

Using Quality Measures to Improve Mental Health: Screening for Depression and Suicide Risk in Primary Care Settings

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Adage

- It may be hard to turn down Tim Carey
- And it may be hard to turn down Kathy Lohr
- But it's impossible to turn down a request from both

Today's Objectives

- To demonstrate how the use of outcomes-based research has been instrumental in:
 - Improving the quality of mental health care in the general medical setting
 - Setting a clinically-relevant research agenda
- To use two Systematic Evidence Reviews as successful examples

Systematic Evidence Reviews: A Health Services Research Tool To Guide Clinical Decisions

- Systematic reviews are scientific investigations which synthesize the results of multiple primary investigations by using strategies that limit bias and random error
- They involve a comprehensive search of all potentially relevant articles and the use of explicit, reproducible criteria in the selection of studies for review
- Systematic reviews may be either *qualitative*, in which case results are summarized but not statistically combined, or *quantitative*, in which case statistical methods are used to combine the results of two or more studies (such as a meta-analysis)

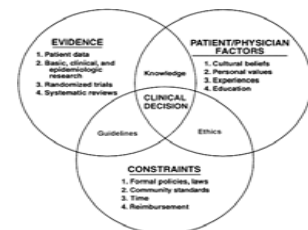
Difference between Narrative Reviews and Systematic Reviews

Feature	Narrative Review	Systematic Review
Question	Often broad in scope	Often a focused clinical question
Sources and search	Not usually specified, potentially biased	Comprehensive sources and explicit search strategy
Selection	Not usually specified, potentially biased	Criterion-based selection, uniformly applied
Appraisal	Variable	Rigorous critical appraisal
Synthesis	Often a qualitative summary	Quantitative summary*
Inferences	Sometimes evidence-based	Usually evidence-based

*A quantitative summary that includes a statistical synthesis is a meta-analysis.

From "Systematic Reviews: Synthesis of Best Evidence for Clinical Decisions,"
Annals of Internal Medicine, 1 March 1997; 126:376-380

Factors that enter into clinical decisions.



From "Systematic Reviews: Critical Links in the Great Chain of Evidence"
Annals of Internal Medicine, 1 March 1997; 126:389-391

Screening for Depression in Primary Care: A Report for the US Preventive Services Task Force

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Introduction

- Depressive disorders in primary care settings are common, with a point prevalence of major depression ranging from 4.8% to 8.6%
- The morbidity associated with depressive illness is substantial
 - World Health Organization estimates identify major depression as the fourth leading cause of worldwide disability in 1990
 - It is projected to the second leading cause of disability in 2020
- Mortality is also great—3.5% of those with major depression will commit suicide
- Many studies have shown that primary care physicians' usual care fails to recognize 30% to 50% of depressed patients
- Because patients who are unrecognized as depressed cannot be appropriately treated, some have advocated systematic screening as a means of improving the detection, treatment and outcomes of depression

Goals

- To address the evidence concerning whether systematic, routine screening for depression in adults is warranted, we conducted an updated systematic review.
- The results of the review were used to help guide the recommendations of the Third U.S. Preventive Services Task Force as they considered whether or not to recommend routine screening of depression.
- We developed three key questions:
 - How accurate are screening instruments for depression in primary care?
 - Does treatment in primary care patients improve outcomes?
 - Is routine screening more effective than usual care in improving clinical outcomes?

Methods

- Strategy
 - Searched MEDLINE database from 1994-2000 and used recent systematic reviews involving depression in primary care settings
 - Supplemented above with Cochrane database on depression, neurosis, and anxiety disorders; additional specific MEDLINE searches from 1966-1994; hand-searched bibliographies of systematic reviews, original articles; USPSTF second edition; and 1993 AHCPR Clinical Practice Guideline on Depression
 - Two authors independently reviewed titles and abstracts of articles identified by above and excluded those on which they agreed eligibility criteria not met
 - When initial reviewers disagreed, the authors reviewed full article to make final decision about inclusion by consensus

- Inclusion/Exclusion Criteria
 - articles published in English
 - patients in primary care or community setting
 - required a comparison group
 - screening accuracy: criterion standard
 - treatment: RCTs and meta-analyses of RCTs
 - screening outcome: usual care
 - Where possible, we tried to collate results according to whether depressive illness was major depression, dysthymia, or minor depression/subthreshold depression
- Summary Results
 - 2135 abstracts identified and reviewed
 - 466 articles were fully reviewed
 - 154 involved adults and were included in this report

Results: How Accurate are Screening Instruments?

