

# Risk of Suicidality in Adolescents and Children Taking Antidepressants: A Discussion for the Non-Medical Mental Health Professional

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# Presentation Objectives

- Obtain an understanding of the recent FDA report regarding the increased risk of suicidality in children and adolescents taking antidepressants.
- Gain knowledge of the proposed theories behind this increased risk of suicidality.
- Identify particular antidepressants that appear to place adolescents and children at most risk.
- Learn tips and techniques to monitor safety of adolescents and children taking antidepressants.
- Provide basic education to families regarding the FDA antidepressant warning.

# FDA ANTIDEPRESSANT WARNING

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WE ARE NOT PHYSICIANS,  
WHY DO WE CARE?

# We Often Are the Experts!

- In 2002, Psychiatrists, Pediatricians, Family Practitioners, and Neurologists continued to be the primary prescribers of antidepressants.
- Hence, many adolescents and children are prescribed antidepressants by providers with no specialized mental health training.
- This is where we come in.

Based on Rigoni, G.C. (2/4/04) Drug Utilization for Selected Antidepressants Among Children & Adolescents in the U.S. Presentation at FDA Meeting, Washington, D.C.)

# We Typically See Our Patients the Most!

- Often, we also spend the most time with our patients and families and may be able to more thoroughly address their questions, concerns, perceptions, and experiences of antidepressants and communicate these issues to their treating physician.

# We Have a Responsibility to our Patients!

- As a result, it is also our responsibility to be educated about the risks and benefits involved in the use of psychiatric medications. Patients depend on us and trust us for our expertise, judgment, and treatment recommendations.

# We Often Make the Physician Referrals!

- Additionally, non-medical mental health professionals are frequently the initial treatment providers for children and adolescents with psychiatric issues.
- It is often our role to determine if our patients should be referred to a physician for a psychiatric medication evaluation.

# ESTABLISHING THE BACKGROUND

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WHAT DO WE NEED TO  
KNOW BEFORE DISCUSSING  
THE RISK OF SUICIDALITY  
WITH ANTIDEPRESSANTS?

# Prevalence of Suicidality

- Suicidal Ideation: 20%
- Suicide Attempts: 1.3-3.8% males  
1.5-10% females
- Risk for Recurrent Attempts: 15-30% year
- Risk for Completed Suicide: 0.5-1.0% year
- Increased Risk of Suicide among Attempters 10-60 fold increase

Brent, D.A. (3/28/06 ) Suicide Risk: Comprehensive Assessment and Clinical Management Presentation, Western Psychiatric Institute & Clinic Pittsburgh, PA.

# Prevalence of Suicidality

- Estimated Number of Ideation episodes per year made by U.S. Adolescent Suicide Ideators (N=981)

## # of Episodes

## % of Ideators

1

45%

2

24%

3 or More

31%

Based on Shaffer, D. (2/4/04) Suicide and Related Problems in Adolescents.  
Presentation at FDA Meeting, Washington, D.C.)

# Prevalence of Suicidality

- Estimated Number of Attempts per year made by U.S. Adolescent Suicide Attempters in 2001 (N=13,601)

## # of Attempts

## % of Attempters

1

53%

2 or 3

30%

4 or More

17%

- 1 suicide attempt increases risk of another attempt 15X

Based on Shaffer, D. (2/4/04) Suicide and Related Problems in Adolescents.  
Presentation at FDA Meeting, Washington, D.C.)

# Psychiatric Disorders

- Over 80% of suicide attempters and 90% of completers had at least one Axis I disorder.
  - Most common is a Mood Disorder.
  - Bipolar Disorder, particularly Mixed State.
  - Substance Abuse/Dependence.
  - Cluster B Disorders (APD, BPD, HPD, NPD).
  - Schizophrenia
- Comorbidity, chronicity, and severity of psychiatric disorder(s) all increase suicide risk.

Brent, D.A. (3/28/06 ) Suicide Risk: Comprehensive Assessment and Clinical Management Presentation, Western Psychiatric Institute & Clinic Pittsburgh, PA.

# Psychiatric Disorders

- However, 40% of youth younger than Age 16 who completed suicide had no Psychiatric Disorder. May be due to:
  - Impulsivity.
  - Availability of firearms.

Brent, D.A. (3/28/06 ) Suicide Risk: Comprehensive Assessment and Clinical Management Presentation, Western Psychiatric Institute & Clinic Pittsburgh, PA.

