Supporting Suicidal Patients After Discharge from the Emergency Department

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ABSTRACT

Objective: To provide a review of emergency department (ED)-based psychosocial interventions that support adult patients with an identified suicide risk towards a goal of reducing subsequent suicidal behavior through the period after discharge, which is known to be a time of high risk for suicidal behavior.

Methods: Non-systematic review of the literature.

Results: Multiple methods of engaging patients after discharge from the ED have been shown to reduce subsequent suicidal behaviors. These methods include sending caring letters in the mail, facilitating supportive phone conversations, case management, and protocols that combine different services. Overall, the existing literature is insufficient to recommend widespread adoption of any individual strategy or protocol. However, providing psychosocial and emotional support to patients with an identified suicide risk after they are discharged from the ED is feasible and may reduce subsequent suicidal behaviors. Templates for providing supportive outreach using different modalities now exist, and these may help guide the ongoing development and widespread adoption of more effective and cost-effective solutions.

Conclusion: Many ED–based interventions that provide enhanced support to patients with suicide risk after they are discharged have demonstrated a potential to reduce the risk of future suicidal behavior.

Key words: suicide; emergency department.

Despite the fact that emergency department (ED) providers often feel unprepared to manage suicide risk, patients with significant suicide risk frequently receive care in EDs, whether or not they have sustained physical injuries resulting from suicidal behavior [1,2]. Patients make greater than 400,000 visits to EDs in the United States each year for suicidal and self-injurious behaviors (suicide attempts and self-injurious behaviors are typically coded in ways that make them indistinguishable from each other in retrospective analyses) [3], and it is estimated that 6% to 10% of all patients in EDs endorse suicidal ideation when asked, regardless of their original chief complaints [4]. Meanwhile, suicide has become the 10th leading cause of death in the United States [5], and the Joint Commission has charged all accredited health care organizations with providing comprehensive treatment to suicidal patients, which may range from immediately containing an acute risk to ensuring continuity of care in follow-up [5].

When an acute suicide risk is identified in the ED, the provider’s immediate next steps should be to place the patient in a safe area under constant observation and to provide an emergency assessment [5,6]. Although psychiatric consultation and/or psychiatric admission may follow this assessment, suicide risk does not require admission in all cases; and some patients with suicide risk may be discharged to an outpatient setting even without receiving a psychiatric consultation [1]. Regardless of whether an outpatient disposition from the ED is appropriate, however, the period that immediately follows discharge is a time of high risk for repeated suicidal behavior and suicide death [7–9], and only 30% to 50% of patients who are discharged from EDs after a self-harm incident actually keep a follow-up mental health appointment [9,10]. Therefore, any support given to patients through this transition out of the emergency care setting could be especially high-yield.

The Joint Commission recommends that all patients with suicidal ideation receive, at minimum, a referral to treatment, telephone numbers for local and national...
crisis support resources (including the National Suicide Prevention Lifeline 1-800-273-TALK), collaborative safety planning, and counseling to restrict access to lethal means upon discharge [5]. However, some programs have demonstrated the capacity to provide enhanced support to patients beyond discharge from the ED, with some success in reducing the rates of subsequent suicidal behaviors. This non-systematic review describes interventions that can be initiated in the context of an ED encounter with the purpose of reducing future suicidal behavior among adult patients. They are primarily psychosocial rather than clinical. Clinical interventions that apply psychotherapy [11–13] psychopharmacology [14], and specialized inpatient treatments [15] have been studied as well but are beyond the scope of this review.

Interventions to Support Patients At Risk of Suicide After Discharge from the ED

Brief Contact Interventions

The idea that maintaining written correspondence with patients who have a known suicide risk after discharge can reduce subsequent suicide rates originated with a study of psychiatric inpatients conducted by Motto and Bostrom, in which patients who had been admitted for depression but had declined outpatient treatment were randomly assigned to periodically receive letters containing supportive messages from staff members over a period of 5 years [16]. This study remarkably found that these so-called brief contact interventions (BCIs), which were personalized to each recipient but did not contain psychotherapy per se, were associated with a reduced rate of suicide throughout the duration of the program compared with no written contacts [16].

BCIs have since been adapted to other communication formats and have been studied in patients who were discharged directly from the ED after an evaluation of suicide risk or suicidal behavior. Typically, BCIs consist of short, supportive messages that are delivered at regular intervals (often once every 1–2 months) over a period of 1 to 5 years [17,18]. They notably do not contain psychotherapy content, although they may reinforce coping strategies or remind recipients of how to access help if needed [17,19].

