# The P4 Screener: Evaluation of a Brief Measure for Assessing Potential Suicide Risk in 2 Randomized Effectiveness Trials of Primary Care and Oncology Patients

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## Abstract

### Background:

Depression is the most common mental disorder, and suicide is its most serious consequence. The primary objective of this study was to evaluate preliminary evidence for the P4 screener as a brief measure to assess potential suicide risk.

### Method:

The P4 screener was prospectively evaluated in 2 randomized effectiveness trials of primary care (January 2005–June 2008; N = 250) and oncology patients (March 2006–August 2009; N = 309). Potential suicide ideation was assessed at 5 time points in both trials: baseline and 1, 3, 6, and 12 months. The P4 screener asks about the "4 P's": *past* suicide attempts, suicide *plan*, *probability* of completing suicide, and *preventive* factors. Patients were classified as minimal, lower, and higher risk based upon responses to these 4 items.

### Results:

A suicide assessment was triggered 1 or more times by 17.6% (44 of 250) of Stepped Care for Affective Disorders and Musculoskeletal Pain (SCAMP) participants and 16.5% (51 of 309) of Indiana Cancer Pain and Depression (INCPAD) participants at some point in the trial. Of the patients who triggered a suicide assessment, the majority (29 of 44 in SCAMP and 27 of 51 in INCPAD) were classified as minimal risk by the algorithm. Only 1 (0.4%) of the SCAMP participants and 5 (1.6%) of the INCPAD participants were classified as higher risk. Among the latter, the most common factors preventing patients from attempting suicide were the "4 *F*'s": *faith*, *family*, *future* hope, and *fear* of failing in their attempt.

**Conclusions:**

Preliminary findings suggest that the P4 screener may be useful in assessing potential suicide risk in the clinical care of depressed patients as well as in clinical research.

**Trial Registration:**

clinicaltrials.gov Identifier: NCT00118430 (SCAMP) and NCT00313573 (INCPAD)

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Suicide is the eleventh leading cause of death in the United States, with roughly 30,000 lives lost per year.[1] Globally, there were over 1 million deaths to suicide in 2000, or approximately 16 suicides per 100,000 individuals. Depression is the most prevalent and disabling mental health disorder and the leading risk factor for suicide. Other risk factors include alcohol and substance abuse, older age, male gender, social isolation, family history of suicide, past attempts, access to lethal arms, hopelessness, and chronic medical and neurologic disorders.

A number of studies have focused on suicidality among adults in primary care,[2–8] adolescents,[9,10] the elderly,[11–14] and cancer patients.[15–19] However, these studies have principally focused on the prevalence of and risk factors for suicidal ideation rather than an explicit assessment strategy.

To date, there is no single recommended method to screen for suicidality.[1] There have been single studies that have used 1 or a few questions inquiring directly about suicidal ideation.[4,7,10] There are several longer scales such as the Beck Scale for Suicidal Ideation (21 items),[20] the Columbia Suicide Severity Rating Scale (18 items),[21] the Sheehan Suicide Tracking Scale (8 items),[22] and the Nurses' Global Assessment of Suicide Risk (15 items).[23] In addition to the length

of the scales, their scoring is more complicated, and they have often been tested in psychiatric rather than in general medical populations. A few studies have used more complex algorithms to assess suicidality.[11,24] A simpler algorithm that helped inform the P4 screener was developed by Cole and colleagues.[25]

Suicidal ideation is often unrecognized in primary care or medical specialty settings due to an inability of patients to articulate their feelings to their health care providers and a discomfort among non–mental health clinicians to ask about such feelings.[26,27] The additional concern that asking about suicidal thoughts may actually trigger suicidal ideation and behavior is unfounded.[9] Although asking about suicide when identifying and treating depressed patients is considered standard of care, competing demands in medical practice create particular barriers to interview techniques that require prolonged probing.[28] The sensitivity and discomfort surrounding suicide assessment and overestimates of how often urgent mental health referral may be required further accentuate these barriers. Surprisingly, there is even inconsistency in the degree to which psychiatrists ask about and document suicidal ideation in routine clinical practice, an omission which can be improved by the use of brief assessment measures.[29,30]

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### Clinical Points

♦The P4 screener assesses suicide risk by asking about the "4 *P*'s": *past* suicide attempts, a *plan*, *probability* of completing suicide, and *preventive* factors.

