General Discussion
This thesis provides a collection of studies into healthcare suicide prevention strategies developed and implemented by 113 Suicide Prevention to improve the quality of care for persons at risk of suicide. In this chapter we will summarize and discuss our main findings with an eye at potential future strategies to enhance health care suicide prevention. Basic assumption of this thesis is that there is a positive relationship between the quality of health care and the ability of health care to prevent suicide. The research in this thesis does not test this assumption, but focuses at the progress and process of implementation of two health care quality improvement strategies. The first strategy is the implementation of online suicide prevention interventions that can be accessed anonymously, 24x7 and free of charge via a national platform www.113.nl. The second strategy is implementation of evidence-based suicide prevention policies and practices in specialist mental health care.

Part I of this thesis (Chapters 2-4) focuses on the first strategy. Chapter 2 describes the Dutch online suicide prevention platform 113 Suicide Prevention in its first three years since its launch in 2010 introducing its general background; its organization and principles; and its key services. Data are presented on the characteristics of 113 service users and their usage of different services, as well as preliminary outcomes of the crisis chat service. Chapter 3 presents a study of the reach and outcomes the 113 crisis chat service in 2012. Chat, chat visitor characteristics and changes in visitors’ emotional states were studied, applying methods and instruments that enable comparison with crisis telephone calls to U.S. 1-800-SUICIDE helpline centers. Chapter 4 offers a study of the reach, perceived benefits and potential harmful effects of users of the online peer support forum that was offered to visitors of the 113 website.

Part II investigates the second strategy. Chapter 5 offers an implementation study of changes in levels of suicide prevention guideline implementation in and practice variation between, 24 specialist Dutch mental health institutes (MHIs) measured in the course a Suicide Prevention Educational Outreach (SP-EDO) implementation strategy that 113 co-created with participant MHIs.

Chapter 6 presents a narrative review of the Zero Suicide approach to suicide prevention in mental healthcare that embraces the aspirational goal of zero suicides among patients treated in health care systems or organizations. Zero Suicide core components and their evidence base are clarified and discussed to answer the question: is it rational to pursue zero suicides among patients in healthcare?
In the next paragraphs main findings of our studies are presented and evaluated.

**7.1 Implementation of the 113 Online platform**

**Main findings**

Findings presented in Chapter 2 demonstrate the acceptability and accessibility of a wide range of online preventive and therapeutic interventions offered to a population of (often severely) suicidal individuals. An estimated 60% of these help seekers are not in treatment by regular mental health care. Help seekers that do receive regular mental care often express unmet needs and dissatisfaction with their treatment or their therapist. Our study indicates the potential of the 113 platform to provide effective and safe online care to this population.

Chapter 3 zooms in on one of the services within the 113 platform: the crisis chat service. In line with findings presented in Chapter 2 this service was shown to reach a population of suicidal people with multiple (mental health) problems. In comparison to US telephone helpline seekers and outcomes, 113 help seekers report more and more severe suicidality while the outcomes of 113 chats appear similar to US telephone helplines. A substantial number of visitors (36-49%) were observed to be in a better emotional state at the end of the chat, with marked improvement occurring in 7-10% and marked deterioration in less than 1%. As an unexpected finding limiting the interpretation of results, we found that the first and last ten minutes of chats did not contain substantial information pertaining to suicidality.

Chapter 4 examines the potential benefits and risks of another service offered via the 113 platform: the peer support forum. This forum appears to function as a meeting place for a small group of individuals with chronic, severe suicidality of which 12% visited the forum to find effective suicide methods and 3% to find a suicide partner. Peer support and anonymity were the most mentioned benefits, whereas no personal contacts and few reactions to postings were perceived as limitations. Of the forum users who had visited the forum more than once 35% reported feeling better right after use and 12% reported feeling worse.

**Evaluation**

As our research shows, the 113 Suicide Prevention platform serves as a much needed and used alternative gateway to care for suicidal individuals struggling with multiple and often severe (mental health) problems, that would otherwise shy
away from help; and as a supplement therapeutic environment that meets unmet needs of patients in regular, offline mental healthcare.

In contrast to most offline mental healthcare services, the online services 113 offers can be accessed anonymously, 24x7, and free of charge. In theory this improves the access to- and timeliness of suicide prevention care. In practice however, this improvement can only be realized with the capacity needed to answer the demand for these services. Insufficient capacity may even jeopardize visitor safety, as long waiting times frustrate visitors in crisis and may reinforce them in the belief that nothing could help them. Not being answered may even fuel suicidality by adding to feelings of perceived burdensomeness and thwarted belongingness that are determinants of suicidal behavior (Van Orden et al., 2010).