- 44 articles identified involving 13 screening instruments
- Several instruments appear to detect depression effectively
- For Major Depression and Dysthymia: Sensitivity: 80-90% Specificity: 70-85%
- For Minor Depression, the few studies testing accuracy found lower sensitivity
- 2 question screens have similar sensitivity but somewhat lower specificity than longer tests
- Assuming 5-15% prevalence, Positive Predictive Value=24-50%
- People with positive screen require further diagnostic questioning before diagnoses made
- As a result, screens with low specificity that are easy to administer may be more useful than those with greater specificity but longer administration times

Does Treatment Improve Outcomes?

Psychopharmacologic Interventions

- 66 studies identified
- Major Depression
 - Intervention groups (48-63% response rates) were clearly superior to placebo (18-35% response rates)
 - Number Needed to Treat = 4
- Dysthymia
 - Probably effective relative to placebo in primary care (mean response rate 45-55% vs 30-40%, but only two studies in primary care)
 - Number Needed to Treat = 4
- Minor depression: limited evidence

Psychotherapeutic Interventions

- 15 studies identified
- Major depression:
 - clearly effective relative to control, with intervention response rates 41-72% vs. placebo 17-48%
 - as effective as antidepressant medication
- Dysthymia: one study shows minimal benefit
- Minor depression: limited evidence

Other Forms of Intervention

- Combination treatments: limited evidence
- Educational and Quality Improvement Interventions
 - 5 studies
 - all found improved outcomes, primarily in the more severely depressed patients

Does Screening Improve Outcomes?

Does Screening Result in Improved Outcomes for Depression?

- Ten studies measured the effect of screening and feedback on depression outcome
- Six studies found improved outcome for depression, while four found no difference

Summary of the Effect of Feedback from Screening on Patient Outcomes

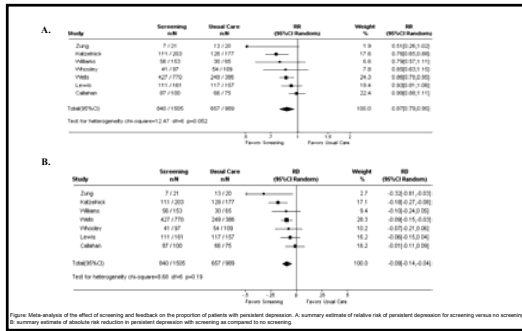
Author / Year	What measured	Outcomes		p-Value
		Intervention Value	Control Value	
Johnstone and Goldberg, 1976	Mean months of depression in 1 year	4.2	6.3	p< 0.01
Zung and King, 1963	% with >12 point decrease on SDS at 1 mo	66%	35%	p< 0.05
Williams et al., 1999	% depressed at 3 mos DSM-III-R criteria	37%	46%	p=0.19
	% with <1 DSM-III-R criteria symptoms (generally 3 mos)	48%	27%	p<0.05
Wells et al., 2000	% depressed at 6 mos	55.4%	64.4%	p=0.005
	% depressed at 12 mos	54.5%	61.4%	p=0.04
Katzelnick et al., 2000	% depressed at 12 mos	55%	72%	P<0.001
Rost et al., 2001	Increase in mCES-D	21.7	13.5	P=0.04

Summary of the Effect of Feedback from Screening on Patient Outcomes

Author / Year	What measured	Outcomes		p-Value
		Intervention Value	Control Value	
Callahan et al., 1994	% with HAM-D <10 at 6 months	13%	12%	NR
Lewis et al., 1996	Mean GHQ at 6 months	25.4 PROSQY 26.8 GHQ	25.9	P=0.12
Reifler et al., 1996	Zung scale score	No difference for those screening positive for any disorder		
Whooley et al., 2000	% depressed at 24 months (GDS ≥ 6)	42%	50%	P=0.30

Why Were the Results Mixed?