Protocols that rely on BCIs alone vary in their structure and have yielded mixed results [18]. A meta-analysis of 12 BCI protocols conducted by Milner et al found that, overall, BCIs administered after a presentation to the ED for self-harm have been associated with a significant reduction in repeat suicide attempts per recipient but not in total suicide deaths [27]. Milner’s group did not recommend large-scale promotion of BCIs based on the inadequacy of data so far, but suggested that this strategy may yet show promise upon further study [27]. A key advantage of BCIs is that they are inexpensive to implement, particularly if they do not include a telephone outreach component [28]. Thus, even if the potential benefit to patients is small, administering BCIs can be cost-effective [28].

It should not come as a surprise, therefore, that the potential for incorporation of BCIs into mobile smartphone technology is currently under investigation. Individuals who own mobile phones typically keep them on their persons and turned on continuously, and thus this is a reliable platform for maintaining contact with a wide range of patients in real-time [17,29]. Developers of at least 2 BCI smartphone programs that rely on mobile text messaging have published their protocols [17,30]. However, whether these programs will succeed in meaningfully reducing suicide rates remains to be determined by future research.

Green Cards

Morgan et al conducted a study in the United Kingdom in which individuals who presented to EDs after a self-harm event received a “green card,” which contained encouraging messages about seeking help and provided contact information for emergency services with 24-hour availability [31]. The green card also facilitated access to a crisis admission if necessary. The green card was distributed first in the ED and a second time by mail 3 weeks later. No suicides occurred in either the intervention or control group, which received usual care, and no statistically significant differences in suicide reattempt rate were found between groups after 1 year [31].

Evans et al studied an updated version of the green card intervention in which the green card facilitated access to an on-call psychiatrist with 24-hour avail-
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ability by telephone [32]. The updated card included encouraging messages about seeking help similar to the original green card described by Morgan; however, the psychiatry consultation via telephone replaced the offer of hospital admission [32]. This second trial of green cards also failed to show a reduction in the rate of suicide reattempts among green card recipients at 6 months and 1 year [32,33].

Table. Clinical Trials of Interventions to Support Patients At Risk of Suicide After Discharge from the ED

<table>
<thead>
<tr>
<th>Study</th>
<th>Intervention</th>
<th>Number of Contacts</th>
<th>Duration (months)</th>
<th>Population</th>
<th>Primary Outcome</th>
<th>Statistically Significant Benefit (Y/N)*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Carter et al [20]</td>
<td>Postcard</td>
<td>8</td>
<td>12</td>
<td>Suicide attempt</td>
<td>Suicide reattempters and reattempts</td>
<td>N (reattempts), Y (reattempts)</td>
</tr>
<tr>
<td>Hassanian-Moghaddam et al [21]</td>
<td>Postcard</td>
<td>8-9</td>
<td>12</td>
<td>Suicide attempt</td>
<td>Suicidal ideation, suicide reattempts, self-cutting</td>
<td>Y (suicidal ideation and suicide reattempts), N (self-cutting)</td>
</tr>
<tr>
<td>Vaiva et al [23]</td>
<td>Telephone</td>
<td>1</td>
<td>1-3</td>
<td>Suicide attempt</td>
<td>Suicide reattempters, suicide deaths, losses to follow-up</td>
<td>N</td>
</tr>
<tr>
<td>Cebria et al [24]</td>
<td>Telephone</td>
<td>6</td>
<td>12</td>
<td>Suicide attempt</td>
<td>Suicide reattempt, time elapsed to suicide attempt</td>
<td>Y</td>
</tr>
<tr>
<td>Cedereke et al [25]</td>
<td>Telephone</td>
<td>2</td>
<td>12</td>
<td>Suicide attempt</td>
<td>Treatment attendance, suicide reattempt</td>
<td>N</td>
</tr>
<tr>
<td>Morgan et al [31]</td>
<td>Green Card</td>
<td>2</td>
<td>12</td>
<td>Suicide attempt</td>
<td>Suicide reattempt</td>
<td>N</td>
</tr>
<tr>
<td>Evans et al [33]</td>
<td>Green Card</td>
<td>1</td>
<td>12</td>
<td>Suicide attempt</td>
<td>Suicide reattempt</td>
<td>N</td>
</tr>
<tr>
<td>Fleischmann et al [34]</td>
<td>BIC</td>
<td>9</td>
<td>18</td>
<td>Suicide attempt</td>
<td>Suicide death</td>
<td>Y</td>
</tr>
<tr>
<td>Amadeo et al [38]</td>
<td>BIC</td>
<td>9</td>
<td>18</td>
<td>Suicide attempt</td>
<td>Suicide reattempt</td>
<td>N</td>
</tr>
<tr>
<td>Miller et al [40]</td>
<td>ED-SAFE</td>
<td>11</td>
<td>12</td>
<td>Suicide attempt or ideation</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td>Kawanishi et al [42]</td>
<td>CM</td>
<td>7+</td>
<td>18</td>
<td>Suicide attempt</td>
<td>Suicide reattempt</td>
<td>Y (up to first 6 months, then N)</td>
</tr>
<tr>
<td>Morthorst et al [44]</td>
<td>CM</td>
<td>4+</td>
<td>6</td>
<td>Suicide attempt</td>
<td>Suicide reattempt, suicide deaths</td>
<td>N</td>
</tr>
<tr>
<td>Johannessen et al [45]</td>
<td>Baerum Model</td>
<td>Not reported</td>
<td>12</td>
<td>Suicide attempt</td>
<td>Suicide reattempt, suicide deaths</td>
<td>N</td>
</tr>
<tr>
<td>Hvid et al [47]</td>
<td>OPAC</td>
<td>8 (average)</td>
<td>6</td>
<td>Suicide attempt</td>
<td>Suicide reattempt, suicide deaths, suicidal behaviors</td>
<td>Y (reattempt, behaviors), N (suicide deaths)</td>
</tr>
</tbody>
</table>