♦Most participants in clinical trials of depressed medical patients who acknowledge thoughts of self-harm are ultimately classified as low risk by the P4 screener.

♦To address the need for an efficient yet valid means of assessing suicide risk in medical populations, this article describes the findings from 2 randomized controlled trials regarding a brief algorithm that has evolved over the course of 6 randomized effectiveness depression trials conducted by our research group in the past decade. Core items emerged from the first 4 trials leading to a standard algorithm that was prospectively evaluated in more detail in our 2 most recent trials.

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## METHOD

### Developmental History of the P4 Screener

The P4 screener (Figure 1) was initially developed and refined in 4 earlier

trials[31]–[34] and subsequently tested in its final form in the 2 most recent trials.[35,36] Some of the P4 items were originally developed by Cole and colleagues for use by primary care physicians.[25] As summarized in Table 1 all 6 trials were effectiveness trials conducted in medical populations, of which 4 were situated in primary care and 2 in specialty settings. A total of 3,523 participants were enrolled from 146 practices and followed for 6 to 24 months. The intervention was a collaborative care approach to enhance depression treatment (typically with a nurse care manager supervised by a physician specialist) in 5 trials and an open-label active comparator design in 1 trial. The control group received usual care in 4 trials, nonspecific attention in 1 trial, and an active comparator in 1 trial. Only 2 of the trials—IMPACT (Improving Mood-Promoting Access to Collaborative Treatment)[32] and RESPECT (Re-Engineering Systems in Primary Care Treatment of Depression)[33]—have published data related to suicidality among their study participants, and these trials have focused principally on risk stratification and predictors as well as the effects of depression treatment rather than on the algorithm itself.[6,12,13]

Each of the 6 trials had a structured assessment for assessing suicide risk that was triggered when patients endorsed potential thoughts of self-harm during baseline or follow-up interviews, typically by a positive response to the question about self-harm on the Hopkins Symptom Checklist 20-item depression scale[37] (HSCL-20, item 13), the Patient Health Questionnaire 9-item depression scale[38] (PHQ-9, item 9), or the Structured Clinical Interview for *DSM-IV-TR* Axis I Disorders[39] (item 9). As shown in the length of algorithms varied considerably among the trials, ranging from quite brief (3 items in the IMPACT algorithm) to lengthier (10–16 items in the RESPECT algorithm). However, 4 questions emerged as core items, all of which were included in algorithms used in the 4 most recent trials. These 4 core items (the "4 *P*'s") include questions about *past* attempts, suicide *plans*, *probability* of completing suicide, and *preventive* factors.

### Testing of the P4 Screener in the SCAMP and INCPAD Trials

A structured algorithm was used in the SCAMP (Stepped Care for Affective Disorders and Musculoskeletal Pain) and INCPAD (Indiana Cancer Pain and Depression) trials on the basis of experience in the first 4 trials. Both trials are registered in clinicaltrials.gov (identifier: NCT00118430 [SCAMP] and NCT00313573 [INCPAD]). SCAMP enrolled primary care patients with clinically significant depression and comorbid chronic musculoskeletal pain from January 2005 to June 2008. Of 756 eligible patients, 250 consented and were randomized to a collaborative care intervention or usual care. The intervention

was administered by a nurse-physician team, which delivered optimized antidepressant therapy and a pain self-management program. The mean age of the SCAMP participants was 55.5 years; 52.8% were women; 60.4% were white, 36.4% were black, and 3.2% were other.

INCPAD enrolled patients with cancer-related pain or depression who were receiving care in community-based oncology practices from March 2006 to August 2009. Of 616 patients in which eligibility could be ascertained, 405 were randomized to a telecare-based collaborative care intervention or usual care; 309 of the 405 patients were depressed and are the focus of this article. The intervention was administered by a nurse-psychiatrist team, which optimized antidepressant and analgesic management. The mean age of the INCPAD participants was 55.5 years; 52.8% were women; 79.5% were white, 18.0% were black, and 2.5% were other.