This risk of not being able to answer demand became apparent in the first three years, as 113 brand awareness among the general public grew from 1% to 2%. Root to the capacity problem was the innovative and anonymous nature of the 113 services that preclude healthcare insurance companies from funding, leaving it up to the Dutch Department of Healthcare to offer 113 grants to provide its services. It took several years to overcome this financial implementation barrier. In this period the government grew convinced of the added value and the necessity of the 113 platform and found ways to increase funding. The extra capacity enabled 113 to increase brand awareness and thus reach more people at risk of suicide. Currently 40% of Dutch inhabitants recognize 113 as a suicide prevention organization. The rise in brand awareness was achieved by a combination of measures. First 113 changed its brand name from 113Online to 113 Suicide Prevention. Second: the 113 website and user interface were improved to better engage and guide website visitors; and to optimize it for better search engine rankings and social media presence. Third 113 released online advertisements and a national campaign to increase help seeking and stimulate people who are concerned about someone’s suicidality to ask about it. Finally, as a result of the promotion media guidelines for responsible reporting, an increasing number of national newspapers, television and radio programs refer to 113 at the end of coverage of suicide related subjects.

As expected, the increased brand awareness greatly increased the daily number of visits to the site from on average 463 visits by 312 unique visitors in 2013, to 2,153 site visits by 1,688 unique visitors in 2018. Subsequently demand for 113 crisis services increased more than fourfold in this period. This ongoing increase in demand stimulates 113 to find ways to better use its capacity. The website now contains more self-help information in text and video. Available resources are
now used more efficiently by better planning, better management and a change in workflows. By using a five-hour time difference, evening and night shifts are strengthened with licensed, Dutch speaking psychologists who live and work in Surinam, a former Dutch colony. Especially the introduction of triage methods has improved the access to 113 services, leading to lower crisis call non-response rates of 0%-16% of calls. Non-response varies, dependent on hard to predict demand, and now occurs rarely between 9 AM and 6 PM, and most often in the middle of the night.

For help organizations like 113 the challenge is to realize maximum prevention impact with limited resources. As a guiding principle 113 uses a simple formula to estimate (potential) prevention impact of a service: Impact is the product of the reach of a service, and the average, or expected, effect of this service (Impact=Reach*Effect). Dividing impact by costs or staff capacity gives a rough estimate to compare cost effectiveness of different services. While the reach of online services like the crisis chat is high, it remains the question to what extent this service has a preventive effect. Our findings are supportive of a direct positive effect on suicidal visitors’ emotional states. Still, in the majority of cases no direct positive effect could be detected; and sporadically chat visitors’ emotional states appear to have deteriorated in the course of a chat session. These findings raise two interrelated questions for further service development and research. First question is how to improve the potential to effectively improve the emotional state, alleviate suicidality and avoid negative outcomes in more visitors? The second question is: how do positive, neutral or negative direct effects on visitors emotional states translate into longer term outcomes and suicide prevention?

Essentially the first question refers to universal quality and safety goals that every healthcare service should aim for: how to improve the effectiveness of our interventions and reduce (the risk of) harm for the patients we serve? (Institute of Medicine, 2001). 113 aimed to improve the effectiveness and safety of the crisis chat by reconsidering its Solution Focused approach; developing and implementing protocols that focus first and foremost on suicidality and better structure the interaction with help seekers; and by enhancing staff and volunteers’ training, quality control, and supervision. As noted above workflows were redesigned to serve more visitors timely and avoid potentially harmful waiting. These developments illustrate the power of research in promoting healthcare service quality and safety. Measurement of process and outcome variables confronted the highly motivated 113 staff and volunteers with a simple truth: best intentions are no guarantee for
the best consequences. Without the crisis chat study it is conceivable that 113 would have persisted in suboptimal ways of working for years.

To answer questions regarding the effectivity and safety of its services, 113 established a “Living Lab” where researchers and mental health professionals collaborate to assess and study outcomes of the 113 services as these are continually developed and adapted. The forum study presented is one of the first studies that results from this collaboration. It started with mental health professionals that questioned the efficiency, effectivity and safety of the moderated peer support forum for suicidal visitors of the 113 website. 113 researchers translated this question into a pragmatic study design. This design led to sobering findings: the forum had a relatively low reach compared to other services that reach thousands of help seekers annually; it offers direct benefit to its users, but also exposes them to risks that are hard to avoid or control by labor intensive moderation. Following the Impact=Reach*Effect rule it was decided to close the 113 forum in its current form. The capacity involved was used for other services and to develop new ones, like the smartphone apps 113 released to support safety planning or gatekeeping; and educational interventions tailored to support 12-16-year-old visitors.

