Essentials of Internal Medicine: Handling the Suicidal Patient

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Disclosure Statement:

Relevant financial relationships in the past 12 months

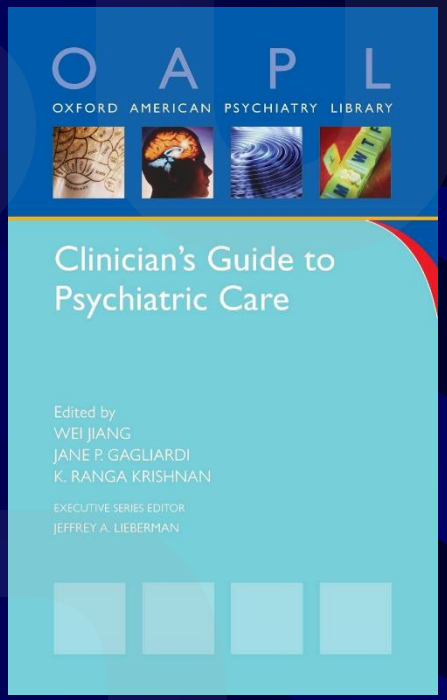
- Consultant/Speaker: MedStudy Internal Medicine Board Review and Horizon CME

Relevan 2 months

- Financial: I tal Health specializing S) and esketamine to support:

Psychiatric Emergencies

- Suicidality
- Serotonin Syndrome
- Li+ Toxicity
- Alcohol Withdrawal
- Violence/Agitation
- Delirium/Encephalopathy
- Neuroleptic Malignant Syndrome (NMS)
- Acute Psychosis (not covered in the chapter)



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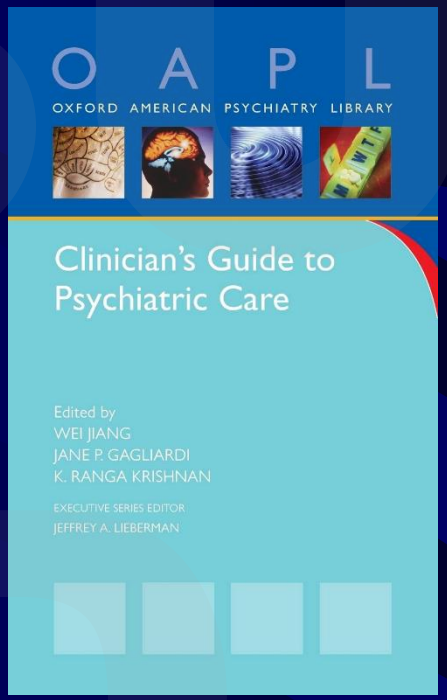
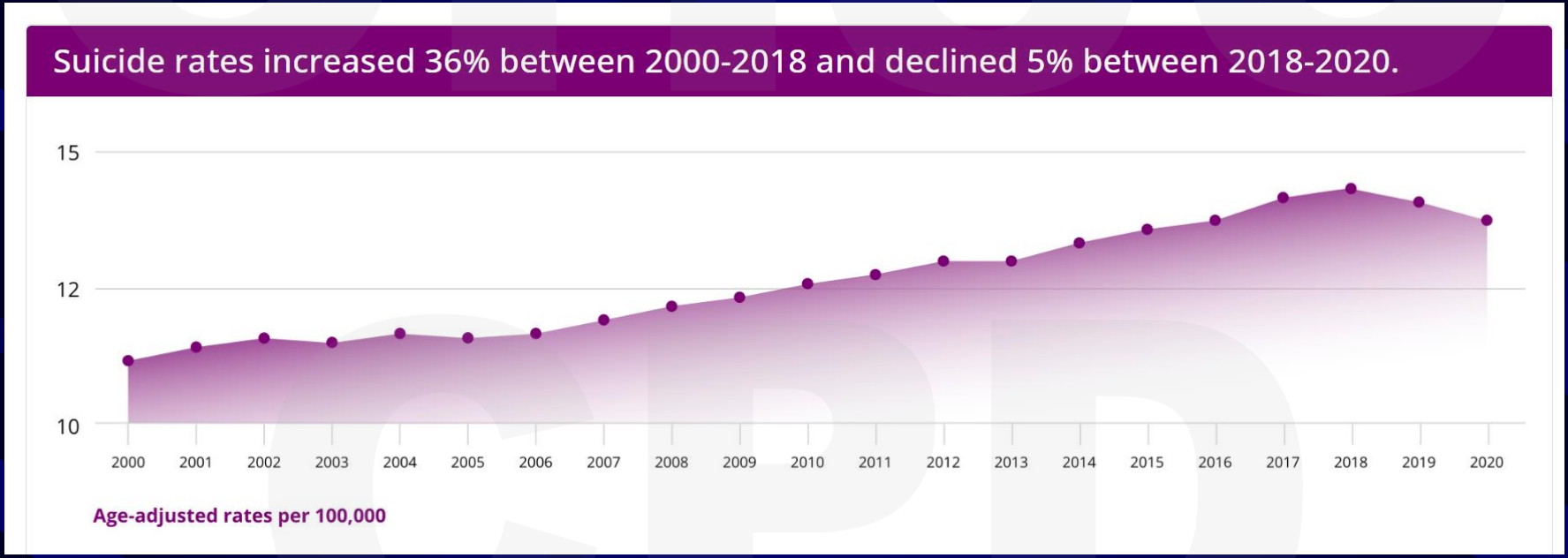
- What scares YOU the most?