As shown in the algorithm guided interviewers in both SCAMP and INCPAD to ask about the 4 *P*'s—past history, plan, probability, and preventive factors—and several clarifying questions; the latter were asked at the interviewer's discretion. An algorithm form was completed if a suicide assessment was triggered at any of the 5 scheduled research interviews (baseline or 1, 3, 6, or 12 months) or during a scheduled clinical assessment by a nurse care manager (SCAMP) or by automated depression monitoring (INCPAD). In addition to the closed-ended questions, there were 2 open-ended questions that asked patients to describe their plan of action and any protective factors that prevented them from carrying it out.

Patients in whom the suicide algorithm was triggered were classified into 3 risk categories based upon responses to the P4 screener questions. *Minimal risk* patients were those who had neither a past history nor a suicide plan and also responded "not at all likely" to the question about probability of an attempt. *Lower risk* patients were those who indicated they had a plan and/or past history but responded "not at all likely" to the question about probability and noted there were factors preventing them from taking action. *Higher risk* patients were those who reported the probability of a suicide attempt as either "somewhat likely" or "very likely" and/or reported there were no factors preventing them from taking action.

## Analysis

We tabulated the number of times the suicide assessment algorithm was triggered in the SCAMP and INCPAD trials. Since some patients triggered the suicide assessment multiple times over the 12-month trials, we also determined the

number of patients who triggered the suicide assessment at least once and the proportion of patients classified as minimal, lower, and higher risk. Responses to the 2 open-ended questions about suicide plans and preventive factors were independently coded by 2 investigators trained in qualitative research. This coding resulted in 5 categories each for suicide plans (overdose, firearms, vehicular accidents, cutting self, other) and preventive factors (family, future hope, religious faith, fear of failure, other).

## RESULTS

### Frequency of Suicide Assessments

There were a total of 1,144 interviews at the 5 time points in SCAMP and 1,667 in INCPAD. A suicide assessment was triggered in 69 (6%) of the interviews in SCAMP and 83 (5%) in INCPAD. The likelihood of triggering a suicide assessment declined slightly after the first month and then remained stable. For example, the proportion of interviews triggering a suicide assessment in INCPAD at baseline and 1, 3, 6, and 12 months was 8.1% (25/309), 8.2% (22/269), 5.3% (13/246), 5.4% (12/223), and 5.5% (11/202), respectively. A similar temporal pattern was observed in SCAMP.

### Suicidal Risk Stratification

Figure 2 outlines the risk stratification of patients from both trials who triggered the suicide algorithm. Since some patients triggered the algorithm more than 1 time during their 5 assessments in the trial, the total number of unique patients triggering the assessment in is less than the total number of interviews in which an assessment was triggered (). A suicide assessment was triggered 1 or more times by 17.6% (44 of 250) of SCAMP participants and 16.5% (51 of 309) of INCPAD participants. Thus, about 1 in 6 patients in both trials (1 enrolling depressed primary care patients with chronic pain and the other enrolling depressed patients with cancer of whom 56% had comorbid pain) triggered a suicide assessment when interviewed up to 5 times over a 12-month period.

Of the patients who triggered a suicide assessment, the majority (29 of 44 in SCAMP and 27 of 51 in INCPAD) were classified as minimal risk by our algorithm, meaning they had no past attempt or current plan and reported the probability of hurting themselves as "not at all likely." Most of the remaining patients were classified as lower risk, meaning that although they reported a past history and/or plan, they considered the probability of hurting themselves as "not at all likely" and reported factors preventing them from taking action. Only 1

(0.4%) of the SCAMP patients and 5 (1.6%) of the INCPAD patients were classified as higher risk, defined as a self-assessed probability of self-harm as "somewhat likely" or "very likely" and/or an absence of factors preventing the patient from taking action.

A suicide assessment was triggered during only 1 interview by 65 patients, in 2 interviews by 18 patients, and in 3 or more interviews by 12 patients. In the 30 patients who triggered a suicide assessment more than once, the risk class remained constant in 19 patients and changed across interviews in 11. The risk class went down in 4 patients over time, went up in 5, and changed directions twice in 2.