BIC = World Health Organization Brief Intervention and Contact protocol; CM = case management; OPAC = Outreach, Problem Solving, Adherence, and Continuity program.

*Statistically significant benefit refers to primary outcome.
Brief Intervention and Contact
The World Health Organization’s Brief Intervention and Contact (BIC) protocol is a standardized, multi-step suicide prevention program that has been studied primarily in patients who present to EDs after a suicide attempt in middle-income countries [34]. BIC includes a 1-hour information session that is administered shortly prior to discharge, and subsequently provides 9 follow-up contact interventions at specified intervals over an 18-month period. Unlike in a typical BCI, the contacts in BIC are conducted by a clinician either face-to-face or over the phone and include standardized assessments of the patient’s condition, although they still do not include psychotherapy. BIC has been shown to reduce suicide attempts, suicide deaths, or both in India [34–36], Iran [34,36,37], China [34,36], Brazil [34,36], and Sri Lanka [34,36] but was not found to directly improve clinical outcomes in a study conducted in French Polynesia [38]. A meta-analysis conducted by Riblet et al concluded that BIC is effective in reducing suicide risk overall [39].

ED-SAFE
The Emergency Department Safety Assessment and Follow-up Evaluation (ED-SAFE) protocol was validated in 8 EDs in 7 states in the US that did not already provide psychiatric services internally [40]. Under this model, all patients in the ED receive a screening for suicide risk, and those with an initial positive screen receive a secondary screen administered by the ED physician, a self-administered safety plan, and a series of up to 11 phone contacts over the following year that are administered by trained mental health clinicians in a central location. The ED-SAFE phone contacts follow the Coping Long Term with Active Suicide Program (CLASP) protocol [41] and provide support around safety planning and treatment engagement. They have the capacity to engage the patients’ significant others directly if a significant other is available and the patient chooses to involve that person.

In a single multicenter study, ED-SAFE reduced the absolute risk of suicide attempt by 5%, and the relative risk by 20% compared to usual treatment [40]. An intermediate phase of the study compared the universal suicide screening alone (ie, without the safety plan or follow-up contacts) with usual care and did not find this to improve outcomes [40].

Case Management
Kawanishi et al conducted a randomized controlled trial of assertive case management, the ACTION-J study, for patients with psychiatric diagnoses who presented with self-harm to 17 participating EDs in Japan [42]. In the ACTION-J study, case managers were mental health clinicians who provided clinical evaluations, treatment planning, encouragement, and care coordination over the course of 7 scheduled face-to-face or phone contacts in the first 18 months, and additional contacts at 6-month intervals until the completion of the trial (up to a total of 5 years) [43]. The comparison intervention, enhanced usual care, consisted of psychoeducation provided at the time of the encounter in the ED without case management services. The assertive case management intervention was associated with a decrease in suicidal behavior in the first 6 months but not for the duration of the study, except in women, for whom the benefit lasted the full 18 months [42]. A subsequent analysis also found a decrease in the total number of self-harm episodes per person-year compared to enhanced usual care, although there was not a difference in the number of participants who experienced a repeat self-harm episode [43]. The benefit was most strongly pronounced among patients who had presented with an index suicide attempt [43].