Suicide

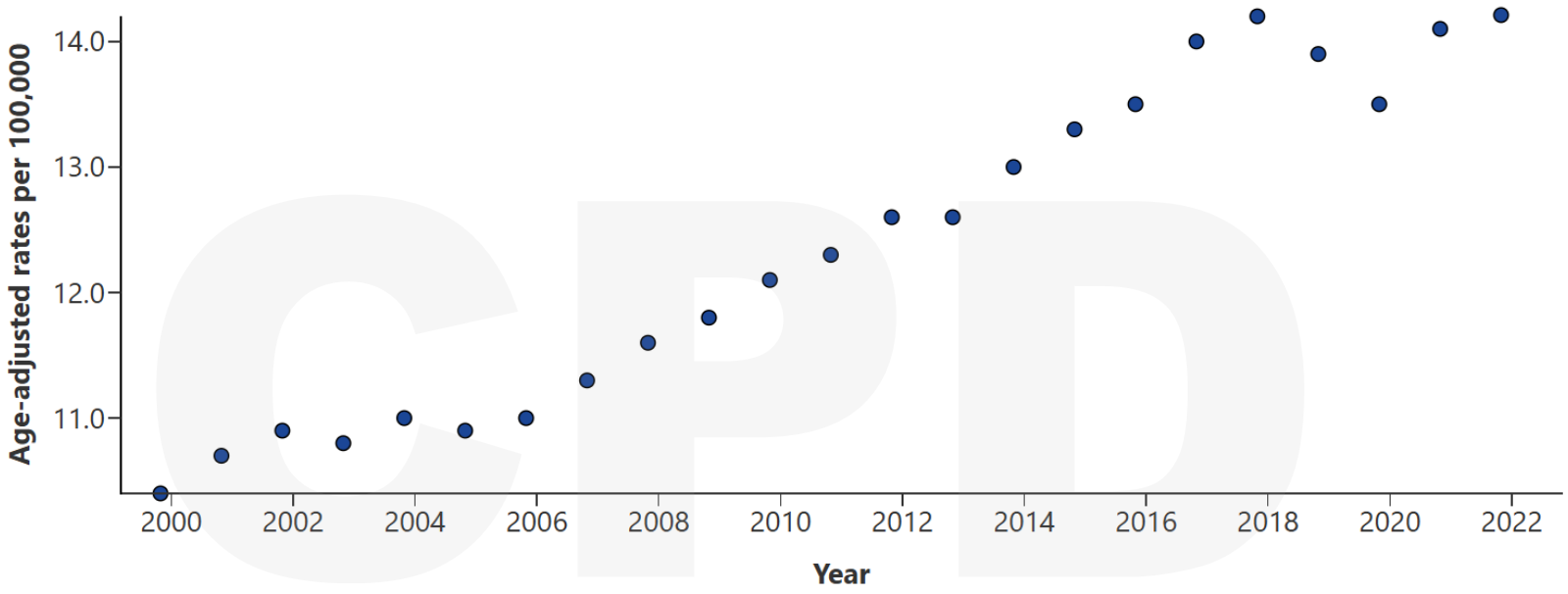
Suicide Trend



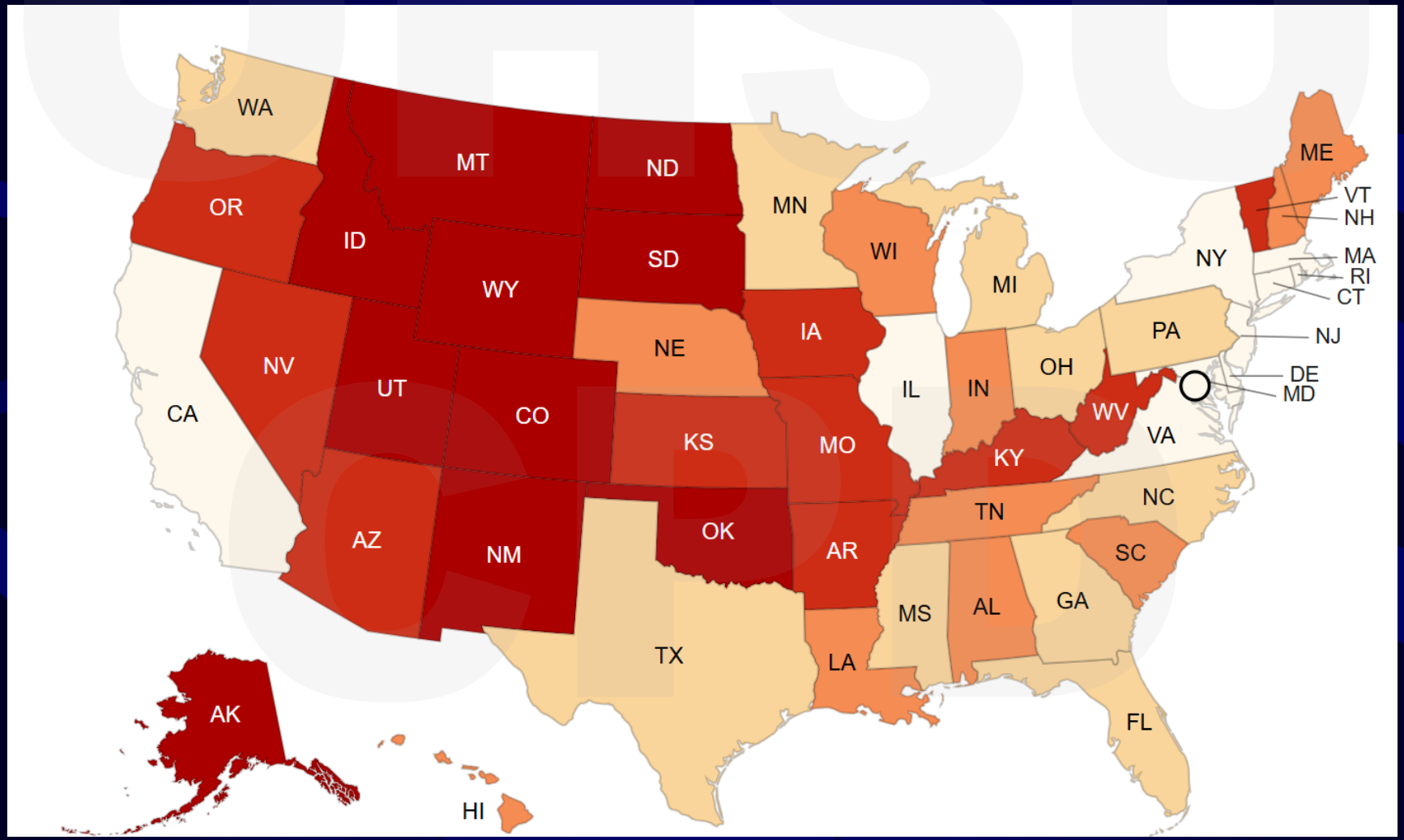
Suicide Trend

Suicide rates

Suicide rates increased 37% between 2000-2018 and decreased 5% between 2018-2020. However, rates returned to their peak in 2022.



Suicide Rate 2022:
Oregon 19.3 per 100K



But the real reason we are talking about Suicide in the Internal Medicine Review?

You see 45 Percent!

- 45% of patients who die by suicide visit a non-psychiatrist (especially a primary care physician) within 30 days of their death.

- Yet, screening for suicide risk is a grade “I” recommendation by the USPSTF (2023)

SAFE-T Assessment

- Identify Risk Factors
- Identify Protective Factors
- Conduct Suicide Inquiry
- Determine Risk Level/Intervention
- Documentation

Which Psychiatric Conditions are Linked Most with Suicide?

Which Psychiatric Conditions are Linked Most with Suicide?

Table 4. Predicted relative risks for suicide.

Disorder	Both	Males	Females
Major Depressive Disorder	7·64 [4·3, 13·58]	7·78 [4·34, 13·93]	7·51 [4·18, 13·51]
Dysthymia	4·11 [2·09, 8·09]	4·18 [2·12, 8·26]	4·04 [2·02, 8·06]
Anxiety Disorders	4·89 [2·76, 8·69]	4·98 [2·78, 8·91]	4·81 [2·68, 8·64]
Bipolar Disorder	6·05 [3·38, 10·83]	6·15 [3·4, 11·13]	5·94 [3·29, 10·75]
Schizophrenia	5·98 [3·33, 10·72]	6·09 [3·73, 10·98]	5·88 [3·24, 10·66]

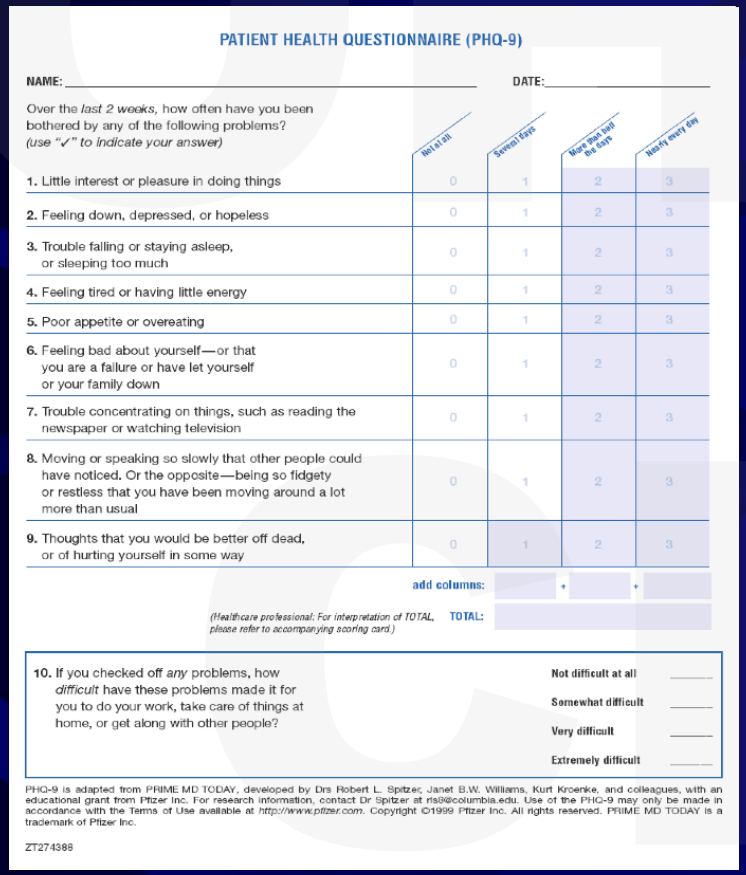
Moitra M, Santomauro D, Degenhardt L, et al. Estimating the risk of suicide associated with mental disorders: A systematic review and meta-regression analysis. *Journal of Psychiatric Research* 2021(137): 242-249.

Screening for Depression (B Recommendation)

- 2-Item PRIME-MD Screen
  - Have you had little interest or pleasure in doing things? (anhedonia)
  - Have you been feeling down, depressed or hopeless over the past month?
- Scoring:
  - 0 = not at all
  - 1 = several days
  - 2 = more than half the days
  - 3 = nearly every day
  - * 3 or more on the PHQ-2 (out of 6) is a “positive” screen

Brody DS, et al. *Arch Intern Med.* 1998;158(22):2469-75

Patient Health Questionnaire (PHQ)-9



PATIENT HEALTH QUESTIONNAIRE (PHQ-9)

NAME: _____ DATE: _____

Over the *last 2 weeks*, how often have you been bothered by any of the following problems?
(use "✓" to indicate your answer)

	Not at all	Several days	More than half the days	Nearly every day
1. Little interest or pleasure in doing things	0	1	2	3
2. Feeling down, depressed, or hopeless	0	1	2	3
3. Trouble falling or staying asleep, or sleeping too much	0	1	2	3
4. Feeling tired or having little energy	0	1	2	3
5. Poor appetite or overeating	0	1	2	3
6. Feeling bad about yourself—or that you are a failure or have let yourself or your family down	0	1	2	3
7. Trouble concentrating on things, such as reading the newspaper or watching television	0	1	2	3
8. Moving or speaking so slowly that other people could have noticed. Or the opposite—being so fidgety or restless that you have been moving around a lot more than usual	0	1	2	3
9. Thoughts that you would be better off dead, or of hurting yourself in some way	0	1	2	3
add columns:		+	+	
(Healthcare professional: For interpretation of TOTAL, please refer to accompanying scoring card.) TOTAL:				

10. If you checked off *any* problems, how *difficult* have these problems made it for you to do your work, take care of things at home, or get along with other people?