# U.S. Antidepressant Usage

- In 2002, 157 million antidepressant prescriptions dispensed in the U.S. (All Ages)
  - 2.7 million (Age 1-11 years)(~2% of total)
  - 8.1 million (Age 12-17 years)(~5% of total)

Based on Rigoni, G.C. (2/4/04) Drug Utilization for Selected Antidepressants Among Children & Adolescents in the U.S. Presentation at FDA Meeting, Washington, D.C.)

# Top Antidepressants

- Top 5 antidepressants prescribed to children age 1-11 (2002):
  - Zoloft (sertraline)(31% of 2.7 million prescriptions)
  - Paxil (paroxetine)(18% of 2.7 million prescriptions)
  - Prozac (fluoxetine)(16% of 2.7 million prescriptions)
  - Wellbutrin (bupropion)
  - Celexa (citalopram)

Based on Rigoni, G.C. (2/4/04) Drug Utilization for Selected Antidepressants Among Children & Adolescents in the U.S. Presentation at FDA Meeting, Washington, D.C.)

# Top Antidepressants

- Top 5 antidepressants prescribed to adolescents age 12-17 (2002):
  - Zoloft (26% of 8.1 million prescriptions)
  - Paxil (22% of 8.1 million prescriptions)
  - Wellbutrin (13% of 8.1 million prescriptions)
  - Celexa
  - Prozac

Based on Rigoni, G.C. (2/4/04) Drug Utilization for Selected Antidepressants Among Children & Adolescents in the U.S. Presentation at FDA Meeting, Washington, D.C.)

# Antidepressant Indications

- Primary Diagnostic indication for the outpatient use of antidepressants (2002):
  - Age 1-11: Anxiety Disorders (31%); Mood Disorders (27%); Attention Deficit Hyperactivity Disorder (ADHD)(17%)
  - Age 12-17: Mood Disorders (59%); Anxiety Disorders (18%); ADHD (8%)

Based on Rigoni, G.C. (2/4/04) Drug Utilization for Selected Antidepressants Among Children & Adolescents in the U.S. Presentation at FDA Meeting, Washington, D.C.)

# FDA INVESTIGATIONAL PROCEDURE

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HOW DID THE FDA COME TO  
THEIR CONCLUSIONS? (I.E.  
WHAT DID THEY DO?; HOW  
DID THEY DO IT?)

# Antidepressants Investigated by FDA

- Zoloft (sertraline): FDA approved for treatment of pediatric Obsessive Compulsive Disorder (OCD).
- Prozac (fluoxetine): Only antidepressant approved by the FDA to treat pediatric Major Depressive Disorder (MDD). Also FDA approved to treat pediatric OCD.
- Luvox (fluvoxamine): FDA approved for treatment of pediatric OCD.

# Antidepressants Investigated by FDA

- Paxil (paroxetine)
- Celexa (citalopram)
- Wellbutrin (bupropion)
- Effexor (venlafaxine)
- Serzone (nefazodone)
- Remeron (mirtazapine)

# Drug Trials Investigated by FDA

- Eight Sponsors of 9 antidepressant medications submitted data on 25 pediatric studies conducted from 1983-2001. Only 24 studies were analyzable.
  - 16 involved MDD
  - 4 involved OCD
  - 2 involved Generalized Anxiety Disorder (GAD)
  - 1 involved Social Anxiety Disorder (Social Phobia)
  - 2 involved ADHD

Based Laughren, T. (2/4/04) Brief Regulatory History of Antidepressants and Suicidality and Update on Current Plans for Analysis of Pediatric Suicidality Data from Controlled Trials. Presentation at FDA Meeting, Washington, D.C.)

# Drug Trials Investigated by FDA

- Studies ranged in length from 4 to 16 weeks.
- Total of over 4400 adolescents and children involved in these studies.
- Age Range: 6-17

Based Laughren, T. (2/4/04) Brief Regulatory History of Antidepressants and Suicidality and Update on Current Plans for Analysis of Pediatric Suicidality Data from Controlled Trials. Presentation at FDA Meeting, Washington, D.C.)

# Types of Data Reviewed by FDA

- All adverse events (AEs) identified by the studies as 1) possibly suicide related 2) life-threatening 3) accidental injuries 4) accidental overdoses.
- Total of 426 AEs were identified.

Hammad, T.A. (8/16/04). FDA Report on Relationship Between Psychotropic Drugs and Pediatric Suicidality. Review and Evaluation of Clinical Data. U.S. Food and Drug Administration.

# Request for Blinded Review

- FDA found wide divergence in the 426 events studies had classified in relation to suicidality. As a result, the FDA requested a blinded review of all events by an expert group of suicidologists (including David Brent, MD).