This second question- how do changes in visitors’emotional states translate into suicide prevention effects- is not only relevant to provide more evidence on the effectiveness and safety of the online services that 113 provides. It is also relevant but also to study the dynamics of recovery from crisis and of suicidality in relationship to interventions offered. At first glance it seems reasonable to assume that positive changes in emotional state predict better suicide prevention outcomes. More positive emotional states indicate that the crisis chat succeeds in stabilizing help seekers and motivates them to seek help. On the other hand, clinical experience tells that the path towards recovery may require the expression of anger, anxiety, sadness or suicidality. “Negative” emotional states do occur in effective therapy sessions. This is why patients so often enter the therapist’s office with a composed smile and leave with tears still in their eyes. In this sense a linear relationship between “improved” emotional state and positive long term outcomes like suicide prevention can be questioned.

Innovative sampling methods like smartphone Ecological Momentary Assessment enable tracking emotional states, cognitions and suicidality as these vary in varying contexts during the day (Kleiman et al., 2017; Nuij et al., 2018). Studying these fluctuations Kleiman et al. (2017) found that suicidal ideation varies dramatically from hour to hour in the course of a day. In addition they found that hopeless-
ness, burdensomeness, and loneliness also varied considerably. However these well-known risk factors for suicidal ideation were limited in predicting short-term change in suicidal ideation. Momentaneous mood states associated with suicidal behaviors were shown to display a saw-tooth course during the day. An important implication of these findings is that single data points cannot be used to base prediction upon.

As partner within the Suicide Research Netherlands (SURE-NL) consortium, 113 collaborates with VU University researchers in the Continuous Assessment and Prevention (CASPAR) project (2017-2021) (Nuij et al., 2018). In this project an interactive smartphone app will be used to combine ecological momentary assessment (EMA) with safety planning (Stanley & Brown, 2012). This creates an opportunity to disseminate safety planning support among crisis chat visitors (or other target audiences) while at the same time sample longitudinal data to track fluctuations and of their suicidality in time. Application of the CASPAR app technology may thus be important in answering the questions regarding the course of suicidality in relation to risk and protective factors; interventions and contextual events.

7.2 Implementation of suicide prevention policies and practices in mental healthcare

Main findings

Chapter 5 and 6 focus at the implementation of evidence-based suicide prevention policies and practices in specialist mental healthcare. Chapter 5 reports on the role of 113 in the implementation of the national suicide prevention guideline in Dutch specialist mental healthcare institutions. 113 developed a multifaceted strategy that combines two implementation approaches that emphasize improvement by learning: educational outreach and action research. Key components of this Suicide Prevention Educational Outreach (SP-EDO) strategy were: establishment of a working relation between MHI representatives and 113 change agents; development and scoring of a Suicide Prevention Monitor that assesses levels of implementation of ten guideline recommendations; feedback and dialogue sessions about the process and progress of implementation; and learning and exchange meetings for MHI professionals. The level of implementation changed significantly in four out of ten recommendations and marked practice variation between MHIs across the country was still present.
Chapter 6 examines the rationale behind Zero Suicide, an emerging approach to healthcare suicide prevention that is gaining momentum worldwide. Fundamental to Zero Suicide is a multilevel system view on suicide prevention, with three core elements: a direct approach to suicidal behaviors; continuous improvement of the quality and safety of care processes; and an organizational commitment to the aspirational goal of zero suicides. These components are clarified and discussed against the backdrop of concerns and objections that focus on possible undesired consequences of the pursuit of zero suicide, in particular for clinicians and for those who are bereaved by suicide. Based on the available evidence we conclude that it is rational to pursue zero suicides as an aspirational goal, provided the journey toward zero suicides is undertaken in a systemic and sustained manner, in a way that professionals feel supported, empowered, and protected against blame and inappropriate guilt.

**Evaluation**

As Chapter 5 shows, within a timeframe of three years the SP-EDO approach appeared insufficient to significantly help improve more than four out of ten evidence-based suicide prevention policies and practices in the 24 MHIs studied. Policies that do not affect day-to-day practice appear to be easier to improve than practices in daily routine like systematic assessment of suicidality in the course of treatment. This may indicate that the SP-EDO approach did not reach the work floor enough to change clinical routines.