- Not difficult at all _____
- Somewhat difficult _____
- Very difficult _____
- Extremely difficult _____

- 9 questions based on major depressive episode DSM IV criteria
- NOT diagnostic, but is a helpful tool for:
  - Screening
  - Aiding clinical diagnosis
  - Monitoring severity over time

PHQ-9 is adapted from PRIME MD TODAY, developed by Drs Robert L. Spitzer, Janet B.W. Williams, Kurt Kroerke, and colleagues

PHQ-9 Scoring

Score*	Depression Severity	% of ANY Depressive D/O	Proposed Tx
1-4	None	0.1%	None
5-9	Mild	12.6%	Repeat PHQ-9 at F/U
10-14	Moderate	54.9%	Treatment plan, considering counseling, follow-up and/or pharmacotherapy
15-19	Moderately Severe	90.6%	Immediate initiation of pharmacotherapy and/or psychotherapy
20-27	Severe	97.5%	Immediate initiation of pharmacotherapy and, if severe impairment or poor response to therapy, expedited referral to a mental health specialist for psychotherapy and/or collaborative management

*10 as cutoff produces 88% sensitivity and 88% specificity

Which Medical Conditions are Linked Most with Suicide?

Which Medical Conditions are Linked Most with Suicide?

Table 3

Adjusted Odds of Suicide Among Individuals With Physical Health Conditions

	OR (Adjusted for sex and age)			OR (Adjusted for sex, age, mental health and substance use diagnoses)		
Condition	**AOR**	**95% CI**	***p*-value**	**AOR**	**95% CI**	***p*-value**
Asthma	1.30	1.11, 1.52	**<0.001**	0.99	0.84, 1.16	0.882
Back pain	1.97	1.79, 2.16	**<0.001**	1.37	1.25, 1.51	**<0.001**
Brain injury[a]	14.95	12.60, 17.73	**<0.001**	8.80	7.37, 10.50	**<0.001**
Cancer	1.59	1.38, 1.83	**<0.001**	1.40	1.21, 1.62	**<0.001**
CHF	1.78	1.45, 2.19	**<0.001**	1.31	1.06, 1.61	**0.011**
COPD	2.04	1.79, 2.33	**<0.001**	1.39	1.22, 1.59	**<0.001**
Diabetes	1.18	1.04, 1.34	**0.008**	0.98	0.87, 1.12	0.788
Epilepsy	3.27	2.35, 4.54	**<0.001**	1.77	1.27, 2.48	**<0.001**
HIV/AIDS	3.39	2.17, 5.27	**<0.001**	2.14	1.36, 3.36	**<0.001**
Heart disease	1.19	1.02, 1.37	**0.023**	0.89	0.77, 1.04	0.135
Hypertension	1.37	1.24, 1.52	**<0.001**	0.99	0.90, 1.11	0.968
Migraine	2.82	2.29, 3.49	**<0.001**	1.85	1.50, 2.30	**<0.001**
Multiple sclerosis	1.85	0.99, 3.48	0.055	1.27	0.67, 2.40	0.460
Osteoporosis	1.21	0.90, 1.62	0.216	0.93	0.69, 1.25	0.633
Parkinson's	1.87	1.20, 2.91	**0.006**	1.10	0.70, 1.73	0.666
Psychogenic pain	3.20	2.21, 4.62	**<0.001**	0.97	0.67, 1.41	0.888
Renal disorder	1.48	1.26, 1.74	**<0.001**	1.07	0.91, 1.22	0.407
Sleep disorders	3.66	3.30, 4.05	**<0.001**	2.08	1.87, 2.31	**<0.001**
Stroke	1.97	1.58, 2.47	**<0.001**	1.25	0.99, 1.56	0.058

Note: Boldface indicates statistical significance ($p<0.05$). Logistic regression models are conditional on site.

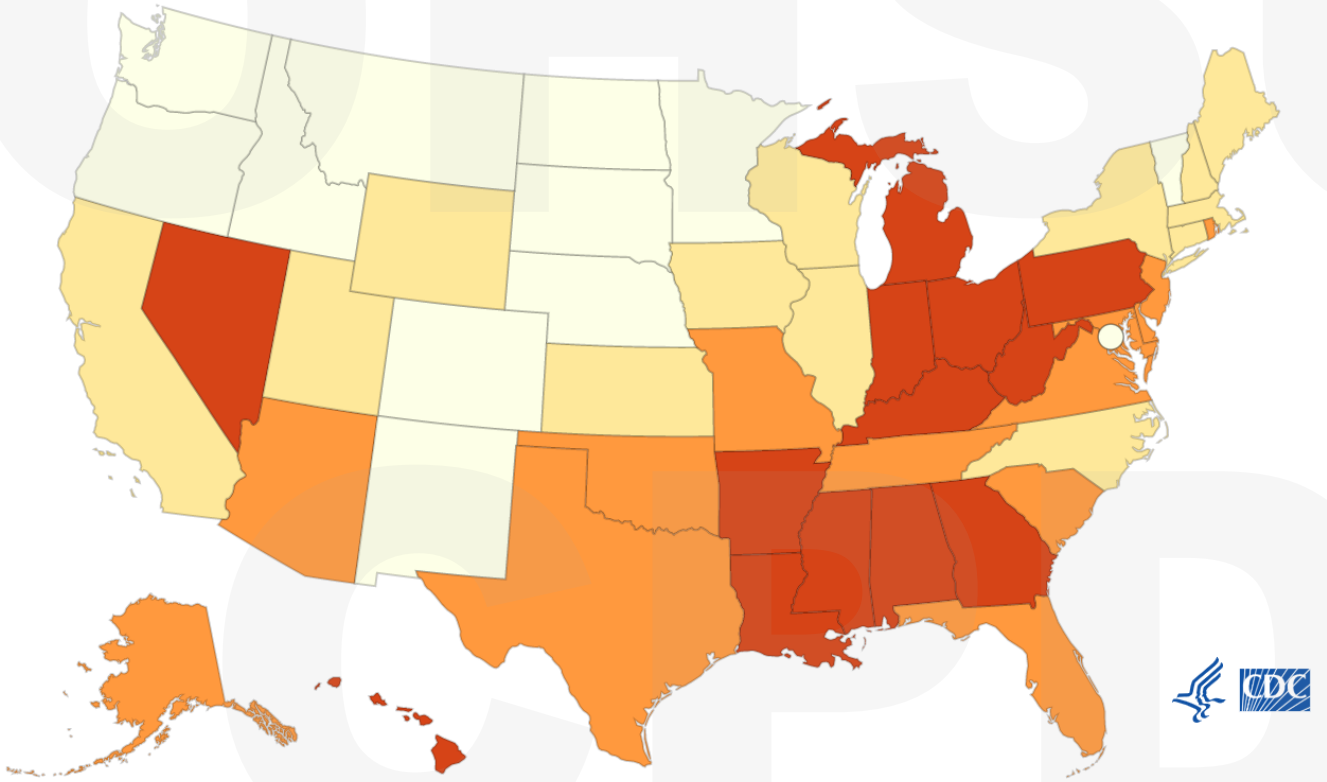
[a]Brain injury denotes traumatic brain injury.

CHF, congestive heart failure; COPD, chronic obstructive pulmonary disorder; Diabetes, diabetes mellitus; Parkinson's, Parkinson's disease.

- Three conditions had a >twofold increased suicide risk: traumatic brain injury (AOR=8.80, p<0.001), HIV/AIDS (2.14) and sleep disorders (2.08).

  – Ahmedani BK, Peterson EL, Hu Y et al. Major Physical Health Conditions and Risk of Suicide. *Am J Prev Med*. 2017 Sep;53(3).

Sleep Deprivation



Data Source: CDC Behavioral Risk Factor Surveillance System (BRFSS), 2020.
Short sleep duration based on response to the question:
"On average, how many hours of sleep do you get in a 24-hour period?"
Prevalence age-standardized to the 2000 US projected population.

Insomnia and Suicide?

- HPA axis dysfunction and poor serotonin turnover negatively affect frontal lobe functioning and subsequently result in executive dysfunction and poor decision making.
- Impaired decision making increases the risk for suicide when access to suicide methods increases and social support decreases.
- The hypothesis that being awake at night increases the risk for suicide was supported by findings that completed suicide was more likely to occur at night and in the early morning hours.