Hammad, T.A. (8/16/04). FDA Report on Relationship Between Psychotropic Drugs and Pediatric Suicidality. Review and Evaluation of Clinical Data. U.S. Food and Drug Administration.

# Results of Blinded Review

- All 426 events were blinded for drug, study, and treatment prior to being sent to the panel.
- Upon expert panel review, 261 events were considered nonsuicidal in nature and excluded from FDA analysis.
- No patients in the 25 studies actually committed suicide.

Hammad, T.A. (8/16/04). FDA Report on Relationship Between Psychotropic Drugs and Pediatric Suicidality. Review and Evaluation of Clinical Data. U.S. Food and Drug Administration.

# Results of Blinded Review

- Out of the remaining 165 AEs, 45 events involved the same 20 patients who had more than one AE. As a result, the most severe possibly suicide related event for a patient, as coded by the expert panel, was used.
- Remaining 140 unique patient events were considered for analysis.

Hammad, T.A. (8/16/04). FDA Report on Relationship Between Psychotropic Drugs and Pediatric Suicidality. Review and Evaluation of Clinical Data. U.S. Food and Drug Administration.

# Other Data Reviewed by FDA

- Suicidality items on various study depression rating scales were also analyzed. These items involved:
  - Worsening of suicidality scores.
  - Emergence of suicidality scores.
- Depression rating scales included the CDRS-R, K-SADS-P, Hamilton-D, and MADRS.

Hammad, T.A. (8/16/04). FDA Report on Relationship Between Psychotropic Drugs and Pediatric Suicidality. Review and Evaluation of Clinical Data. U.S. Food and Drug Administration.

# Other Variables Considered

- FDA considered the following variables in their analysis as potentially impacting the relationship between antidepressants and suicidality in children and adolescents.
  - Demographics: age, gender, race, BMI
  - Study-related: study location; study setting.
  - Disease-related: baseline severity & suicidality score; duration of illness prior to treatment.

# Other Variables Considered

- Drug-related: Duration of antidepressant exposure; discontinuation; erratic compliance.
- Prior History of: suicide attempt, suicide ideation, psychiatric hospitalization, substance abuse, hostility or aggressive behavior, irritability or agitation, insomnia.

Hammad, T.A. (8/16/04). FDA Report on Relationship Between Psychotropic Drugs and Pediatric Suicidality. Review and Evaluation of Clinical Data. U.S. Food and Drug Administration.

# GET TO THE POINT: FDA FINDINGS IN A NUTSHELL

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WHAT IS THE RELATIONSHIP  
BETWEEN ANTIDEPRESSANTS  
AND RISK OF SUICIDALITY IN  
CHILDREN AND ADOLESCENTS?

# FDA Findings: All Antidepressants

- FDA found a slightly increased risk of suicidal thoughts and behavior among pediatric patients taking antidepressants compared to those taking placebo (a sugar pill).
- The rate of suicidality was 4% in the antidepressant group compared to 2% in the placebo group.

FDA Public Health Advisory. Suicidality in Children and Adolescents Being Treated With Antidepressant Medications, October 15, 2004.

# FDA Findings: All Antidepressants

- None of the 9 antidepressants individually displayed a statistically significant risk of suicidal ideation and behavior.
- In other words, the FDA could not rule out that random chance caused a particular antidepressant to appear to increase the risk of suicidal ideation or behavior.

Hammad, T.A. (8/16/04). FDA Report on Relationship Between Psychotropic Drugs and Pediatric Suicidality. Review and Evaluation of Clinical Data. U.S. Food and Drug Administration.

# FDA Findings: All Antidepressants

- When the results of the analysis for all 9 antidepressants were combined, however, a statistically significant increased risk was found which was consistent across multiple studies of various antidepressants.

Hammad, T.A. (8/16/04). FDA Report on Relationship Between Psychotropic Drugs and Pediatric Suicidality. Review and Evaluation of Clinical Data. U.S. Food and Drug Administration.

Brent, D.A. (Oct-2004) Antidepressants and pediatric depression -- The risk of doing nothing. New England Journal of Medicine. 351(16), 1598-1601.

# FDA Findings: All Antidepressants

- Risk more pronounced in nondepressed youth with an Anxiety Disorder.
- Risk most common in studies also demonstrating increased hostility.
- FDA found no difference in scores for suicidal ideation on the depression rating scales when comparing youth on antidepressants vs. placebo.

Brent, D.A. (3/28/06 ) Suicide Risk: Comprehensive Assessment and Clinical Management Presentation, Western Psychiatric Institute & Clinic Pittsburgh, PA.

