcare professionals want to provide safe care of good quality to all of their patients and they generally consider outcome indicators to give valuable information about the quality of care being delivered. Moreover, outcome indicators do more naturally lead to the use of a commitment-based safety management approach. Insight into patient safety outcomes could make employees aware of the potential safety risks and deficiencies in their own performance and, accordingly, generate commitment on patient safety issues as well as appropriate safety behaviours.

CONCLUDING REMARKS: RETHINK YOUR CASE

This dissertation highlights the importance of both control- and commitment-based management approaches for managing patient safety in hospital care. Looking back at the case of Mr Jansen which we presented in the introduction, nurse managers could craft various combinations of control- and commitment-based management to prevent reoccurrence of such an adverse event. Managers could respond to the incident by tightening up protocols or guidelines on how to take care of patients on clinical suspicion of stroke. They can also use the case to create awareness of safety risks from brief moments of inattention or a lack of speaking up behaviour and interdisciplinary teamwork. Given the coherence and the varying purposes that both safety management approaches serve, it is important that nurse managers know *how* to combine control- and commitment-based management practices and *when* to adopt a specific combination of these approaches. Hospitals face the challenge to continuously improve patient safety and to foster a culture

in which the organisation is not primarily concerned with reactive follow-up to safety incidents or external safety requirements, but proactively deals with potential safety risks. Achieving such improvements requires constant efforts of nurse managers, but it is also a shared responsibility which requires true dedication of all healthcare professionals, higher-level managers and relevant external stakeholders. Just like healthcare professionals swear that they will not harm their patients during care delivery (KNMG, 2004), so should managers and external stakeholders assure that they will constantly seek the right balance between control- and commitment-based management approaches to effectively manage patient safety.