Difficult Question

- Suicide Risk is the highest in which of the following groups of cancer patients?
  A. Good prognosis group
  B. Patients with lung and bronchial cancer
  C. Patients with laryngeal cancer
  D. Patients in the later stages of cancer illness

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Urban et al. (2013) found the highest risk was within the first 3 months after diagnosis (SMR = 13.4) but dropped (SMR = 3.8) thereafter

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Standardized Mortality Ratio (SMR) Data

- 3.6 million pts diagnosed with cancer between 1973-2002, the SMR for suicide was 1.9
- Highest SMR was found in lung and bronchial cancer (SMR = 5.7)
- Next highest: stomach (SMR = 4.68), oral pharyngeal (SMR = 3.66), and laryngeal (SMR = 2.83)
- Poor-prognosis cancer (SMR = 3.39) vs good prognosis group (SMR = 0.86)

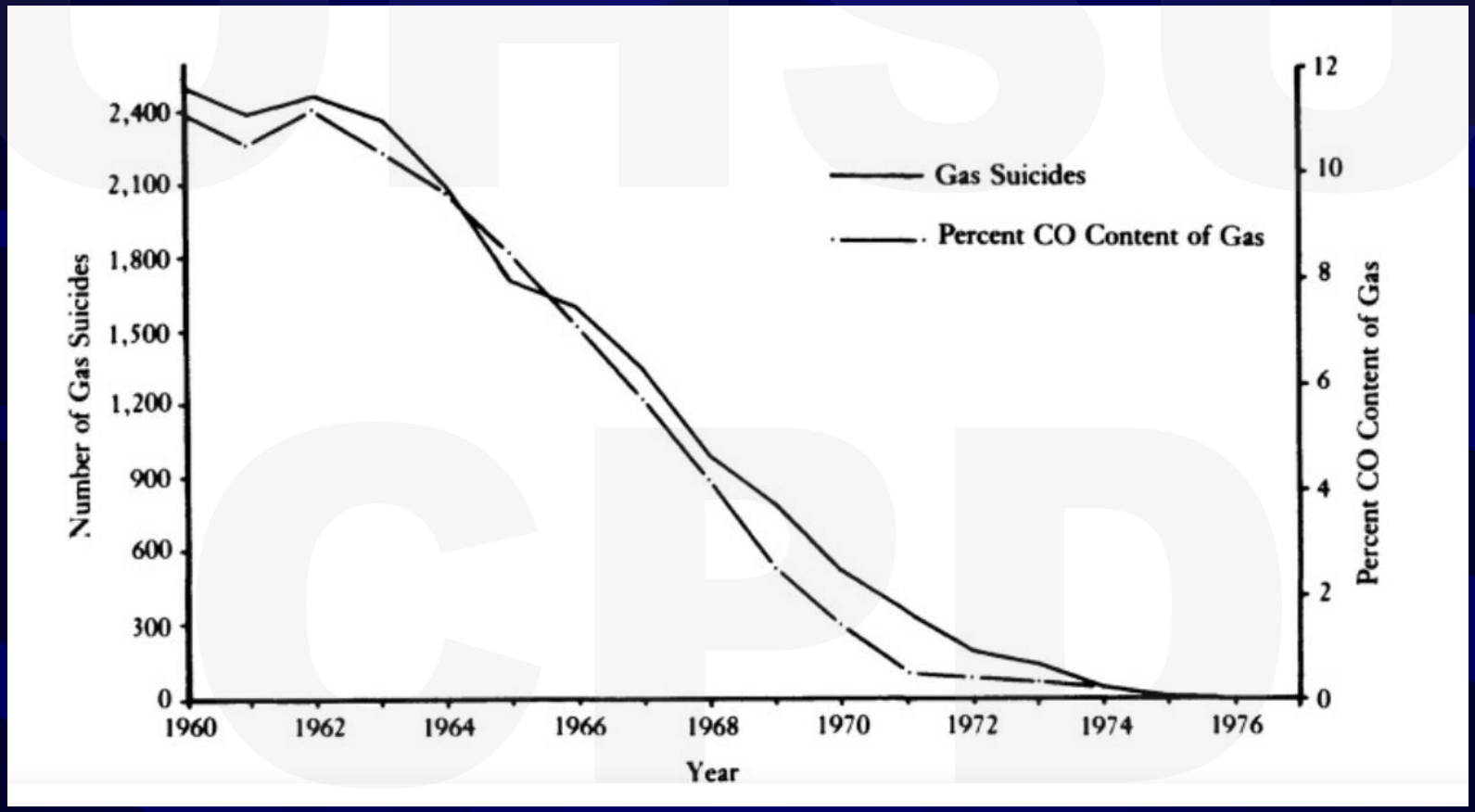
Misono S, Weiss NS, Fann JR, Redman M, Yueh B. Incidence of suicide in persons with cancer. J Clin Oncol. 2008 Oct 10;26(29):4731-8.

General Suicide Pearls

- Most deaths by suicide are male (77%)
- Highest suicide rate is for those older than 85
- Firearms are used in 52.8-55% of suicide completions (25% by hanging)
- Highest risk in American Indian/Alaska Native and Non-Hispanic Whites
- Counties with the highest risk of suicide:
  - Western states (e.g., Colorado, New Mexico, Utah, and Wyoming)
  - Appalachia (e.g., Kentucky, Virginia, and West Virginia)
  - Ozarks (e.g., Arkansas and Missouri)

Coupling

Town Gas vs. Natural Gas



SAN FRANCISCO CONSTRUCTION NEWS | SAN FRANCISCO TRANSPORTATION

Golden Gate Bridge suicide barrier delayed

Life-saving project likely two years late, set for 2023

By **Adam Brinklow** | Dec 13, 2019, 9:45am PST

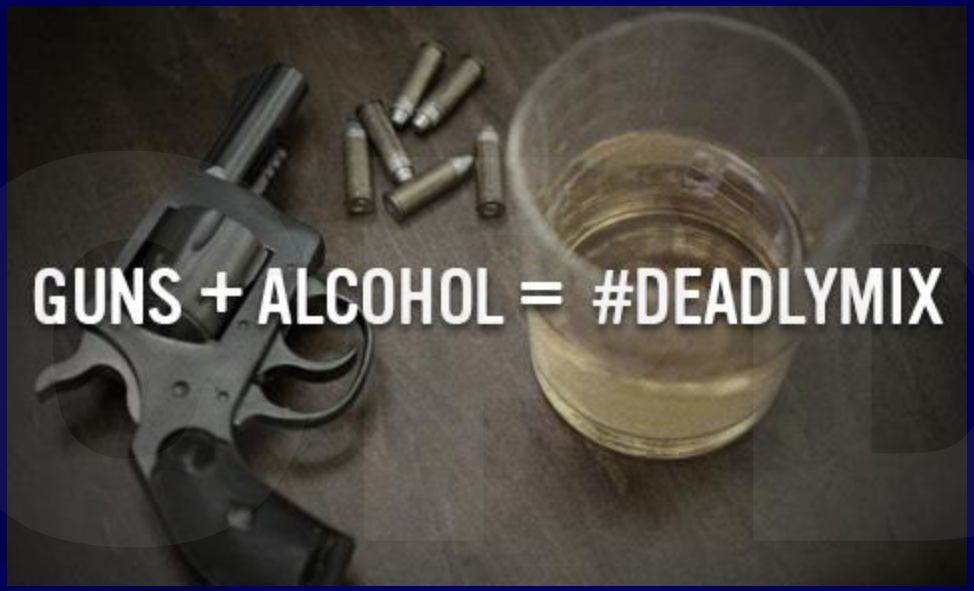
Coupling

Alcohol-related deaths from ’99 -’17

- Rate doubled overall in the US (72,558 in 2017 from 35,914 in 1999) – 3rd leading cause of preventable death
- Males accounted for 76.4% of the deaths
- Females experienced a 135.8% increase in the number of EtOH-related deaths over the study period.

Alcohol-related deaths from ’99 -’17

Coupling Reminder: Firearms are the most commonly used method of suicide and 1/3 of US households have a gun.



Warning:
Slide Depicting Self-Immolation

- Suicide in other parts of the world often involves self-immolation as a means of protest – especially since 1960 when television expanded.

