Learning Goals/Objectives

- Understand the evidence base for existing suicide prevention efforts
- Review strategies to prevent suicide, including:
  - *Indicated strategies* targeting at risk individuals
  - *Selective strategies* targeting at risk groups
  - *Universal strategies* targeting populations
- Appreciate the importance of effective *surveillance* strategies to inform future quality improvement efforts and research
Suicide Prevention

Challenges and Assumptions

- National Strategy for Suicide Prevention (2001)
  - *Promoted case finding for high risk individuals*

- The gap between aspirations and outcomes
  - ↑ in US suicide rate over the past decade
    - NSSP 2.0 (2012) attempts to improve on NSSP 1.0

- Challenges
  - *Distinguishing true cases from “false positives”*
    - How to distinguish who really is at risk to die?
  - *Numerous “false negatives” escape detection*
    - Most suicide completers unidentified by health system
Suicide Prevention
Challenges and Assumptions (cont.)

- Most individuals at risk for suicide are unrecognized and/or receive no treatment
  - Barriers include low perceived patient need, stigma, geography, lack of service availability, and finances
Suicide Prevention

Suicide and Mental Disorders

- Suicide associated with mental disorders
  - Mental/addictive disorders in ~ 90% of suicides
    - Mood disorders (MDD, Bipolar disorder)
    - Alcohol and Substance use disorders
    - Anxiety disorders
    - Schizophrenia
    - Personality disorders (e.g., Borderline PD)
  - Untreated mental disorders and addictions likely remediable risk factor for suicidal behavior
  - Access to effective mental health services considered critical to suicide prevention
Does Access to Care Matter?  
Observational Evidence

- Suicide rates negatively correlated with indicators of access to health and MH services
  - ↓ suicide rates associated with ↑ funding for MH services and ↑ per capita density of physicians, psychiatrists, and therapists
    - Tondo et al., 2006; Kapusta et al., 2009
  - Access to outpatient MH services and 24 hour crisis services associated with ↓ suicide rates
    - Pirkola et al., 2009
  - Residence in region with at least “minimal” MH safety net associated with ↓ suicide rates
    - Cooper et al., 2006
Does Access to Care Matter?
Observational Evidence (cont.)

- Negative correlation between antidepressant prescriptions and suicide rates across regions
  - ↑ Antidepressant use on the population level associated with ↓ suicide rates
    - Gibbons et al., 2005; Olfson et al., 2003
    - Isaacson et al., 2009; Ludwig et al., 2009

- ↑ population density associated with ↓ suicide
  - Suicide rates typically higher in rural settings
  - Relationship holds within and across countries

- Evidence suggests that treatment matters...
Suicide Prevention
Challenges and Assumptions (cont.)

- Inferences based on observational data are vulnerable to confounding
  - Risk of ecological fallacy
- Low base rate of suicide makes experimental study and RCTs targeting suicide difficult
- Many RCTs of treatments for mental disorders have excluded high risk suicidal patients
- Suicide is a complex, multidetermined problem that will likely require multifaceted solutions
Suicide Prevention
Evidence-Based Interventions

- Scientific support for intervention is limited
  - Restriction of access to lethal means
  - Education and training of health care providers in an effective model of depression care
  - Media guidelines for reporting on suicide
Suicide Prevention
Public Health Strategies

- Target individuals at risk for suicide
  - Indicated strategies

- Target groups at risk for suicide
  - Selective strategies

- Population-wide approaches
  - Universal strategies

- Strategies often overlap
  - Ex. - Means restriction relevant at all three levels
Indicated Strategies: Target Individuals at Risk

**Psychotherapy RCTs**

- **Cognitive Behavioral Therapy (CBT)**
  - *CBT for suicide attempters* ↓ *suicidal behaviors*
  - *Specific CBT elements focus on suicidality*
    - Brown et al., 2005

- **Dialectical Behavior Therapy (DBT)**
  - ↓ *rate of repeat suicide attempts in adults*
    - Linehan et al., 2006

- **Attachment Based Family Therapy (ABFT)**
  - ↓ *suicidal ideation* / *improved parent-child relations*
  - *Larger trial targeting suicidal behavior in progress*
    - Diamond et al., 2010
Indicated Strategies: Target Individuals at Risk

Psychotherapy RCTs (cont.)