Of note, there were an additional 250 nondepressed patients with chronic pain in SCAMP who were assessed at baseline and 3 and 12 months as part of a secondary cohort study, and there were 96 nondepressed cancer patients with pain in INCPAD who were assessed at baseline and 1, 3, 6, and 12 months. In both trials, all participants underwent an identical assessment battery including depression measures. The number of patients who triggered the suicide assessment in these nondepressed pain groups was only 7 (2.8%) in SCAMP and 5 (5.2%) in INCPAD, confirming the strong linkage between suicidal ideation and depression.

### Severity of Depression and Suicidal Risk Class

Since some patients triggered a suicide assessment more than once over the 12 months of follow-up in each trial, we examined depression severity at the interview level. Of 2,391 evaluable interviews in the SCAMP and INCPAD trials, a suicide assessment was triggered in 144 (6.0%). The mean participant HSCL-20 score across all interviews was 1.42, compared to a mean HSCL-20 score of 2.21 for the 83 interviews classified as minimal risk and 2.37 for the 62 interviews classified as lower (n = 53) or higher risk (n = 9); the latter 2 categories were combined because of the small number of interviews in the higher risk category. Depression was therefore more severe ($P < .0001$) in patients who triggered a suicide assessment, but did not differ significantly among the different risk categories in those who triggered an assessment.

### Suicide Plans and Preventive Factors

There were 58 suicide assessments in the 2 trials in which a specific plan was elicited from the patient. The most common plans involved medication overdose (n = 26), using a gun (n = 13), intentional vehicular accident (n = 8), and cutting

oneself (n = 7). There were 75 suicide assessments in the 2 trials in which the patients reported factors that would prevent them from harming themselves. The most common preventive factors were the "4 *F*'s": *family* (n = 46), *future* hope (n = 17), *faith* (n = 13), and *fear* of failing in their attempt (n = 6).

### Suicide Attempts

Table 2 reports data on suicide attempts and completed suicides for the 6 trials (1 trial only had data on suicide completions). In the 3,523 depressed patients enrolled in the 6 trials, there were only 2 known suicide attempts and no completed suicides. The 2 patients who attempted suicide did so by ingesting unknown quantities of medication and were in the earlier trials that led to the algorithm tested in SCAMP and INCPAD. Both had triggered a suicide assessment. The patient who attempted suicide in ARTIST (A Randomized Trial Investigating SSRI Treatment) did so shortly after study enrollment and had relatively severe depressive symptoms (PHQ-9 score of 20). The patient was determined to be low risk as a result of the assessment, primarily because he did not have a plan. The assessment was conducted approximately 5 days prior to the suicide attempt, and, therefore, the patient may not have been at high risk or suicidal at that time (K.K., MD, unpublished data, 2010). The patient who attempted suicide in RESPECT had been classified as intermediate risk on her baseline interview given her thoughts of self-harm but no active plan.[6] Her primary care physician already was treating her with paroxetine. After the overdose, the patient's primary care physician changed her pharmacotherapy to venlafaxine and referred her to a psychologist for psychotherapy as well.[6]

## DISCUSSION

Our study has several important findings. First, the probability of serious suicidality as manifest by high-risk suicidal ideation, suicide attempts, or suicide completions is quite low in clinically depressed primary care or medical specialty patients enrolled in depression treatment effectiveness trials. Second, a simple algorithm inquiring about the 4 *P*'s—past attempts, current plans, probability of an attempt, and preventive factors—can serve as a brief screen for risk stratification of patients identified as having potential thoughts of self-harm. Third, even in patients who have such thoughts, specific factors can often be identified that are currently preventing them from acting on their thoughts, the most common protective factors being the 4 *F*'s: family, future hope, faith, and fear of failing in their attempt.

The low rate of serious suicidal behavior manifest in our 6 trials was only slightly

higher in the PROSPECT trial of 598 patients with late-life depression, which was also conducted in a general medical population with an explicit aim of reducing suicide[40]; the PROSPECT trial had 3 suicide attempts and 1 completed suicide. A few cautionary points should be noted. All 6 of our effectiveness trials excluded patients considered to be seriously suicidal at baseline (of note, suicidal ideation was not included in eligibility criteria in PROSPECT).