Challenges of Impulsivity

- Nearly 80% of suicide attempts are impulsive acts.
- 24% of those who made near-lethal suicide attempts decided to kill themselves less than five minutes before the attempt
- 70% made the decision within an hour of the attempt.
  - » *N Engl J Med* 2008; 359:989-991

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- 24% of those who made near-lethal suicide attempts decided to kill themselves less than five minutes before the attempt
- 70% made the decision within an hour of the attempt.
- 90% of people who survive a suicide attempt do not go on to die by suicide per the landmark 1978 Seiden study of the Golden Gate Bridge
  - » *N Engl J Med* 2008; 359:989-991

Key: Identifying Treatable Conditions

- Psychological autopsies done after suicides show:
  - 90% of people who die from suicide suffered from a mental illness
  - 54% never received a psychiatric diagnosis.
  - 50% of Americans experiencing an episode of major depression receive treatment. (NAMI)

Key: Identifying Treatable Conditions

- Psychological autopsies done after suicides show:
  - 90% of people who die from suicide suffered from a mental illness
  - 54% never received a psychiatric diagnosis.
  - 50% of Americans experiencing an episode of major depression receive treatment. (NAMI)
  - In the month after individuals leave inpatient psychiatric care, their suicide rate is 200 times higher than that of the general population.

Special Populations

- According to the CDC Occupational Mortality Report 2016, males and females in this occupation had the highest suicide rates: 49.4 per 100,000 and 25.5 per 100,000 respectively.

Special Populations

LGBTQ+ Patients

- Gay, bisexual, and other men who have sex with men are at greater risk for suicide attempts, especially before the age of 25 (higher than the 4x increase of straight men compared to women).
- A study of youth in grades 7-12 found that lesbian, gay, and bisexual youth were more than twice as likely to have attempted suicide as their heterosexual peers.
- Trevor Project for LGBTQ youth

  (direct links from the CDC website)

Medical Students

- Depressive symptom prevalence is 27.2%
- Of those who screened positive for depression, only 15.7% seek psychiatric help
- 11.1% of the students surveyed acknowledged thoughts of suicide

» Rotenstein LS, Ramos MA, Torre M, Segal JB, Peluso MJ, Guille C, Sen S, Mata DA. Prevalence of Depression, Depressive Symptoms, and Suicidal Ideation Among Medical Students: A Systematic Review and Meta-Analysis. JAMA. 2016 Dec 6;316(21):2214-2236.


SEE
SOMETHING
SAY
SOMETHING

Conversations with Struggling Peers, Co-Workers, Students, etc.

Don't Say

- "that's crazy you're thinking of suicide"
- "that's not going to solve anything"
- "a mistake isn't worth killing yourself over"

Do Say

- "I'm sorry you're feeling so bad, how can I help?"
- "we'll get through this together"
- "let's get you some help"
- Validate their feelings: "I can only imagine what you're feeling right now."

MAYO CLINIC

NURS mnemonic in Communication

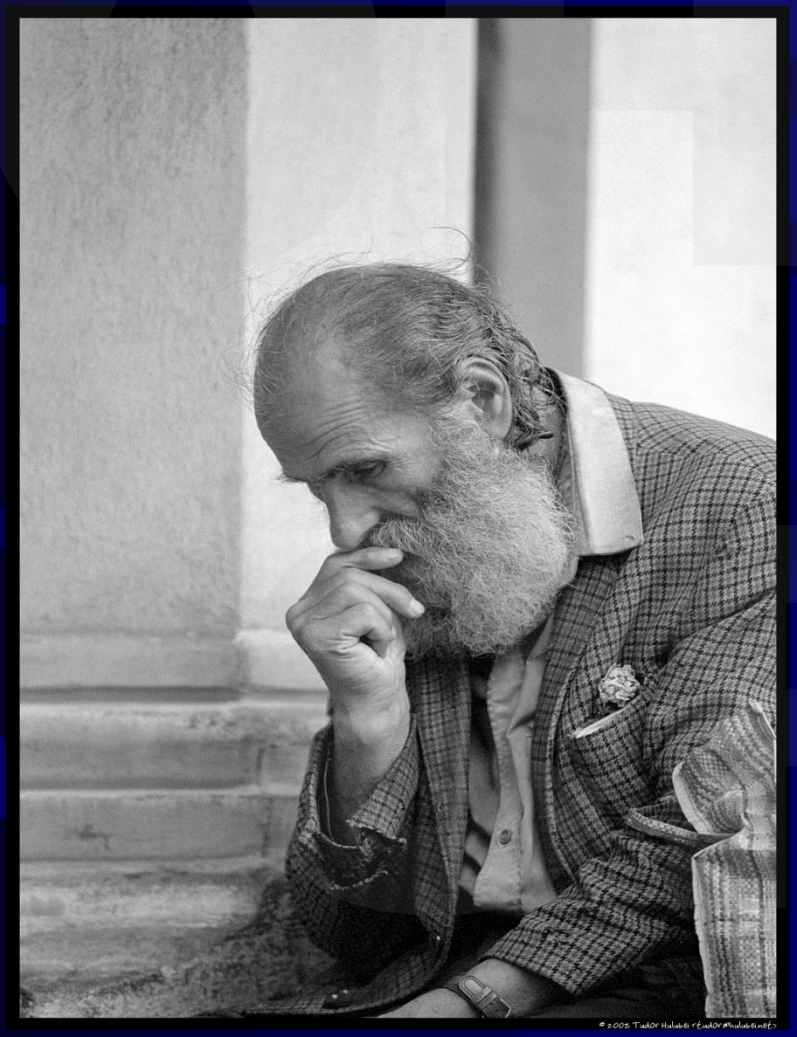
- N = naming the emotion. "So you're feeling stressed or depressed."
- U = understanding. "That makes sense to me. I understand how you could feel that way."
- R = respect. "Thank you for telling me. I recognize you're having a tough time."
- S = support. "Let me know how I can help."
- Never ask about SI right away – first establish trust.

- Robert Smith, MD from "Essentials of Psychiatry in Primary Care: Behavioral Health in the Medical Setting"

Suicide facts: Bipolar Disorder

- Bipolar patients have the 2nd highest suicide attempt rate (28.5%)
- One suicide occurs for every 30 attempts. In bipolar patients, it's 1 suicide for every 3 attempts!
  - » Baldessarini RJ, et al. Suicide in bipolar disorder: risks and management. CNS Spectr. 2006;11:465-471
- Highest risk factor: male with comorbid anxiety disorder (vs. being young and having a substance-use disorder => predicted attempts but not necessarily suicide)
  - » Simon GE, et al.. Bipolar Disord. 2007;9:526-530.

Assessment: The Columbia Suicide Severity Rating Scale (C-SSRS)



Always ask questions 1 and 2.	Past Month	
1) Have you wished you were dead or wished you could go to sleep and not wake up?		
2) Have you actually had any thoughts about killing yourself?		
If **YES** to 2, ask questions 3, 4, 5 and 6. If **NO** to 2, skip to question 6.		
3) Have you been thinking about how you might do this?		
4) Have you had these thoughts and had some intention of acting on them?	High Risk	
5) Have you started to work out or worked out the details of how to kill yourself? Did you intend to carry out this plan?	High Risk	
Always Ask Question 6	Life-time	Past 3 Months
6) Have you done anything, started to do anything, or prepared to do anything to end your life? *Examples*: Took pills, tried to shoot yourself, cut yourself, tried to hang yourself, took out pills but didn't swallow any, held a gun but changed your mind or it was grabbed from your hand, went to the roof but didn't jump, collected pills, obtained a gun, gave away valuables, wrote a will or suicide note, etc. **If yes, was this within the past 3 months?**		High Risk

988 SUICIDE & CRISIS LIFELINE

If YES to 2 or 3, seek behavioral healthcare for further evaluation.
If the answer to 4, 5 or 6 is YES, get immediate help: Call or text 988, call 911 or go to the emergency room.
STAY WITH THEM until they can be evaluated.

Download Columbia Protocol app

What About Suicide Prevention "Contracting" (SPC)?

No-Suicide Contract

I _____ hereby agree that I will not harm myself in any way, attempt suicide, or die by suicide.