- Time when outcomes measured differed
 - Studies measuring only short-term outcomes often found positive effect, while those with longer time horizons may have had more difficulty showing effect
- Studies involved a spectrum of depressed patients
 - Severity of depression, confirmation of diagnoses, and age of patients varied
- The quality of usual care among the relevant studies may have differed
- Outcome measures differed
- There was wide variation in interventions tested
 - but those showing improvements tended to have system changes to help ensure adequate treatment and follow-up (Wells et al., 2000; Katzelnick et al., 2000)
- Inadequate power may have caused problems in some studies
 - For example, Williams et al (1999) and Wells et al (2000) found a similar 9% decrease in depression rate at follow-up, but only the latter was statistically significant
 - Because many trials had insufficient power to exclude the possibility of clinically significant changes in clinical outcomes, we performed a meta-analysis to determine a summary estimate of effect



Conclusions

- Accurate and feasible screening tests are available for detecting depressive disorders in adults
- Effective treatments are available for depression in primary care
 - For major depression, effective pharmacologic and psychotherapeutic interventions exist, and quality of care interventions have shown modest success
 - For dysthymia, pharmacologic interventions are probably effective

- The question of whether screening and feedback is superior to usual means of identification is controversial:
 - Screening in primary care can improve outcomes compared to usual care, but the effects are mixed
 - Quality improvement strategies aimed at ensuring adequate treatment may be particularly important in improving such outcomes

Outcome

- The US Preventive Services Task Force upgraded their recommendation to now recommend routine screening for depression in primary care

Screening for Suicide Risk in Primary Care: A Report for the US Preventive Services Task Force

Collaborators: Suzanne West, PhD¹; Carol Ford¹, MD; Paul Frame, MD², Jonathan Klein, MD³, Kathleen N. Lohr, PhD⁴

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Introduction

- Suicide is a major public health problem in the United States
 - 11th leading cause of death in the U.S., accounting for ~30,000 deaths annually with an age-adjusted rate of 10.7 per 100,000 persons
 - 7th leading cause of years of potential lives lost, with a total similar to years lost from perinatal deaths and greater than years lost from diabetes, liver disease, and HIV
 - The U.S. Surgeon general has produced a *call to action to prevent suicide*, which proposes completion of a national strategy to prevent suicide
- The risk of completed suicide is especially noteworthy in two age groups:
 - Individuals aged 65 and older, especially white males over 85 years (59/100,000)
 - Adolescents and young adults aged 15-24 years, for whom it is the third leading cause of death (10.3/100,000)

Introduction

- **Primary care physicians again play a key role:**
 - 45% of suicide victims had contact with primary care providers within 1 month of suicide, compared to about 20% having contact with mental health services
 - Primary care studies consistently identify 2-3% of patients who endorse suicide ideation with the prior month
 - They are at 10-fold higher risk of major depression, 5-fold higher risk of panic disorder, and 2-fold higher risk of an alcohol use disorder than primary care patients without suicidal ideation
 - Yet suicide ideation is more common than actual attempts, and attempts are 10-20 times more common than completed suicides
- **Accordingly, it's a complicated management question: it has a low prevalence in the general population (0.01%) and, despite a 10-fold increase in adults with depression, most depressed patients (99.9%) do not commit suicide**

Goals

- **To update the 1996 US Preventive Services Task Force systematic review by examining whether screening for suicide risk in primary care results in decreased morbidity, mortality, or both.**
- **The results of the review are being used to help guide the recommendations of the Third U.S. Preventive Services Task Force as they considered whether or not to recommend routine screening for suicide risk.**
- **We developed four key questions:**
 - Can a screening test reliably detect suicide risk in primary care populations?
 - For those identified as being at risk, does treatment result in decreased attempts and/or mortality? (ultimate health outcomes)
 - For those identified as being at risk does treatment result in decreased suicidal ideation or hopelessness, or improved functioning? (intermediate health outcomes)
 - Does screening for suicide risk in primary care settings result in decreased attempts and/or decreased morbidity? (the overarching question)

Methods

- **Strategy**
 - Searched MEDLINE database from 1994-2000 and used recent systematic reviews involving suicide risk in primary care settings
 - Supplemented above with Cochrane database; additional specific MEDLINE searches from 1966-1994; hand-searched bibliographies of systematic reviews, original articles; and USPSTF second edition
 - Two authors independently reviewed titles and abstracts of articles identified by above and excluded those on which they agreed eligibility criteria not met
 - When initial reviewers disagreed, the authors reviewed full article to make final decision about inclusion by consensus

- **Inclusion/Exclusion Criteria**
 - articles published in English
 - required a comparison group
 - screening accuracy: criterion standard; primary care setting
 - treatment: RCTs, meta-analyses of RCTs, cohort studies; in primary care or specialty care setting
- **Where possible, we tried to collate results according to age group (adolescent, adult, elderly ≥ 65 years)**
- **Summary Results**
 - 772 abstracts identified and reviewed
 - 43 were included in this report

Results: How Accurate are Screening Instruments?