On the positive side, the SP-EDO approach enabled 113 to engage and motivate the field to contribute to the National Suicide Prevention Strategy. Initially skeptical MHI leaders are now more aware of the urgency and of tangible opportunities to improve the quality of their suicide prevention care. They experienced that measurement can be used to learn and improve their suicide prevention efforts without a risk of being shamed and blamed. Given the sensitive nature of suicide this is an important achievement, that proved to be a stepping-stone for further collaboration in a Suicide Prevention Action Network in healthcare (SUPRANET Care) (Setkowski et al., 2018). SUPRANET Care aims at improving quality and safety of care to enhance suicide prevention by collecting standardized process, practice and suicide (attempt) outcome data; providing benchmark feedback reports to participating organizations; identifying trends and promising preventative practices; and systematically implement these practices across the network. At present 15 specialist MHIs collaborate with 113 in this confidential learning network.
At the start of the National Suicide Prevention Strategy MHIs were cautious and generally did not accept Zero Suicide as a rational approach to prevent suicides in healthcare. Interestingly and unexpectedly, recently a turning point occurred. In 2017 SUPRANET Care participants adopted a Zero Suicide mission “Mental health care so good, that none of our patients die by suicide.” In 2018 the AMHAC-NL, the lead agency of all MHIs that in 2013 challenged that better care would enhance suicide prevention, followed with a mission: that no one in this country dies alone and in despair by suicide”.

One explanation for this unexpected, sudden change in mindset towards suicide prevention is that Zero Suicide in essence embodies the reset of a social norm about suicide prevention. Social norms are self-enforcing patterns of behavior within a group (Nyborg et al., 2016) that are known to remain stable for long periods; but if they change, they may do so suddenly and dramatically, from one alternative norm to another. A famous historical example is the sudden change in the social norm on foot binding of Chinese girls that was dominant during centuries but disappeared within a generation. Dutch examples of sudden changes in social norms are non-smoking in public buildings, cafés and restaurants; or the abandonment of routine use of separation cells in psychiatric intensive care settings.

Social norms are sustained as a result of multiple factors like fear of being (socially) sanctioned; reinforcement of the membership of a group; or the desire to follow the lead of others. As Young (2015) suggests, the dynamics of medical practice variation and practice guideline adoption can be understood as a result of evolution of social norms regarding treatment. Regarding suicide prevention care, the currently dominant norm of accepted suicide is based on a heroic view in which professionals regard themselves personally responsible and accountable for patient outcomes. Against this background, losing a patient to suicide is an emotionally threatening experience that evokes doubts about the professional competence and fear of shame, blame and (social or professional) sanctions. The social norm of accepted suicide provides comfort and reassurance to restore professional confidence. It also protects against shame, blame and litigation: “Patient suicide can happen to all of us. You stay one of us if this happens to you.” Finally, it reinforces standards of clinical practice that are deemed reason-ably “good enough” to care for people at risk of suicide. This aspect is valuable in cases of litigation in which the question is to what extent a clinician acted the way most clinicians would have in a similar case. The value and function of the social norm of accepted suicide clearly is at odds with the value of a social norm
that ambitiously pursues the prevention of all suicides by to raising standards of good practice.

Dramatic changes in social norms can be understood by mathematical models that were initially developed by ecologists to explain sudden ecological changes, e.g. climate changes or the growth of decline of populations (Nyborg et al., 2016; Scheffer, 2009). Central to these models is the role of self-enforcing positive feedback that causes a system to cross a tipping point between two stable equilibrium states. These models can be applied to understand the dynamics in a wide range of complex systems and on different scales, ranging from bacteria to societies and from symptoms to epidemics (Scheffer, 2009). Tipping point dynamics may help evaluate the findings in Chapter 5 and 6, and guide further action to implement suicide prevention best practices in specialist mental health care.

As tipping point models predict, the pressure Zero Suicide puts on the governing social norm of resigned acceptance of suicide initially evokes counteracting forces that protect this social norm. As described in Chapter 6, concerns and objections against Zero Suicide are expressed in the mental health community to protect the current standard of good practice that allows the field to ignore rational opportunities to improve the quality and safety of the care provided. In this phase the social norm of accepted suicide does not change and evidence-based policies and practices are not implemented. Seen in this light minimal or modest results like those found in our SP-EDO study do not necessarily imply that efforts to improve healthcare have been undertaken in vain. To the contrary: given the resilience of social norms to resist change they can be expected. However, change per se does not guarantee subsequent tipping towards a new social norm either. To cross a tipping point a critical mass of opinion leaders, followers and stakeholders have to change their mind and become interested in opportunities to prevent more suicides. This appears to have happened in the Henry Ford Medical System that showcases the powerful prevention effect of perfecting depression care, driven by a zero suicide ambition (Coffey, 2006; Coffey, Coffey & Ahmedani, 2013). The question is thus: how to create a critical mass within Dutch mental healthcare?