Furthermore, I agree that I will take the following actions if I am ever suicidal:

1. I will remind myself that I can never, under any circumstances, harm myself in any way, attempt suicide, or die by suicide.
2. I will call 911 if I believe that I am in immediate danger of harming myself.
3. I will call any or all of the following numbers if I am not in immediate danger of harming myself, but have suicidal thoughts (please list names, phone numbers, addresses, and any other relevant contact information below):

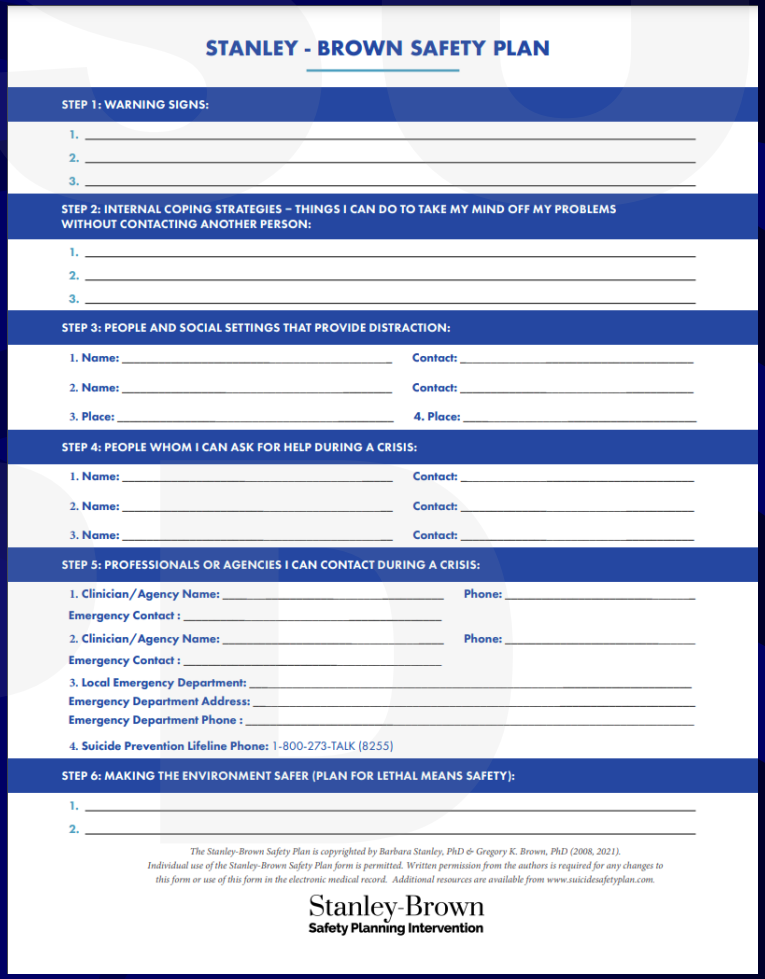
1-800-273-8255

U.S. 24-hour suicide prevention line

- A/P: Patient "contracts for safety" stating that he agrees not to harm himself and will contact me and his therapist (and/or 911) if he were to develop active suicidal intent…

Stanley-Brown Safety Plan

- www.suicidesafetyplan.com
- Collaborate, recording brief instructions in patient's own words
- Plan is available in writing
- Patient is instructed to follow the steps of the plan in order, stop when urges pass, and to go to hospital if acting on urges is imminent
- Rationale: Emergency situations can be improved by having a plan



STANLEY - BROWN SAFETY PLAN

STEP 1: WARNING SIGNS:

1. _____
2. _____
3. _____

STEP 2: INTERNAL COPING STRATEGIES – THINGS I CAN DO TO TAKE MY MIND OFF MY PROBLEMS WITHOUT CONTACTING ANOTHER PERSON:

1. _____
2. _____
3. _____

STEP 3: PEOPLE AND SOCIAL SETTINGS THAT PROVIDE DISTRACTION:

1. Name: _____ Contact: _____
2. Name: _____ Contact: _____
3. Place: _____ 4. Place: _____

STEP 4: PEOPLE WHOM I CAN ASK FOR HELP DURING A CRISIS:

1. Name: _____ Contact: _____
2. Name: _____ Contact: _____
3. Name: _____ Contact: _____

STEP 5: PROFESSIONALS OR AGENCIES I CAN CONTACT DURING A CRISIS:

1. Clinician/Agency Name: _____ Phone: _____
Emergency Contact : _____
2. Clinician/Agency Name: _____ Phone: _____
Emergency Contact : _____
3. Local Emergency Department: _____
Emergency Department Address: _____
Emergency Department Phone : _____
4. Suicide Prevention Lifeline Phone: 1-800-273-TALK (8255)

STEP 6: MAKING THE ENVIRONMENT SAFER (PLAN FOR LETHAL MEANS SAFETY):

1. _____
2. _____

Stanley-Brown
Safety Planning Intervention

Systematic Suicide Assessment

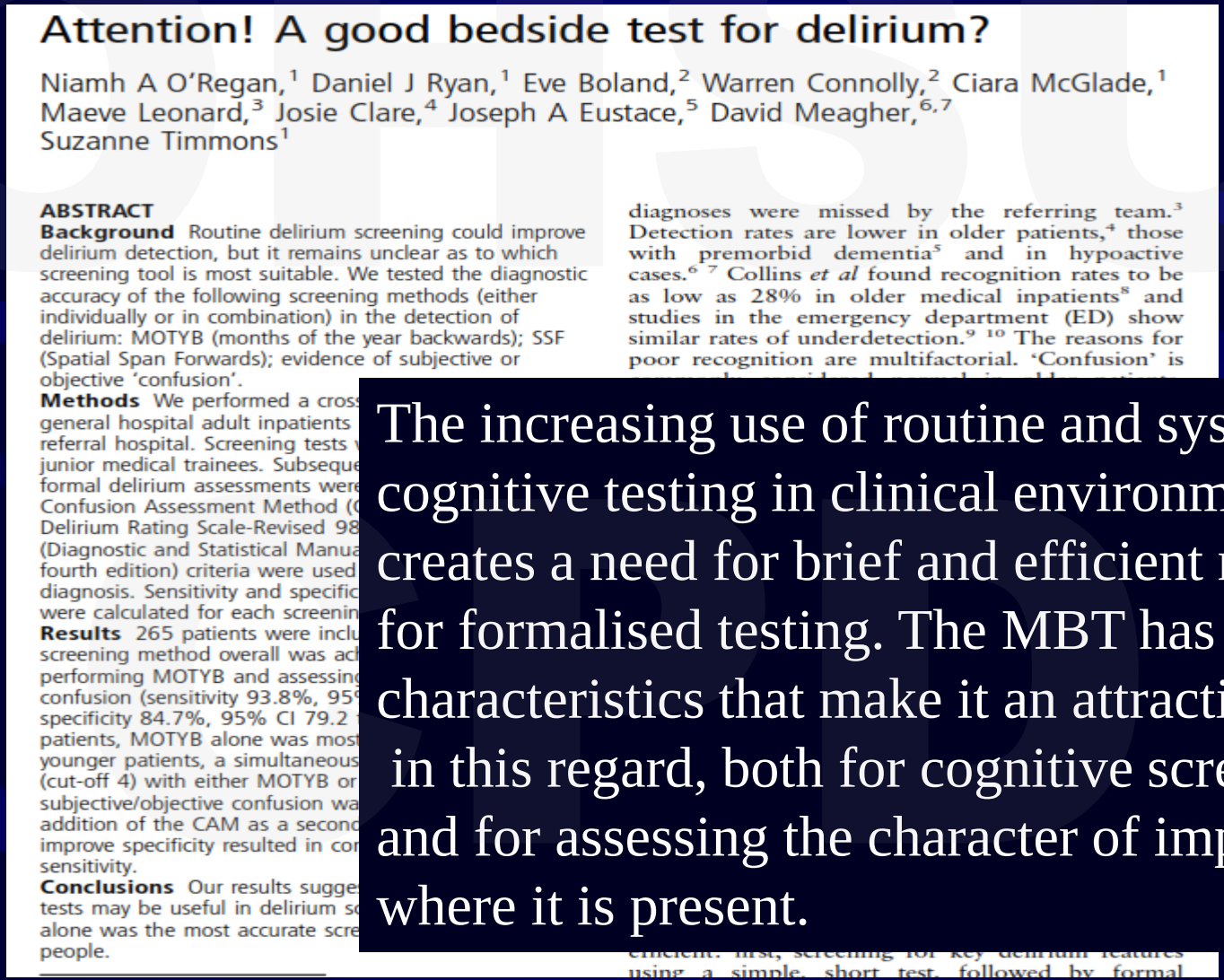
- Ask gently if suicidal thoughts are still active (review protective factors too) – if no then:
  - Assess for delirium
  - Assess for psychosis – ask about hallucinations
  - Assess for mood disorders (PHQ2 then 9)
  - Quote what the patient plans to do/aftercare plan – offer a suggestion if needed (adding a safety plan is ideal)
  - Collateral from a third party

Screening for Delirium

Several Tests Extrapolated from Dementia Screens

- Mini-Cog: 3 item recall + clockface (less than 3/4 = impaired)
- Six-item Screener (4 = impaired)
  - What year is this?
  - What month is this?
  - What day of the week is this?
  - Three item recall (1 minute) Apple Table Penny
    - Higher sensitivity (94%) than Mini-Cog (75%)
      - Wilber ST et al. *Acad Emerg Med* Volume 12, Issue7 612-616

MOTYB (or MBT)



Attention! A good bedside test for delirium?