- **1 article identified with test characteristics in primary care setting**
 - Gold standard was acknowledgement during a pre-screen structured interview as to whether the patient had a plan to commit suicide
 - "Thoughts of death in past month?": 100% sensitivity, 81% specificity, 56% PPV
 - "Wishing you were dead within the past month?": 92% sensitivity, 93% specificity, 14% PPV
 - "Feeling suicidal within the past month?": 83% sensitivity, 98% specificity, 30% PPV
- **No screening instruments in primary care have been tested for a high risk population (e.g., those with a prior history of suicide attempts), the group which has received the greatest amount of treatment study**

Does Treatment Decrease Suicide Attempts or Completions? Randomized Controlled Trials

- **All studies:**
 - involved patients with a prior history of deliberate self harm (DSH), an umbrella term that encompasses attempted suicide as well as self-harm without intention to kill
 - used Usual Care (UC) as a control group
- **Adults:**
 - Cochrane Review identified 21 studies involving subjects 16 years and older
 - Repetition of DSH served as the primary outcome
 - Interventions for which > 1 study were performed produced no statistically significant results
 - Nine additional studies of DSH involving various forms and intensities of treatment were identified:
 - Two trials involving a total of 160 patients showed a significant decrease in the % repeating DSH
 - Seven trials involving 3729 patients showed no significant difference

Does Treatment Decrease Suicide Attempts or Completions? Randomized Controlled Trials

- Children and Adolescents 17 years or younger:
 - Three RCTs with outcome repetition of DSH
 - Results not consistent

Does Treatment Decrease Suicide Attempts or Completions? Randomized Controlled Trials

- Geriatric Patients:
 - No published results
 - One study of geriatric primary care patient with depressive illness and suicidality is in the field

Does Treatment Decrease Suicide Attempts or Completions? Cohort Trials

- Adults (2 studies):
 - One nested case-control study studying the relationship between lithium use and suicide attempts for patients with a major mood disorder: NS
 - One cohort study of cognitive-behavioral therapy for ICU patients with recent suicide attempt: NS
- Children and Adolescents 17 years or younger (2 studies):
 - One 6-8 year cohort study of psychiatric inpatients vs. community control: no relationship between use of psychiatric services and suicide attempts
 - One ER-based study of education and therapeutic intervention for Latino females compared to control, without randomized assignment: NS
- Geriatric Patients: No published results

Does Treatment Improve Intermediate Outcomes (Suicidal Ideation, Hopelessness, or Functioning)? Randomized Controlled Trials

- Adults:
 - One systematic review
 - Two additional articles

Table 8. Outcome Data on Intermediate Outcomes for Randomized Controlled Trials Comparing Problem-solving Therapy v Standard Aftercare

Study ^a	Depression: Standardized Mean Difference (95% CI)	Hopelessness: Weighted Mean Difference (95% CI)	Improvement in Problems (yes/no): OR (95%CI)
Gibbons et al., 1978 ^b	-0.18 (-0.52, 0.15)	NR	2.74 (1.40, 5.36)
Hawton et al., 1987 ^c	-0.31 (-0.80, 0.18)	NR	1.38 (0.43, 4.47)
Salkovskis et al., 1990 ^d	-1.24 (-2.24, -0.25)	-3.25 (-5.31, -1.19)	NR
McLeavey et al., 1994 ^e	NR	0.50 (-4.51, 5.5)	NR
Evans K et al., 1999 ^f	-0.86 (-1.60, -0.13)	NR	NR
Patsikas and Clum, 1985 ^g	NR	-6.60 (-13.73, 0.53)	NR
Meta-analytic summary statistic	-0.36 (-0.61, -0.11)	-2.97 (-4.81, -1.13)	2.31 (1.28, 4.13)

Data above are from Townsend et al.³⁴

- Interpersonal Therapy in patient's home (4 sessions) vs. usual care:
 - Suicidal ideation as measured by Beck Scale for Suicidal Ideation at 6-months was significantly lower (7.9 vs. 12.8, 95%CI -8.2 to -1.6)
 - Analysis was not intention-to-treat
- Dialectic behavior therapy vs. usual care:
 - Suicidal ideation as measured by Beck Scale at 6-months showed significantly greater decrease (-10 points vs. -4 points, p<0.05)
 - Conflicting results for decrease in depressive severity

