Valorisation
The aim of this paragraph is to put the findings of this thesis in the light of societal benefit. Given the patients and societal burden, and economic challenges, it is important to tackle inefficiencies in pain management.\textsuperscript{1-3} Generally, access to appropriate pain treatment services and adequate treatment is seen as the key to realising tangible improvements in (European) pain management.\textsuperscript{2}

**IMPACT OF THE QUALITY INDICATOR DEVELOPMENT**

The first part of this thesis focused on exploring the organisation (structure) of pain treatment services and the content of the Dutch daily pain practice. In response to the results of the national survey and following the policies of the pain medicine programme of the Dutch Society of Anaesthesiologists (NVA), we developed expert-agreement indicators in collaboration with the Dutch Society of Anaesthesiologists. The implementation of these *structure indicators* contributes to quality improvements in Dutch daily pain practice in the Netherlands. Since 2014, the structure indicators are set as national quality requirements for accreditation of Dutch pain treatment facilities. Visitation is part of the accreditation. Conclusions based on this visitation may affect the obtained registered status. Nowadays, 89 pain treatment facilities (95\% of all facilities in general hospitals) obtained for a registered status, and visitations by the Dutch Society of Anaesthesiologists will take place this year (additionally, every 5 years). Hereafter, evaluation of adherence to the structure indicators of the Dutch pain treatment facilities is recommended.

Expected is that the quality of pain care in Dutch pain treatment facilities will improve by this registration. As almost 95\% of the Dutch pain treatment facilities obtained for a registered status by the Dutch Society of Anaesthesiologists, this would mean a large increase compared to 2009 (seen the result of the national survey in this thesis, chapter 2). However, whether this provides a better treatment outcome and more transparency in quality for patients and health care providers is not clear yet. To achieve even (more) transparency, a separate status for academic hospitals (indicator research and education) is worth considering. The more academic settings are mostly engaged in research and ideally play a leadership role: support to the evidence base for the treatment and management of pain, and train future pain researchers (Recommendations for Pain Treatment Services of the International Association for the Study of Pain).\textsuperscript{4} Additionally, this provides referral transparency for other health care professionals and patients. Besides, transparency in what a treatment facility has to offer may save health care costs in patient referrals, by choosing the right facility according to the principle of stepped care (a step by step approach to the burden of care).\textsuperscript{5}

Furthermore, future quality indicator developments (mentioned in the discussion) could be made including patient participation and shared decision making.
Since 2012, progress is achieved concerning the content and the quality indicator regarding the structural process of ‘collecting patient reported data’ (PROMs). At the time of the Delphi study (2012) the view of consortia of patients suffering from chronic pain on important quality indicators of pain care was not known. In 2014, a project group of the Dutch Society of Anaesthesiologists established the ‘quality registration system chronic pain’ including a proposal for Patient Reported Outcome Measurements (PROMs). Insight in patients’ case complexity could be useful in treatment decisions and to compare patient characteristics and treatment results, within specific settings.\(^6,7\) In 2018, all hospitals registered by the Dutch Society of Anaesthesiologists are requested to participate in the national PROMs database, and share data on a national level.

**FURTHER IMPLEMENTATION, IMPROVEMENT AND INNOVATION OF THE QIPP**

The QIPP (Quality indicators from Pain Patients Perspective) questionnaire is validated in five hospitals in the Netherlands. We recommend incorporating the QIPP questionnaire, the quality indicators, into the national quality registering system of the NVA. All hospitals can have access to the QIPP questionnaire (website NVA), and can incorporate the questionnaire in their hospital quality register system. This is an additional step forward in improving pain care by adding patients’ perspective of care. Additionally, a national consortium including patient representative(s) (stimulated by the Dutch Society of Anaesthesiologists) can take steps for further national quality improvement activities. Consequently, further pain care quality improvement can be achieved in a patient centered way.\(^8\) Additionally, more research is needed, but there is evidence that patient centered approaches influence the health outcome positively.\(^9\) Moreover, other reported outcomes of patient centeredness are quality of care improvement and increase patient satisfaction.\(^10\) Applicable is a user-centered design (usage, manageability, effectiveness on users requirements) to view how and which patient centered values maps with health care outcome.\(^11\)

As mentioned in the discussion, to improve so called high values for patients in the near future the focus will be on the development of more outcome oriented indicators.\(^12-14\) This quality indicator improvement is an on-going process to track future quality standards from the perspective of patients with chronic pain and to keep the QIPP questionnaire updated. Therefore, we also have to investigate other sources of patient reported outcome measures, assessments of functional status,\(^15-17\) and expand the QIPP questionnaire with more outcome orientated quality indicators. Hereby, the approach of positive health care (iPH) may be valuable, where health is formulated as the ‘ability to adapt and to self manage’,\(^18,19\) which are also important topics in the care standard for chronic pain.\(^5\) Furthermore, the e-health aspects such as community online and web-applications will be more important issues, in the near future. We can make
progress here; the patient organizations already defined the e-health and web-applications that play an important role in quality of health care (chapter 2). Certain applications can save staff time and costs by reduction of physical contacts of patients with the staff of the clinic.

Although the QiPPP questionnaire was established by patients with chronic pain and surveyed in the Netherlands only, we believe that most quality issues in this questionnaire appear to be applicable to patients in any healthcare system. However, evaluation in other health care disciplines is necessary. Then, there is widely a need of quality (process and outcome) defined by patients themselves. Together with patient organizations, we will explore methods for updating the QiPPP questionnaire. Therefore, an inter/multidisciplinary (national) project group on partnership level will be established, consisting of patient representative(s), a professional(s) and quality researcher of various disciplines. Furthermore, research is needed to ensure that quality assessment using the QiPPP questionnaire actually supports pain clinics to improve their quality. As support in self-management and shared decision making are important quality aspects for patients suffering from chronic pain, expected is that improvements can be made at that level. Additionally, to improve pain management and to do justice on an intersectional approach it is important that patients of different social and cultural settings can express their experienced pain care and treatment outcomes. Consequently, the QiPPP questionnaire needs to be translated in diverse languages.

The original QiPPP questionnaire has been evaluated and validated as a ‘paper version’. It is now also electronically applicable in the Maastricht University Medical Centre (MUMC+), the Netherlands. This electronic version (e-QiPPP) is available for Dutch pain treatment facilities to join, and will be available for all Dutch treatment facilities to incorporate in their own quality system in the near future.

Concluded we can make future development and research recommendations:
• For transparency of referrals by health care givers and patients: considering quality and registration distinction between peripheral- and academic settings;
• To assess quality on a national level conform standards of professionals and patients: implementation of the QiPPP by incorporating the process and outcome indicators into the national quality register system;
• To evaluate and improve the quality assessments on national level and (more) patient centered: formation of a national consortium existing of professional and patients;
• To improve high values for patients: explore other domains of patient reported outcome measures;
• Applicability of the QiPPP questionnaire in any healthcare system: evaluation of the QiPPP questionnaire in other multidisciplinary health care disciplines;
• To save staff time and costs by reduction of patient visits to the clinic: implement e-health applications and thereafter develop e-health quality indicators (already defined by patients).
REFERENCES