Niamh A O'Regan,[1] Daniel J Ryan,[1] Eve Boland,[2] Warren Connolly,[2] Ciara McGlade,[1] Maeve Leonard,[3] Josie Clare,[4] Joseph A Eustace,[5] David Meagher,[6,7] Suzanne Timmons[1]

ABSTRACT

Background Routine delirium screening could improve delirium detection, but it remains unclear as to which screening tool is most suitable. We tested the diagnostic accuracy of the following screening methods (either individually or in combination) in the detection of delirium: MOTYB (months of the year backwards); SSF (Spatial Span Forwards); evidence of subjective or objective 'confusion'.

Methods We performed a cross
general hospital adult inpatients
referral hospital. Screening tests
junior medical trainees. Subseque
formal delirium assessments were
Confusion Assessment Method (
Delirium Rating Scale-Revised 98
(Diagnostic and Statistical Manua
fourth edition) criteria were used
diagnosis. Sensitivity and specific
were calculated for each screenin

Results 265 patients were inclu
screening method overall was ac
performing MOTYB and assessing
confusion (sensitivity 93.8%, 95
specificity 84.7%, 95% CI 79.2
patients, MOTYB alone was most
younger patients, a simultaneous
(cut-off 4) with either MOTYB or
subjective/objective confusion wa
addition of the CAM as a second
improve specificity resulted in co
sensitivity.

Conclusions Our results sugge
tests may be useful in delirium s
alone was the most accurate scre
people.

diagnoses were missed by the referring team.[3] Detection rates are lower in older patients,[4] those with premorbid dementia[5] and in hypoactive cases.[6 7] Collins *et al* found recognition rates to be as low as 28% in older medical inpatients[8] and studies in the emergency department (ED) show similar rates of underdetection.[9 10] The reasons for poor recognition are multifactorial. 'Confusion' is

efficient: first, screening for key delirium features using a simple, short test, followed by formal

The increasing use of routine and systematic cognitive testing in clinical environments creates a need for brief and efficient methods for formalised testing. The MBT has many characteristics that make it an attractive option in this regard, both for cognitive screening and for assessing the character of impairment where it is present.

Systematic Suicide Assessment

- Ask gently if suicidal thoughts are still active (review protective factors too) – if no then:
  - Assess for delirium
  - Assess for psychosis – ask about hallucinations
  - Assess for mood disorders (PHQ2 then 9)
  - Quote what the patient plans to do/aftercare plan – offer a suggestion if needed (adding a safety plan is ideal)
  - Collateral from a third party

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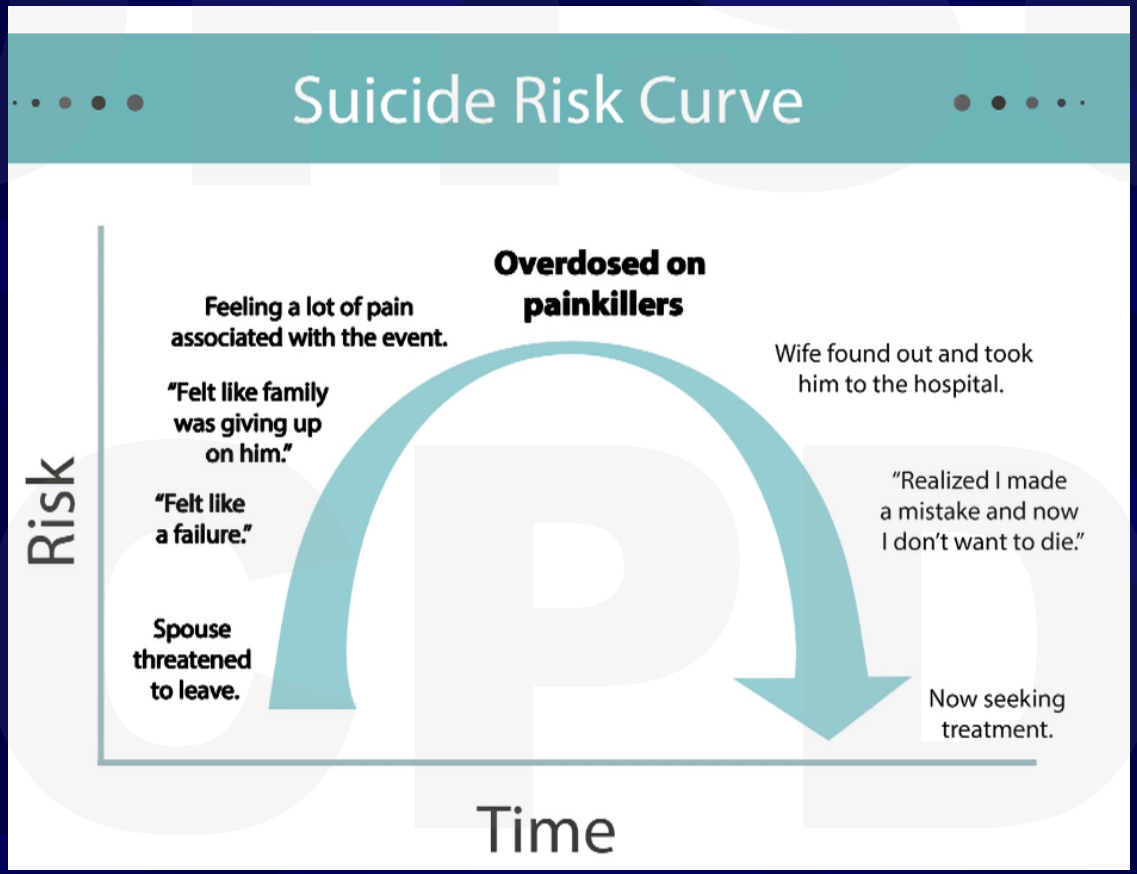
Summary Statement

- Patient says that she is no longer feeling suicidal. There is no evidence of delirium or psychotic features. She acknowledges her family problems and says that counseling makes sense. She has agreed to a follow-up appointment at the mental health center tomorrow and plans to call her employer today to say she will be back at work next week. She has discussed these plans with her husband who agrees to be seen with her at the initial psychiatric assessment following discharge. Pt no longer needs constant observation.

» Goldberg RJ. The Assessment of Suicide Risk in the General Hospital. *General Hospital Psychiatry* 9;446-52, 1987.

Review Post-Attempt Events

Remember, talking about a suicide attempt does NOT increase risk



Cognitive Challenges

- Ability to be flexible in the presence of negative affect diminished
- Highly impaired problem solving and perspective-taking
- High degree of hopelessness
- Deficient autobiographical memory
- Biased attention toward losses, failures and suicide cues
- Eventual preoccupation with suicide as a solution
- Ideation and attempts often perpetuated by subsequent decrease in negative affect

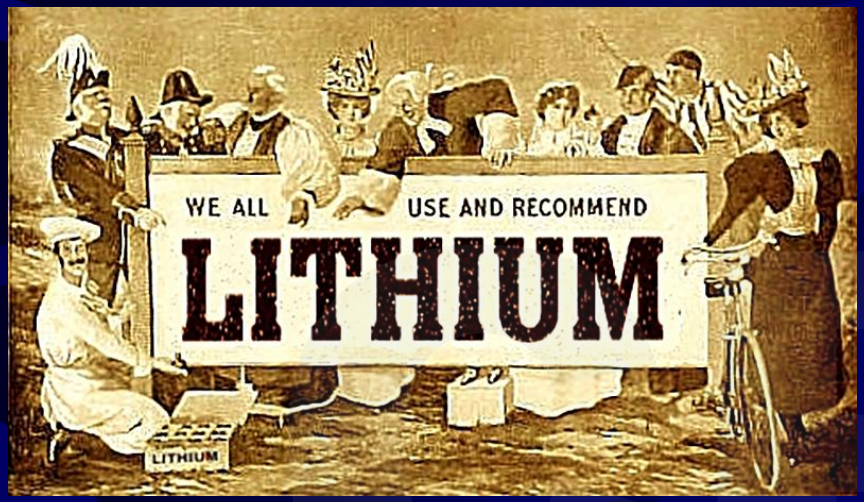
» Wenzel, Brown, Beck (2009) Cognitive Therapy for Suicidal Paitents. Scientific and Clinical Applications. Washington, DC. pp 53-77.

