Bringing Eating Disorders Prevention Into Focus as a Public Health Priority

A Research Plan of Action

S. Bryn Austin, ScD
Division of Adolescent Medicine
Boston Children’s Hospital
Harvard School of Public Health
Overview of Presentation

- Part 1: Are eating disorders & poor body image important issues for society, public health?
  - Brief review of wide-ranging health consequences
- Part 2: What does prevention science offer?
  - Two examples applied to eating disorders
- Part 3: How can public health agenda be changed?
  - A strategic approach to workforce training
Importance of Eating Disorders for Society, Public Health

U.S. Lifetime Prevalence of DSM-IV Eating Disorders

- **Females**:
  - Anorexia: 0.9%
  - Bulimia: 1.5%
  - Binge Eating Disorder: 3.5%

- **Males**:
  - Anorexia: 0.3%
  - Bulimia: 0.5%
  - Binge Eating Disorder: 2.0%

U.S. National Comorbidity Replication Study (Hudson et al. 2007)
Importance of Eating Disorders for Society, Public Health

Lifetime Prevalence in Japanese Young Women

- **Bulimia**: Range: 1.9-2.9%
- **Anorexia**: Range: 0.03-0.2%

Chisuwa & O’Dea 2010 (Review article)
Importance of Eating Disorders for Society, Public Health

% Vomit/Take Laxatives for Weight in Past Month

Nearly 2 million girls, 1 million boys vomit to control their weight each year in U.S.

Girls: 6%
Boys: 3%

U.S. High School Students

CDC YRBSS 2011; Austin et al 2008; Croll et al 2002
Importance of Eating Disorders for Society, Public Health

% Reporting Lifetime Use of Laxatives, Diet Pills, Diuretics in Japanese High School Girls

Nakamura et al 1999
Importance of Eating Disorders for Society, Public Health

% Adolescents Scoring >20 on EAT-26

Yamamoto et al 2007; Nishizawa et al 2003; Austin et al 2008
Importance of Eating Disorders for Society, Public Health

- Documented in developed and emerging economies around the world (Treasure et al. 2010; de Souza Ferreira et al. 2008)

- Affect all genders, all racial/ethnic groups (Chao et al. 2008; Marques et al. 2010; Austin et al. 2008)

- Positive association with SES often assumed
  - But not supported in population-based studies (Striegel-Moore et al. 2000; Rogers et al. 1997)
Health Consequences Wide Ranging

- Comorbid Mental Illness
- Risk Taking in Sexual Encounters
- Substance Abuse
  - Typical Drugs
  - Plus Laxatives, Diet Pills, Steroids
- Chronic Activation of Stress Response
- Comorbid Medical Problems:
  - Osteoporosis
  - GI, Cardiac, Dental, Infertility
  - Cancers: Esophageal, Others?
- Obesity, Weight Gain
- High Treatment Costs
- Lost Work Productivity
- Reduced QALYs
- $$$ for Purchasing:
  - Wasted Binge Foods
  - Laxatives, Diet Pills, Steroids, etc.
  - Cosmetic Procedures
- Persistent Gender-Based Disparities
Compelling Need for Large-Scale Prevention

- Need to reach many millions at risk
- Need to reach youth early with primary prevention
  - Before onset of poor body image, eating disorders, and related disordered behaviors
- **In other words**...
  - Compelling need for *public health approach*
This Idea Proposed by Others...

• In 2007, a *Lancet* editorial asked:
  – "Is it time for a public health approach to eating disorders?"
  – Leading scholars in field responded with a resounding *Yes!* in letter to editor
    (Taylor, Franko, Neumark-Sztainer, Paxton, Shapiro 2007)
Yes, but...

...Still, we are left with the question "How?"

- How can we bring a public health approach to eating disorders prevention?
Part 2: Prevention Science

Tools of Prevention Science
Tools of Prevention Science

• Many tools for prevention in public health
  – Time this afternoon for just two examples...
Prevention Science Tools
Example #1

Prevention Maturation Schema
Prevention Maturation Schema

- Systematic framework to classify phases of prevention research
  - Sallis, Owen, & Fotheringham (2000)
  - Based on core beliefs that:
    - Goal of public health to improve population health, reduce/prevent human suffering
    - Achieving goal requires *sequential research* from descriptive to analytic studies to interventions
Five phases of prevention maturation schema:
- 1: Establish link between risk behavior & health
- 2: Develop methods for measuring risk behavior
- 3: Identify causes of risk behavior
- 4: Evaluate preventive interventions (1° or 2°)
- 5: Evaluate dissemination of preventive interventions
Prevention Maturation Schema

- Earlier phases provide foundation for later phases
  - Young fields concentrate in earlier phases
    - i.e., Phases 1-3
  - Mature fields concentrate in later phases
    - i.e., Phases 4-5
Practical Utility of Schema

- Apply to field’s empirical literature to answer two key questions:
  - Question #1: Is a field ready for preventive intervention research?
  - Question #2: Is productivity in prevention research comparable to earlier phases?