Promising strategies include:

- **Augmenting familial and non-familial social support**
  - ↓ family conflict, expressed emotion, and criticism
  - ↓ patient sensitivity to conflict and criticism
    - Wedig and Nock, 2007

- “**Front-loading**” treatment in proximity to suicidal crisis

- **Encouraging positive affect, healthy sleep, and sobriety**
  - Brent et al., 2013
Indicated Strategies: Target Individuals at Risk

Pharmacotherapy RCTs

- **Antidepressants***
  - ↓ *suicidal ideation and behavior in adults*
    - Mediated by reductions in depressive symptoms
      - Gibbons et al., 2012
  - *Observational data suggest benefit*

- **Clozapine***
  - ↓ *suicide risk/aggression in schizophrenia RCTs*
  - *FDA suicide prevention indication in schizophrenia*

- **Lithium***
  - ↓ *suicide risk in adults with mood disorders*
# Lithium and Suicide Prevention

**Meta-Analysis: Lithium vs. Comparator** *(Cipriani et al., 2013)*

<table>
<thead>
<tr>
<th>Study</th>
<th>No of events/total</th>
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<th>Weight (%)</th>
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<tr>
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<td>Prien 1973a</td>
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<td>1/39</td>
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<tr>
<td>Prien 1973b</td>
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</table>
Indicated Strategies: Target Individuals at Risk
Pharmacotherapy and Somatic Treatments (cont.)

- Ketamine
  - *NMDA glutamate receptor antagonist*
  - ↓ suicidal cognition vs. midazolam & in open trials
    - Price et al., 2014; DiazGranados et al., 2010; Price et al., 2009

- Electroconvulsive therapy (ECT)

- Other neuromodulation strategies
  - *Transcranial Magnetic Stimulation (TMS)*
Indicated Strategies: Target Individuals at Risk
Implications of Available Research

- Encourage evidence-based psychotherapy
  - *Foster access to suicide specific interventions*
- Optimize antidepressant Rx
- ↑ appropriate use of clozapine
- ↑ appropriate use of lithium
- Research treatments to rapidly ↓ suicidality
Selective Strategies: Target At Risk Groups
Education, Training, and Facilitation of Care

- Education and training of health care providers to better recognize and treat suicidality and depression*
  - Primary care providers
    - Gotland study - ↑ PCC ability to treat depression associated with ↓ suicide rate
      - Rutz et al., 1989
    - PROSPECT study - Collaborative care for geriatric depressed patients ↓ suicidal thoughts relative to TAU
    - YPIC study - Collaborative care for adolescent depression associated with statistically non-significant ↓ suicidal ideation relative to TAU
      - Bruce et al., 2004
Selective Strategies: Target At Risk Groups
Screening and Case Identification

- Gatekeeper education and training
  - *Community or organizational “gatekeepers” educated and trained to identify individuals at risk of suicide and direct them to appropriate services*
    - Clergy and faith based organizations
    - Courts and corrections officers
    - Educators and students
    - Employers
    - First responders and law enforcement
    - Military, veterans, and affiliated personnel
    - Social service organizations
  - Still unproven as a means of preventing suicide
Selective Strategies: Target At Risk Groups

**Continuity of Care**

- Improving linkages between levels of care
  - Mandatory 7-day MH f/u after psychiatric discharge
    - ↓ suicide rate in UK observational study
      - While et al., 2012
        - ~40% of suicides in year after psychiatric hospitalization occur within first 30 days
        - Only ½ of discharges get MH care in 7-days
        - Only 2/3 in 1st month

- Specialty crisis assessment and management
  - ~½ of suicide attempters do not get specialty MH assessment in ED, yet risk of repeat attempt is lower in those discharged with a MH diagnosis...
    - Olfson et al., 2013
Selective Strategies: Target At Risk Groups

Continuity of Care

- Maintaining connectedness
  - *Frequent, personalized, and continuous contacts (letters, postcards, telephone)* after a suicide attempt shown to ↓ suicide rate in some studies
Selective Strategies: Target At Risk Groups

