Summary

The main aim of this thesis was to improve surgical care for burn patients by examining the relationship between surgical care and (modern) burn outcome. More specifically, it aims to gain further insights into selective debridement of burns. We aimed to achieve this by providing evidence on burn debridement tools, aspects of timing of surgery and by determining which specific burn depths require surgery for optimal long term outcomes. Complementary, we attempt to optimize and modernize burn outcome assessment and follow-up after burn care. The ultimate goal is to make a valuable contribution to a higher standard of care by optimizing surgical treatment for patients in the full-spectrum of burn severity.

The first part of this thesis primarily concentrates on the surgical treatment of acute burn wounds. This part starts with a systematic review on burn debridement techniques used for thermal burn injuries. In this review, no debridement techniques was found to be superior and several shortcomings in the currently available studies on burn debridement are discussed. With this knowledge and learning from the flaws in the included studies, a study protocol was designed for a randomized controlled trial that will compare conventional versus hydrosurgical tangential excision. Furthermore, Part I includes a prospective cohort study on the effect of healing potential (burn depth classified by Laser Doppler Imaging) and treatment strategy on long term scar quality. A major finding of this study is that burns with an intermediate healing potential did not require surgery to achieve acceptable long term scar quality. Lastly, a nation-wide retrospective study on surgical management in the elderly is described. This study leads to a better understanding of the epidemiology, high burden of care and differences in surgical strategy of the elderly burn population.

In Part II, the focus is on contemporary burn outcome parameters beyond survival and length of hospital stay. Two modern burn outcomes are highlighted: scar quality and return to work (RTW). Both outcomes are, amongst other measurement tools, assessed using Patient Reported Outcomes Measurements (PROMs). Scar quality is assessed with the Patient and Observer Scar Assessment Scale (POSAS). Next to good reliability parameters, we found that this scale is able to predict long term scar quality by an early POSAS assessment at three months post-burn. RTW was monitored for two years in a specialized burn care population and absenteeism after burn injuries appears to be substantial leading to high societal costs.