- Productivity in Phases 4-5 relative to Phases 1-3
Illustration of Application of Schema to Eating Disorders Literature

• Applied to:
  1) *International Journal of Eating Disorders*
    • Articles: Jan 2005 - Dec 2010
      – N=701 articles
    – Disclaimer: I am editorial board member
Illustration of Application of Schema to Eating Disorders Literature

• Applied to:

  2) *Eating Disorders: Journal of Treatment & Prevention*

  • Articles: Jan/Feb 2005-Oct/Dec 2010
    – N=280 articles

  – *Disclaimer: I am editorial board member*
Illustration of Application of Schema to Eating Disorders Literature

Methods
- Tailored coding rules of Sallis et al. (2000)
  - Coded as unrelated to prevention: Diagnostic criteria, course after diagnosis, treatment
- Two independent coders
- Tallied number of articles coded in each phase
Results of Schema

Applied to *International Journal of Eating Disorders*

N=701 articles

Phase 1: 4%
Phase 2: 15%
Phase 3: 26%
Phase 4: 3%
Phase 5: 0%

Dx, Tx: 52%

Tx etc.
Results of Schema

- *International Journal of Eating Disorders*
  - Substantial development through Phase 3 on causes of risk
    - Steep drop off after Phase 3

*So how about* Eating Disorders: The Journal of Treatment & Prevention?
*Let’s take a look...*
Results of Schema

Prevention Science Tools Example #1

Applied to *Eating Disorders: The Journal of Treatment & Prevention*

<table>
<thead>
<tr>
<th>Phase</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ph 1</td>
<td>1%</td>
</tr>
<tr>
<td>Ph 2</td>
<td>4%</td>
</tr>
<tr>
<td>Ph 3</td>
<td>29%</td>
</tr>
<tr>
<td>Ph 4</td>
<td>8%</td>
</tr>
<tr>
<td>Ph 5</td>
<td>0%</td>
</tr>
</tbody>
</table>

N=280 articles

Austin 2012
Results of Schema

- *Eating Disorders: J Treatment & Prevention*
  - Again, substantial development through Phase 3 on causes of risk
    - Steep drop off after Phase 3

- Limitation
  - Other prevention studies published prior, elsewhere
    - Though not likely to substantially change findings
What Do Schema Results Mean?

**Question #1:** Is field of eating disorders ready for preventive intervention research?

- **YES!**

  - Substantial literature on causes (Phase 3) means field well-prepared to move to next phase
Question #2: Is productivity in prevention research comparable to earlier phases?

- NO!

- In fact, sharp drop off after Phase 3 suggests too few prevention scientists entering field of eating disorders
What Do Schema Results Mean?

- **Why??**
  - *Is there a gap in the prevention science training pipeline?*
Is there a gap in the prevention science training pipeline?

Hold that thought...
Prevention Science Tools Example #2: Application to Eating Disorders

Environmental Models and Leveraging the Macro for Prevention
Decades of work on role of environment in causation and prevention

- Multiple frameworks, tools offered to define environment, assess health links
- From psychology, sociology, public health, etc.

- Moos 1979; Bronfenbrenner 1986; McLeroy et al 1988; Winnette et al 1989; Cheadle et al 1992; Swinburn et al 1999, 2011; and many more
Public health targets many aspects of environment

- But offers special expertise in *macro* environmental sectors, strategies to leverage macro for prevention

**Example strategy:**
- Target law and policy

Wang *et al* 2013
Tool of Macro Strategies: Target Law and Policy

- Powerful tool to promote health
  - Obesity prevention increasing with regulatory strategy innovation, some successes
    - e.g., soda & fast food restrictions, menu labeling, urban bicycle trails, restrictions on ads to children
      - Mello *et al* 2006; Pomeranz *et al* 2009; Pomeranz 2010
How might macro strategies targeting law and policy be applied to eating disorders prevention?
Illustration of Law/Policy Strategies for Eating Disorders Prevention

- First ask:
  - What are eating disorders/body image equivalents of tobacco, alcohol, fast food, or soda industries?
Illustration of Law/Policy Strategies for Eating Disorders Prevention

- Equivalents of tobacco, alcohol, fast food, or soda industries?
Illustration of Law/Policy Strategies for Eating Disorders Prevention

- **Possible target?** Product sales
  - Diet pills, laxatives, diuretics are readily available in stores for youth to purchase, abuse
  - Ipecac, ephedra still available online
  - Regulatory opportunity for governments and drug administrative agencies

Pomeranz, Taylor, Austin 2013
Illustration of Law/Policy Strategies for Eating Disorders Prevention

• **Another possible target?** Advertising
  – Deceptive advertising illegal in most places, yet many diet products make grandiose claims
  • Is there regulatory opportunity here for governments and advertising regulators?
    – Restrict ads?
    – Or “black box” warnings (e.g., “This product not effective for weight loss”)?
Are We Ready for Law/Policy Action?