As clarified in Chapter 6, Zero Suicide combines an appeal on hard to dispute universal human values, with sound organizational principles and evidence-based practices that have shown to be effective in preventing suicides. Explaining these elements, it took 113 relatively little effort to convince many non-healthcare stakeholders like railway companies, journalists, members of Parliament and policy makers at the Ministry of Healthcare, Welfare and Sports of the rationale behind
Zero Suicide. Some of them even wondered: what is new about Zero Suicide? To these stakeholders it was hard to believe that the goal of zero suicides was not what healthcare had been pursuing already for decades.

There were of course critical reactions. To the Dutch, Zero Suicide sounds like zero tolerance, an expression that is associated with crime fighting. In a country that values self-determination highly and has a liberal legislation on euthanasia, this may give the false impression that Zero Suicide implies a moral condemnation of suicide and suicidal behavior. Despite these critical connotations the Dutch Minister of Healthcare grew more supportive of the imperative to prevent suicide. In 2017, for the first time in history the Dutch government explicitly mentioned suicide prevention as a priority for (mental) healthcare; and further expanded the budget for 113. Still, in 2016, many MHIs were cautious and critical of Zero Suicide.

Conceivably the spread of the Zero Suicide vision on suicide prevention in Dutch society has reinforced the mutative effect of the SP-EDO intervention, resulting in a tipping point in which mental health care leaders changed their mind and adopted Zero Suicide to guide intensified suicide prevention efforts. As Nyborg et al. (2016) explain, policies may help social systems to cross a tipping point between harmful and helpful social norms by increasing visibility of behaviors; increasing willingness to cooperate; and enhancing social learning of individual responsibility. In addition, expectations of the consequences of behavior, i.e. of conforming or violating a social norm, are of great importance to human behavioral change. In this sense the SP-EDO approach and SUPRANET Care may be viewed important steps in the right direction, as these aim at making organizational behaviors visible and stimulate social exchange and learning.

Thus, the rationale and values behind Zero Suicide is not the only thing made mental healthcare leaders change their mind. Based on their experiences with SP-EDO and SUPRANET they trusted 113 in supporting them to find feasible and safe (i.e. without a risk of blame) ways to pursue the aspirational goal of zero suicides. What may have won them over most may well have been the change in social norm in Dutch society. Seeing how suicide prevention is valued in society, they expect that there is much more to gain by the ambitious pursuit of a Zero Suicide mission, than by sticking to defensive management of low expectations of healthcare suicide prevention. These elements appear to have convinced that suicide prevention should be spearheaded in the next decades.
Still it is questionable to what extent mindset among leaders will result in a critical mass sufficient to change suicide prevention in daily practice; a change in social norms of a community is rarely the result of top-down directives. However strongly professionals may endorse the value that no one should die alone and in despair of suicide, they will not reset their norm without expecting that they and their patients will be better off. To win their hearts and minds of leaders have to prioritize suicide prevention, first and foremost by fostering a Just Culture of learning and improvement (Dekker, 2016) that protects them as much as possible from the negative consequences of patient suicide. Next, professionals have to be convinced that suicide prevention is a systems achievement, not the result of heroic individual actions. Applying principles derived from social norm dynamics, key suicide prevention behaviors and outcomes should be made visible and used to learn and improve across the organization. Finally, in collaboration with patients, professionals have to be supported in the redesign and implementation of key routines and processes. In summary: improving suicide prevention in specialist mental healthcare is a major patient and staff safety objective that warrants the systematic application of principles of implementation science.

7.3 Conclusion

As this thesis shows, improvement of the quality of healthcare suicide prevention is a process that takes time, coordination and continuous pressure to build momentum. In the course of ten years apparently small but important steps have been made in the Netherlands to improve the care for the population of people at risk of suicide. In this period 113 has developed into the lead suicide prevention agency that offers not only online help and support, but also promotes and monitors health care suicide prevention. Suicide prevention is now spearheaded explicitly in major government and mental healthcare policies. Apparently modest results may prove important in reaching the tipping point that separates a mindset of resigned acceptance of suicide from a mindset of active prevention of suicide. Lack of “quick wins” should therefore not discourage but inspire to sustain and enhance efforts, for suicide is a disaster and every life counts. To quote Shih-Cheng Liao, a Taiwanese colleague: “It is a long road to Zero Suicide. Therefore, we have to start walking today.”
References