Although this exclusion applied to very few potential study subjects, it means such patients would not have been enrolled in our effectiveness trials. While it is likely that such patients would be identified by the P4 screener, the rare occurrence of suicide attempts and completions in these clinical trials may underestimate true rates among the entire population of depressed patients in clinical practice. Also, all patients were enrolled in a clinical trial, which tends to enhance treatment beyond that which may occur in clinical practice settings. Clearly, screening for suicidal risk should be done in parallel with optimizing depression treatment.

A second limitation of our study was the rarity of actual suicide attempts. As noted, such events are uncommon in clinical practice and even rarer in clinical trials. Because of this, our findings must be considered largely descriptive until further validation occurs. Such efforts could include administration of the P4 screener to a sample of more seriously depressed patients (eg, psychiatric inpatients) or testing with a case-control design in which P4 responses are compared between patients with and without suicide attempts or suicidal behaviors. Also, comparing the performance of the P4 screener with longer suicidality scales is desirable.

Suicidal ideation is clearly an imperfect proxy for suicidal behavior. Certainly, some patients who are serious about committing suicide hide their plans from their family, friends, and clinicians or proceed to make an attempt even if their ideation is disclosed to or detected by the clinician. The fact that suicide remains an uncommon event relative to the prevalence of depression, particularly in patients receiving care in medical rather than psychiatric referral settings, makes it exceptionally difficult to gather sufficient data regarding the sensitivity and specificity of any measure in detecting actual suicide attempts. Even the data from multiple large trials that prompted the US Food and Drug Administration (FDA) to issue a black box warning about antidepressants and suicide risk were based much more on suicidal ideation than suicidal behavior.

Our study has several strengths. Although based on patients eligible and willing to enroll in clinical trials, the effectiveness design of the trials increases the

generalizability of our findings to clinical practice. In contrast to efficacy trials, effectiveness trials are more pragmatic with fewer exclusion criteria, are less tightly controlled "real world" administration of treatments, and include a wider spectrum of patients in terms of age, medical comorbidity, socioeconomic disparities, and other characteristics. A second strength is both the large number of patients studied (> 3,500) and the diversity of clinical settings, including both primary care and medical specialty populations. Third, the structured assessment algorithm and prospective data collection in the SCAMP and INCPAD trials allowed us to gather detailed quantitative and qualitative data that further inform us about the nature of suicidal ideation in depressed medical patients.

The availability of a brief measure for assessing suicidality is especially timely for several reasons. Depression screening has been recommended by the US Preventive Services Task Force as long as there are systems in place to enhance appropriate treatment.[41,42] Brief and even ultrabrief measures (2–4 items) have been found to have excellent operating characteristics for depression screening.[43,44] However, no comparable evidence-based brief screening measure to assess suicidal ideation has been proposed. In evaluating chest pain, physicians learn to risk-stratify patients with a few specific questions to identify the urgency of the situation as well as those patients needing referral and/or hospitalization. Similarly, clinicians would benefit considerably by having an efficient way for assessing suicide risk in depressed medical patients that can distinguish the rare patient that needs urgent "same-day" psychiatric evaluation from the majority of patients who can have either initial treatment and follow-up in the medical setting or referral to (or collaboration with) mental health specialists.

A second benefit to having a brief assessment tool relates to recent concerns by the FDA and others that initiating antidepressant therapy may be associated with a slight increased risk of suicidal ideation, particularly in adolescents and young adults.[45,46] The algorithm in provides a simple yet structured means of documenting suicide assessment, both for clinical and medicolegal purposes. Third, our work may inform current suicide prevention efforts in health care systems such as the Department of Defense and Veterans Health Administration. Military personnel and veterans, especially those returning from Iraq and Afghanistan, have been found to have higher suicide rates than the general population. For example, the Veterans Health Administration has implemented a new performance measure requiring a screen for suicidal ideation when veterans screen positive for depression.

Despite its public health importance, the degree to which suicide is preventable

remains uncertain.[1,47–51] Nonetheless, there is general agreement that asking about suicidal ideation is an indicator of high-quality depression care and should be the standard of practice. While only a small fraction of patients expressing suicidal ideation actually attempt suicide, the group as a whole is more seriously depressed and warrants more aggressive treatment and closer follow-up. The fact that depression is common while completed suicide is rare means that an individual clinician will encounter hundreds of depressed patients in his or her lifetime, yet (fortunately) will experience few or no completed suicides. This necessitates a brief approach to assessing suicide risk that conforms to the realities of a busy clinical practice,[27,52] wherein complex psychosocial issues can be especially burdensome.[53,54] In addition to time constraints, a lack of perceived competence or comfort in assessing suicidal ideation may be a barrier for some non–mental health clinicians, a factor that could be addressed by training in a structured assessment approach. To this end, the brief algorithm developed over the course of 6 randomized effectiveness trials may be a useful tool for clinicians, educators, and researchers.