Does Treatment Improve Intermediate Outcomes
(Suicidal Ideation, Hopelessness, or Functioning)?
Randomized Controlled Trials

- Children/Adolescents less than 18 years
 - Home-based family intervention vs. usual care for those with DSH history
 - No effect on suicidal ideation at 6 month follow-up
 - For subgroup without major depression, significantly lower suicidal ideation (4.9 vs. 21.6, $p < 0.01$)
 - Group Therapy vs. usual care for those with DSH referred to mental health
 - No effect on suicidal ideation at 6-month follow-up

Does Treatment Improve Intermediate Outcomes
(Suicidal Ideation, Hopelessness, or Functioning)?
Randomized Controlled Trials

- Geriatric population:
 - None published

Does Treatment Improve Intermediate Outcomes
(Suicidal Ideation, Hopelessness, or Functioning)?
Cohort Trials

- Adults
 - Mianserin vs. Amitriptyline vs. Maprotiline (all antidepressants)
 - Conflicting results on decreasing suicidal ideation (multiple measures)
 - Poor study quality
 - CBT vs. usual care in ICU setting after suicide attempt
 - Significant decrease in suicidal ideation at 3-month follow-up for those receiving counseling (-15.0 vs 2.75, $p=0.00$)
 - Poor study quality

Does Treatment Improve Intermediate Outcomes
(Suicidal Ideation, Hopelessness, or Functioning)?
Cohort Trials

- Children/Adolescents less than 18 years
 - Emergency Room intervention (education, 1 session family counseling) vs. usual care
 - No effect on suicidal ideation at 18-month follow-up
 - Significant decrease in those with clinically significant depressive severity (4.9% vs. 10.1%, $p < 0.01$)

Does Treatment Improve Intermediate Outcomes
(Suicidal Ideation, Hopelessness, or Functioning)?
Cohort Trials

- Geriatric population
 - None published

Conclusions

- Can a screening test reliably detect suicide risk in primary care populations?
 - Insufficient evidence
 - One relevant screening study in adults; none in child/adolescent or geriatric populations
- For those identified as being at risk, does treatment result in decreased attempts and/or mortality? (ultimate health outcomes)
 - Treatments have not consistently identified benefit for specific interventions applied to those at risk for suicide
 - No consistently statistically significant effects have emerged for interventions for which more than one study has been done

Conclusions

- For those identified as being at risk does treatment result in decreased suicidal ideation or hopelessness, or improved functioning? (intermediate health outcomes)
 - Results from studies involving older adolescents and adults showed improvements in suicidal ideation, mood, and hopelessness
 - Similar improvements for adolescents less than 18 years of age have not been shown
- Does screening for suicide risk in primary care settings result in decreased attempts and/or decreased morbidity? (the overarching question)
 - No evidence addressing this question

Discussion

- Studying interventions for a rare event is challenging
 - Even in a population at high risk for suicide, demonstrating incremental benefit is difficult
- Generalizability of the available evidence to a primary care population with unidentified suicide risk is poor
- The available studies focus on those with relatively moderate risk for suicide and, for ethical and clinical reasons, exclude patients at the highest risk
- The lack of evidence for incremental benefit from a particular intervention compared to usual care is not equivalent to saying that nothing works
- Making meaningful conclusions specific to a particular age group is difficult

Discussion

- Finally, we have found no evidence addressing whether more adequate treatment of depressed or substance-abusing patients will decrease the risk of suicide
 - USPSTF now recommends routine screening for depression, which will likely identify more patients with suicidal ideation
 - A key question is whether treatment of depression for those identified by a screen will decrease the subsequent risk of suicide attempts and suicidal ideation

Outcome

- This systematic evidence review supports the finding that there is inadequate information on which to base a routine recommendation of screening for suicide risk in primary care
- This review also highlights gaps in the evidence base guiding primary care assessment of suicide risk and it identifies key items for the research agenda:
 - Examination of suicide screening tools in primary care setting
 - Need to stratify subsequent studies to be consistent with high risk age ranges
 - Need to review strategy for identifying those at risk: will a strategy focusing screening and management efforts on patients with depressive illness decrease risky behaviors