Multilevel, Community Based Programs

- Air Force Suicide Prevention Program (AFSPP)*
  - Reduced suicide risk by one-third
  - Components
    - Leadership education, training, and involvement
    - Increase awareness of mental health services
    - Encourage help-seeking behavior
    - Include suicide prevention in professional training
    - Behavioral health survey
    - Improve access to MH services
    - Traumatic stress response teams
    - Central surveillance system for tracking self-injury
Suicide Prevention
Universal Strategies for Populations

- Means restriction*
  - Detoxification of domestic gas
  - Discontinuation of highly toxic pesticides
    - 50% reduction in suicide in Sri Lanka
  - Limits on lethal drug dosing and packaging
    - Hawton et al., 2013
  - Physical barriers at bridges and suicide “hotspots”
  - Gun safety and control efforts
Suicide Prevention
Universal Strategies for Populations

- Media guidelines for suicide reporting*
  - Sensational reporting of suicide is harmful
    - ↑ risk when story explicitly describes suicide method, location, or uses dramatic/graphic headlines or images
      - “Cobain Uses Shotgun to Commit Suicide” vs. “Cobain Dead at 27”
    - ~10% of US suicides associated with contagion
  - Careful media coverage may also raise awareness and encourage individuals at risk to seek help
    - Report on suicide as a public health issues, not a crime
    - Include “Warning Signs” and “What to Do” sidebars
    - Avoid simple explanations and misinformation
    - Communicate that treatment matters - offer hope
    - See AFSP Recommendations for Reporting on Suicide
Suicide Prevention

Universal Strategies for Populations (cont.)

- Promotion of population wellness and resilience
  - Prevention efforts
    - Childhood adversity and maltreatment
    - Interpersonal and domestic violence
    - Alcohol and substance misuse
    - Social exclusion and bullying
  - Enhanced awareness and education efforts
    - Reduce prejudice and stigma related to mental and addictive disorders and suicidal behavior
    - Dissemination of knowledge of warning signs of suicide and how to connect individuals in crisis with care
    - Increase population willingness to accept help
Suicide Prevention

Improving Surveillance Strategies

- Fundamental problems with data collection
  - *Slow reporting and lack of timely feedback loop*
  - *Limited surveillance information on suicide*
  - *Inadequate determination of cause of death*
  - *Limited data on attempted suicide*
  - *Conflict of personal privacy and public health*

- Goal is a learning health care system
  - *Improve the usefulness and quality of data*
  - *Track and prevent suicide attempts and death*
    - Consider mandatory reporting of suicide attempts
  - *Improve timeliness of reporting of vital data*
Suicide Prevention
Potential Strategies for Ohio

- Public awareness and education
- Enhance care of depression in primary care
- Around the clock access to specialized crisis assessment and management in EDs
- Better Rx of mental and addictive disorders
  - ↑ access to evidence based psychotherapy
  - CBT and DBT for suicide attempters
  - ↑ use of lithium in mood disorders
  - ↑ use of clozapine in schizophrenia and SMI
- Enhancements of care for periods of ↑ ↑ ↑ ↑ risk
Suicide Prevention
Potential Strategies for Ohio (cont.)

- Means restriction
  - Firearms safety
  - Manage suicide “hotspots”

- Prevention efforts
  - Childhood adversity/maltreatment
  - Alcohol and drug use

- Enhance social connectedness
  - “Prevention may be a matter of a caring person with the right knowledge being available in the right place at the right time” (AFSP)
Suicide Prevention
Responding to an Identified Crisis

- If a person is threatening, talking about or making plans for suicide, these are signs of acute crisis
- Do not leave the person alone.
- Remove any firearms, drugs or sharp objects that could be used for suicide from the vicinity
- Take person to an emergency room or clinic at a hospital, psychiatric hospital, or other health facility
- If the above options are unavailable, call 911 or the National Suicide Prevention Lifeline at:
  - 1-800-273-TALK (8255)
Local Resources

- Nationwide Children’s Hospital BH
  - Intake 614-355-8080

- Netcare Access
  - Crisis Hotline 614-276-2273

- OSU Behavioral Health
  - Crisis Team 614-293-8205
  - Outpatient Services 614-293-4600
Selected References