Medication Options for Suicidal Ideation

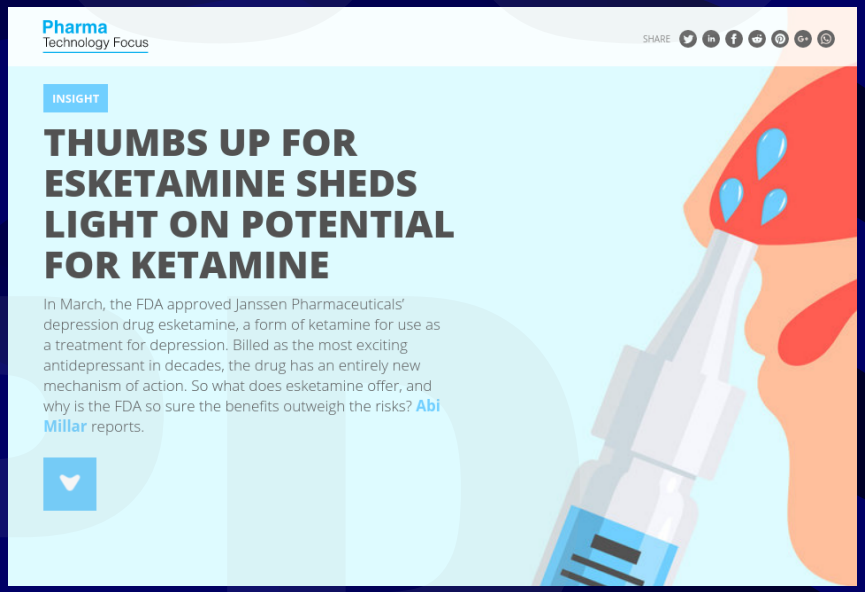
- FDA “black box warning”: SSRIs may increase the risk of

Medication Options for Suicidal Ideation in Non-Psychotic Patients

Lithium (not FDA approved)



Esketamine (FDA approved MDSI)



Lithium Toxicity

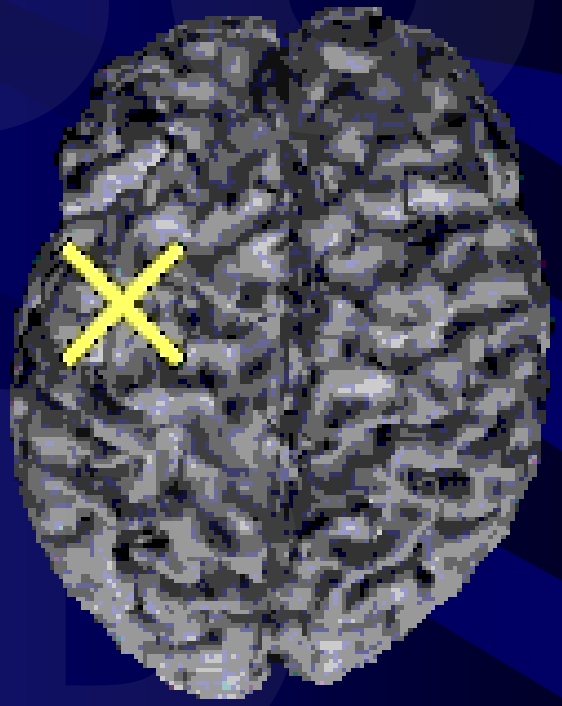
- Narrow therapeutic window
- Meds to watch out for increased lithium levels:
  - Thiazide diuretics > loop diuretics
  - Angiotensin-converting enzyme (ACE) inhibitors/Angiotensin receptor blockers (ARBs)
  - Nonsteroidal anti-inflammatory drugs (NSAIDs)
  - Some antibiotics (gentamycin)
- Symptoms
  - Cardiac: prolonged QT_C, arrhythmias
  - GI: nausea, vomiting, diarrhea
  - CNS: ataxia, confusion, tremors, myoclonic jerks, seizures
  - Renal: deteriorating renal function

Lithium Toxicity

- Management:
  - Stop the agent
  - ABCs and supportive care
  - IV Fluids
  - Gastrointestinal decontamination
    - Polyethylene glycol
    - Activated charcoal not effective
  - Hemodialysis when Lithium levels > 5 mEq/L (or 4 mEq/L in patients with renal impairment)
    - Consider consulting nephrology if lithium level is > 2 mEq/L

Another Fast Way to Treat TRD: TMS

- TMS (transcranial magnetic stimulation) – 3 - 19 minute outpatient procedure typically done daily for 6 weeks approved by the FDA in October ‘08 for Treatment Resistant Depression.



- Active Path Mental Health is my employer (conflict disclosure)

How Does TMS Work?

A pulsing magnetic coil induces electrical activity in conductive tissue

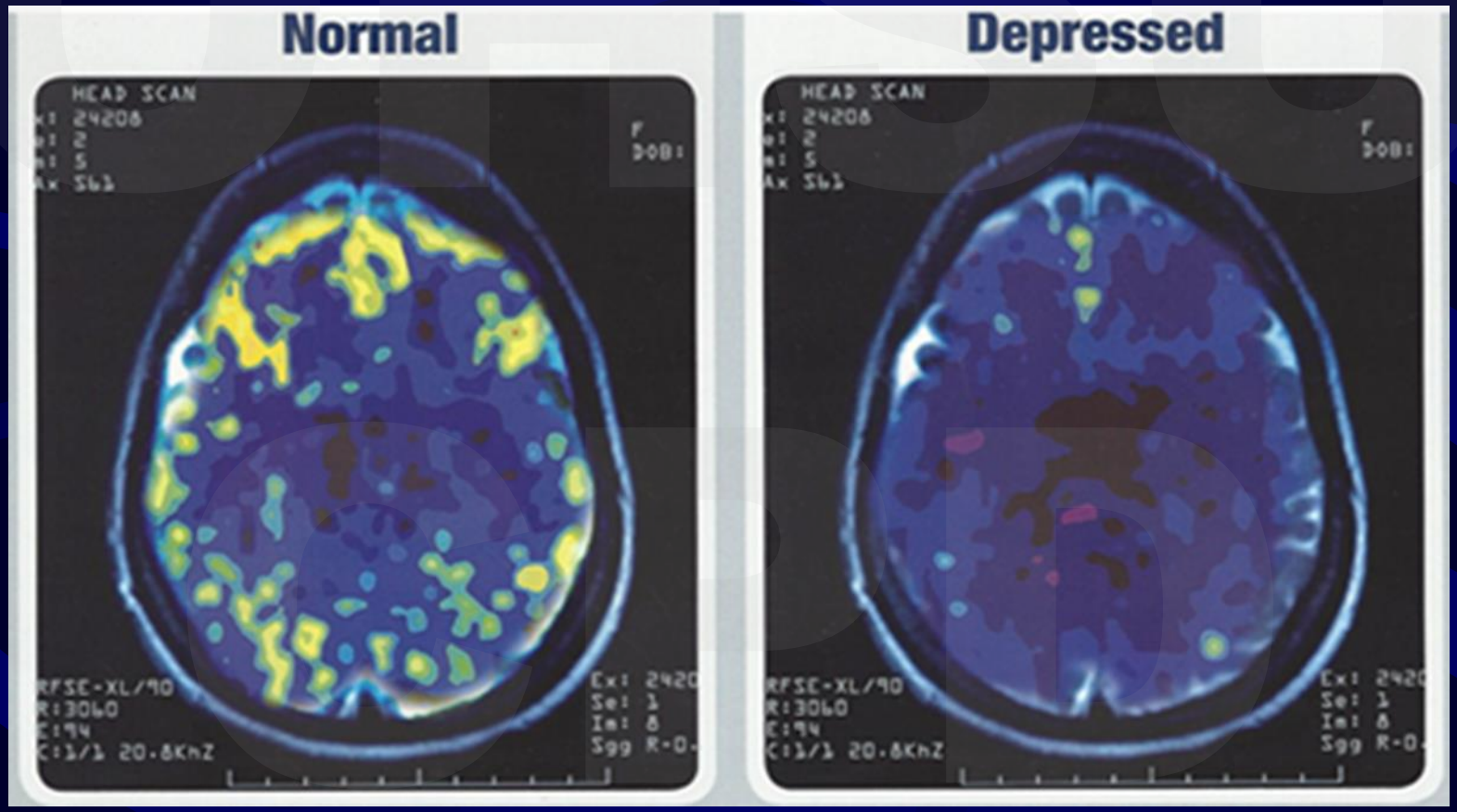
The magnet itself is similar to an MRI and the coil induces a magnetic field.

Changing magnetic field induces electrical field in the brain.

Electric field stimulates localized neurons in the brain.

Neuronal stimulation modulates neuronal “firing”, resulting in behavioral effects.

Depressed Brains Look Different



Mark S. George, MD. Fluorodeoxyglucose positron emission tomography (PET) images acquired at the National Institute of Mental Health (NIMH, Bethesda, MD), 1994.

Summary: Reduce Suicide Risk

- Learn the warning signs of suicide to identify and appropriately respond to people at risk at: www.BeThe1to.com
- Reduce access to lethal means – such as medications and firearms – among people at risk of suicide and perhaps develop a safety plan www.suicidesafetyplan.com
- Contact the National Suicide Prevention Lifeline for help: 1-800-273-TALK (8255) or at: https://suicidepreventionlifeline.org
- Locally, use linesforlife.org

Thank You

Fortune Favors the Prepared Mind

- Louis Pasteur