*Drug names:* paroxetine (Paxil, Pexeva, and others), venlafaxine (Effexor and others).

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## Figures and Tables

### Figure 1

Have you had thoughts of actually hurting yourself?

NO            YES

4 Screening Questions ←

1. Have you ever attempted to harm yourself in the past?

NO           YES

2. Have you thought about how you might actually hurt yourself?

NO         YES → [How? _____ ]

3. There's a big difference between having a thought and acting on a thought. How likely do you think it is that you will act on these thoughts about hurting yourself or ending your life some time over the next month?

     a. Not at all likely     _____
     b. Somewhat likely    _____
     c. Very likely          _____

4. Is there anything that would prevent or keep you from harming yourself?

NO          YES → [What? _____ ]

| Risk Category | Shaded ("Risk") Response | |
| | Items 1 and 2 | Items 3 and 4 |
| --- | --- | --- |
| Minimal | Neither is shaded | Neither is shaded |
| Lower | At least 1 item is shaded | Neither is shaded |
| Higher | | At least 1 item is shaded |

Figure 1. P4 Screener for Assessing Suicide Risk[a,b]

[a]P4 is a mnemonic for the 4 screening questions: past suicide attempt, suicide plan, probability of completing suicide, and preventive factors. ©Copyright 2010 Kurt Kroenke, MD.

[b]Any individual who responds "yes" to a question about thoughts of self-harm is asked 4 additional questions—the 4 P's on past history, plan, probability, and preventive factors. Shaded responses are those that are more concerning for suicidal ideation.

## Table 1

Suicide Algorithms in 6 Randomized Clinical Effectiveness Trials for Depression in Medical Populations (N = 3,523 subjects)

| | ARTIST[31] | IMPACT[32] | RESPECT[33] | AIM[34] | SCAMP[35] | IN |
| --- | --- | --- | --- | --- | --- | --- |
| Characteristic | | | | | | |
| Patients, n | 573 | 1,801 | 404 | 186 | 250 | |
| No. of practices | 37 | 18 | 60 | 4 | 11 | |

| Clinical setting | Primary care | Primary care | Primary care | Neurology | Primary care | O |
|---|---|---|---|---|---|---|
| Population | All patients | Geriatric | All patients | Poststroke | Chronic pain | |
| Excluded if suicidal[a] | Yes | Yes | Yes | Yes | Yes | |
| Follow-up, mo | 9 | 24 | 6 | 9 | 12 | |
| Intervention group | SSRI antidepressant | Collaborative care | Collaborative care | Collaborative care | Collaborative care | Col |
| Control group | SSRI comparator | Usual care | Usual care | Attention control | Usual care | U |
| Randomization unit | Patient | Patient | Practice | Patient | Patient | |
| No. of algorithm items[b] | 3–8 | 3 | 10–16 | 4–10 | 6–14 | |
| **p4 Screener question** | | | | | | |
| Past attempts | + | + | + | + | + | |
| Plan | + | + | + | + | + | |
| Probability | + | | + | + | + | |
| Preventive factors | | | + | + | + | |
| **Other questions[b]** | | | | | | |
| Risk factors | | | | | | |
|   Owns gun | | | | + | + | |
|   Stockpiles pills | | | | + | + | |
|   Lives alone | | | | + | + | |
|   Impulsive | | | + | | + | |
|   Hopeless | | | + | | + | |
|   Uses alcohol | + | | | + | | |
|   Uses drugs | + | | | | | |
| When attempt is likely to occur | + | | | + | | |

| | |
|---|---|
| Recency of plan | + |
| Told someone of suicidal ideation | + |

[a]Patients deemed to be actively suicidal (threshold varied with trial) on eligibility interview were not enrolled but were referred for immediate care.
[b]Number of items (questions) asked in some algorithms could vary depending on positive responses and branching points in the algorithm.