- Three conditions needed to trigger law/policy action for prevention...

(Mello et al 2006)
Condition #1 to Trigger Action

1) Political will
   - Requires advocacy to put ED prevention on political agenda for voters, policymakers
     • Methods: Lobbying government, community organizing, media advocacy to shift social norms
     • *Research Challenge*: Evaluate counter ads, social norms campaigns, media coverage, public opinion polls; Need political scientists on teams
2) Practical considerations
   - How to operationalize ideas into law/policy?
     • Methods: Cross-disciplinary legal research by public health law scholars
       - e.g., RWJ-funded studies: Pomeranz, Taylor, & Austin 2013; Cohen (Under review)
     • Research Challenge: Need legal scholars on teams

Austin 2012
Condition #3 to Trigger Action

3) Basis in evidence
   a) Do economic costs favor prevention?
   b) Does science link exposure to long-term health problems?
3) Basis in evidence

a) Do economic costs favor prevention?

- Methods: Economic analyses

  - Some economic studies on costs of *treatment* (Koran *et al* 1995; Striegel-Moore *et al* 2000; Reas *et al* 2000; Crow *et al* 2009)

  - *One* economic study (Planet Health) showing *prevention* saves $$ (Wang, Nichols, Austin 2011)

- *Research Challenge*: Need economists on teams

  Austin 2012
Condition #3 to Trigger Action

3) Basis in evidence

b) Does science link exposure to long-term health problems?

- Methods: Psychology especially & other disciplines have & can contribute

- **Research Challenge**: Examine long-term health effects of exposures amenable to regulation
  - i.e., specific products, advertising to youth, etc.
Prevention Science Tools Summary

• Wide range of tools in prevention science
  – Many applicable to eating disorders prevention
  – Offered just two examples this afternoon
    • Prevention maturation schema
    • Macro environment → Law/policy strategies

• Caveat:
  – Admittedly, easy to say need to use array of prevention science tools...
    ...but not so easy to do
How?

How do we integrate wide range of tools & transdisciplinarity into eating disorders prevention?

Which brings us back to that thought we were holding...
Is there a gap in the training pipeline??

YES!
Training Pipeline Gap: Where, Why?

- Public health schools are leaders in training researchers in prevention science, but...
  - ...laggards in training researchers in eating disorders

**Noteworthy:** Psychology by far most productive field in eating disorders research
Training Pipeline Gap: Where, Why?

- Public health schools are leaders in training researchers in prevention science, but...
  - ...laggards in training researchers in eating disorders
  - *Advancing prevention on large scale will require public health workforce with appropriate expertise*

*How can we do that?*
Part 3: Strategic Training

STRIPED A Public Health Incubator
Strategic Training Initiative for the Prevention of Eating Disorders

www.hsph.harvard.edu/striped

A collaboration of Harvard School of Public Health and Boston Children’s Hospital
Launched June 2009
Our Mission

• To train the next generation of health professionals to harness the power of public health to prevent eating disorders and related problems with food, weight, and appearance.

• We strive to create a society where girls and boys alike can grow up at home in their own bodies.
Our Team

- Faculty
  - Bryn Austin, ScD (Director)
  - Kendrin Sonneville, ScD, RD, LDN (Co-director)
  - Marie McCormick, MD, ScD
  - Jean Emans, MD
  - Jerel Calzo, PhD

- Trainees: *More than 20 so far & adding more*

- International Expert Advisory Panel

- Community organization partners
Preparing Next Generation for Eating Disorders Prevention

Training goals

1) Build *transdisciplinary* competency into workforce to meet challenge of eating disorders prevention

2) *Integrate* eating disorder prevention into formal public health & adolescent health workforce training
Five Training Components of STRIPED

- Case-Method Teaching
- Independent Study Course
- Academic Seminars
- Practicum Fieldwork
- Research Opportunities
Preparation Next Generation for Eating Disorders Prevention

- Build on what has been achieved in field to date, move beyond to:
  - Apply wide range of prevention science tools, transdisciplinary approaches
  - Prepare public health school graduates

- Work from inside and outside city, state, federal, and other settings to get eating disorders prevention on public health agenda
Why STRIPED? Why Now?

Eating disorders and disordered weight control behaviors present a significant threat to the health of adolescents and adults, yet they remain largely overlooked by public health and preventive medicine professionals. To address this critical need, we launched STRIPED in July 2009, based at the Harvard School of Public Health and Children’s Hospital Boston, with the goal of building a transdisciplinary training initiative that will generate professionals with the depth and range of expertise and skills needed to take on the challenge of eating disorders prevention.

A Public Health Incubator

Our initiative is a public health incubator, designed to cultivate the creation of novel insights and strategies for prevention by introducing trainees to a rich array of disciplinary perspectives, methodologies, and theories and providing them with opportunities to join crosscutting collaborative teams.