Morthorst et al applied an alternative case management model for the assertive intervention for deliberate self harm (AID) trial, which took place in Denmark [44]. Participants were aged 12 and older and could have been recruited from medical or pediatric inpatient units as well as the ED after a self-harm event. AID employed psychiatric nurses to provide crisis intervention, crisis planning, problem solving, motivational support, family mediation, and assistance with keeping appointments over a period of 6 months following discharge. Outreach took place over the phone, by text message, in participants’ homes, in cafes, and at health and social services appointments. The intervention required at least 4 contacts, although additional contacts could be made if appropriate. In comparison with a control group, in which participants received only usual care (which included ready access to short-term psychotherapy), the AID intervention was not associated with statistically significant differences in recurrent suicidal behaviors [44]. Subgroup analyses ex-
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...mining adult participants aged 20–39 and 40 and older also did not find differences in recurrent suicidal behavior between groups [44].

**The Baerum Model and OPAC**

A municipal suicide prevention team that provides comprehensive social services to suicide attempters has operated in Baerum, Norway, since 1983 [45]. Under the Baerum model, patients who attempt suicide, can be discharged from the general hospital without psychiatric admission, and are determined to have a high level of need for support are connected by a hospital-based suicide prevention team to a community-based team consisting of nurses and a consulting psychologist, who subsequently engage patients in own their homes and through follow-up phone calls. The services they provide include care coordination, encouragement, activation of social networks, psychological first-aid, and counseling focused on problem-solving. The ostensible goal of the suicide prevention team is to provide a bridge between inpatient medical care and outpatient mental health treatment; however, the intervention lasts approximately 1 year regardless of whether the patient connects with a treatment program [45].

A retrospective comparison of outcomes between recipients of the original Baerum program and non-recipients failed to find a difference in suicide attempts or suicide deaths between groups [45]. However, this was not a controlled study, and suicide attempters were preferentially referred to the program based on whether they had a higher level of need at baseline. Hvid and Wang adapted this model to patients who presented to EDs and general hospitals in Amager, Denmark [46] and have since conducted a series of randomized controlled trials comparing their adaptation to usual care. The Danish version of the Baerum model, renamed OPAC (for “outreach, problem solving, adherence, continuity”), provides similar case management and counseling services but for a maximum of 6 months. In their studies, OPAC significantly reduced the number of patients with a repeat suicide attempt and the total number of repeat suicide attempts at a 1-year interval, and this effect on total number of suicide attempts was sustained at 5 years [47,48]. Although the OPAC protocol begins with a patient’s presentation to the ED, the intervention is initiated after admission to the general hospital. Therefore, while this may inspire a model that provides similar services directly from the ED to patients who do not require general hospital admission, the existing model is not entirely based in the ED.

**Discussion**

The needs of suicidal patients are often multidimensional, and in some cases their risks are driven by psychosocial problems in addition to, or instead of, medically modifiable psychiatric conditions [49]. However, developing an ED-based program to support patients who are at risk of suicide after they are discharged from the ED is possible. Many such programs that provide or facilitate caring contacts, family support, case management, and/or treatment engagement with discharged patients have demonstrated that similar strategies may have the potential to impact future suicidal behavior. Nonetheless, it would be a stretch to say that all hospital systems should immediately begin doing so.

A new post-discharge support program is an investment of financial resources, personnel, and sometimes technology. Successful delivery of support or messages in any format requires that the intended recipient be able to receive it via reliable access to a working address, telephone number, or electronic device. Nonetheless, programs that rely on BCIs alone (excluding those conducted via telephone) cost relatively little to implement and thus would require a smaller investment than programs that require synchronous telephone or face-to-face contacts with staff in addition to or instead of BCIs. Costs for synchronous programs will also vary depending on the frequency and duration of contacts and the licensure and training required of the staff who provide them.

A trend toward better outcomes associating with more resource-intensive programs is easy to imagine but has not been definitively demonstrated. The wide variation between protocols in all types of programs makes comparisons between those that do and do not include synchronous contacts, and between types of synchronous contacts, difficult. Meanwhile, the low cost of BCIs alone could increase their attractiveness as an investment regardless of the magnitude of outcome improvement.

Denchev et al constructed a cost/benefit comparison...
model that included the postcard BCI study conducted by Carter et al [20], the telephone outreach study conducted by Vaiva et al [23], and a study of cognitive behavioral therapy (CBT) [11], all of which showed a clinical benefit. This model relied upon some numeric estimations and did not account for variation in outcomes between individual studies of each intervention strategy. However, it concluded that both telephone outreach and CBT were likely to be cost-prohibitive compared to asynchronous BCIs, which were associated with a reduction in costs overall [28].

**Conclusion**

There remains much to learn regarding how best to reduce suicide risk among adult patients in the period after discharge from the ED, during which patients with an identified suicide risk are known to be vulnerable. However, providing psychosocial and emotional support to patients with an identified suicide risk after they are discharged from the ED is feasible and may reduce subsequent suicidal behaviors. Templates for providing supportive outreach using different modalities now exist, and these may help guide the ongoing development and widespread adoption of more effective and cost-effective solutions.

**References**