Abbreviations: AIM = Activate-Initiate-Monitor, ARTIST = A Randomized Trial Investigating SSRI Treatment, IMPACT = Improving Mood—Promoting Access to Collaborative Treatment, INCPAD = Indiana Cancer Pain and Depression, RESPECT = Re-Engineering Systems in Primary Care Treatment of Depression, SCAMP = Stepped Care for Affective Disorders and Musculoskeletal Pain.

Symbol: + = item was asked as part of the suicide algorithm for that particular trial.
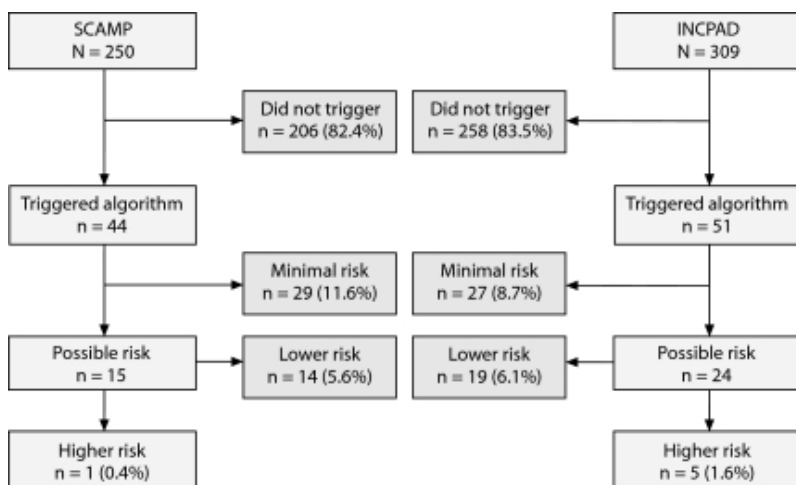
## Figure 2



Figure 2. Flow Diagram Showing Suicidality Risk Stratification of Subjects Enrolled in the SCAMP (primary care patients) and INCPAD (cancer patients) Trials[a]

[a]A suicide assessment is triggered by a positive response to a question or question(s) during the research interview about thoughts of self-harm. Subjects who triggered an assessment more than once during the trial are counted only once in the flow diagram and are classified in the highest risk category that they achieved. Minimal risk patients are those with neither a past history of or a current plan for a suicide attempt and who report their probability of attempting self-harm as "not at all likely." Lower risk patients report a past history and/or

current plan but indicate their probability of an attempt as "not at all likely" and report factors preventing them from taking action. Higher risk patients report their probability of an attempt as "somewhat likely" or "very likely" and/or an absence of factors preventing them from taking action.

Abbreviations: INCPAD = Indiana Cancer Pain and Depression, SCAMP = Stepped Care for Affective Disorders and Musculoskeletal Pain.

## Table 2

Suicidal Ideation, Suicide Attempts, and Suicide Completions in 6 Randomized Clinical Effectiveness Trials for Depression in Medical Populations (N = 3,523 subjects)

| Trial | Subjects, n | Duration (mo) | Suicidal Ideation More Than Minimal Risk (%) | Suicide Attempts (n) | Suicide Completions (n) |
|---|---|---|---|---|---|
| ARTIST[31] | 573 | 9 | 1.6 | 1 | 0 |
| IMPACT[32] | 1,801 | 24 | … | … | 0 |
| RESPECT[33] | 404 | 6 | 10.0 | 1 | 0 |
| AIM[34] | 186 | 9 | 4.8 | 0 | 0 |
| SCAMP[35] | 250 | 12 | 7.2 | 0 | 0 |
| INCPAD[36] | 309 | 12 | 8.7 | 0 | 0 |

Abbreviations: AIM = Activate-Initiate-Monitor, ARTIST = A Randomized Trial Investigating SSRI Treatment, IMPACT = Improving Mood—Promoting Access to Collaborative Treatment, INCPAD = Indiana Cancer Pain and Depression, RESPECT = Re-Engineering Systems in Primary Care Treatment of Depression, SCAMP = Stepped Care for Affective Disorders and Musculoskeletal Pain.

Symbol: … = no data.