# FDA Findings: Specific Antidepressants

- Possibility of suicidal ideation in order of risk (More to Less Risk) (Note: Results could have occurred by random chance. Risks for all were comparatively low.)
- Effexor, Effexor XR
- Zoloft
- Remeron
- Paxil
- Prozac
- Celexa

Hammad, T.A. (8/16/04). FDA Report on Relationship Between Psychotropic Drugs and Pediatric Suicidality. Review and Evaluation of Clinical Data. U.S. Food and Drug Administration.

# FDA Findings: Specific Antidepressants

- Possibility of suicidal behavior in order of risk (More to Less Risk) (Note: Results could have occurred by random chance. Risks for all were comparatively low.)
- Effexor, Effexor XR
- Paxil
- Celexa
- Prozac
- Zoloft
- Remeron

Hammad, T.A. (8/16/04). FDA Report on Relationship Between Psychotropic Drugs and Pediatric Suicidality. Review and Evaluation of Clinical Data. U.S. Food and Drug Administration.

# Complications of FDA Investigation

- Studies analyzed were not conducted in such a manner to fully and adequately assess patients for emergent suicidality.
- Possible failure to fully capture all AEs in the database possibly related to antidepressants and suicidality.

Laughren, T.P. FDA Memo: Background Comments for 2/2/04 Meeting of PDAC and Peds AC. 1/5/04

# Complications of FDA Investigation

- A recent multi-site adolescent depression study found that depression improved in adolescent patients 4 times as frequently as suicidality developed.
- Lack of universal classifications/ definitions for suicide related events.

Brent, D.A. (Oct-2004) Antidepressants and pediatric depression -- The risk of doing nothing. New England Journal of Medicine. 351(16), 1598-1601.

Laughren, T.P. FDA Memo: Background Comments for 2/2/04 Meeting of PDAC and Peds AC. 1/5/04

# Complications of FDA Investigation

- Recent study found suicide attempt rate was the greatest one month prior to an antidepressant prescription as opposed to after starting the medication.
- Some adult studies urge caution in using data regarding suicidal ideation or attempts to make predictions regarding risk of completed suicide.

Simon, G.E. et. al. (2006) Suicide Risk During Antidepressant Treatment. American Journal of Psychiatry; 163:41-47.

# Complications of FDA Investigation

- Some researchers believe that developmentally and biologically children vs. adolescents may vary in their responses to psychiatric medications. Further research is needed to determine if this increased suicidality risk differs in children (Age 7-11) compared to adolescents (Age 12-17).
- High placebo response rate in the larger studies compared to the smaller studies. Was depression accurately identified?

# FDA RECOMMENDATIONS

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WHAT DID THE FDA  
RECOMMEND BE DONE  
REGARDING THIS  
INCREASED RISK?

# Challenge of FDA Analysis

- Balancing Antidepressant Risk vs. Benefit
  - Missing risk/inflating benefit leads to greater comfort with antidepressants than is warranted.
  - Overestimating risk/Underestimating benefit leads to over conservative use of antidepressants or lack of availability all together for child and adolescent population.
  - Considering Long-Term Benefit vs. Short-Term Risk.

Based Laughren, T. (2/4/04) Brief Regulatory History of Antidepressants and Suicidality and Update on Current Plans for Analysis of Pediatric Suicidality Data from Controlled Trials. Presentation at FDA Meeting, Washington, D.C.)

# FDA Final Recommendations:

- FDA instructs drug companies to place a “**Black Box Warning**” on labeling of all antidepressants to include an increased risk of suicidality in pediatric patients and a statement regarding whether the particular antidepressant is approved for any pediatric indication(s) and, if so, which one(s).

FDA Public Health Advisory. Suicidality in Children and Adolescents Being Treated With Antidepressant Medications, October 15, 2004.

# FDA Final Recommendations:

- A "Patient Medication Guide", developed by FDA, summarizing this increased suicide risk, must be provided with each antidepressant prescription.

FDA Public Health Advisory. Suicidality in Children and Adolescents Being Treated With Antidepressant Medications, October 15, 2004.

# FDA Final Recommendations:

- FDA formally recognizes that depression and other psychiatric disorders in pediatric patients can have significant consequences if not appropriately treated. The warning language recognizes this need but advises close monitoring of patients as a way of managing the risk of suicidality.

FDA Public Health Advisory. Suicidality in Children and Adolescents Being Treated With Antidepressant Medications, October 15, 2004.

# FDA Final Recommendations:

- Pediatric patients being treated with antidepressants for any indication should be closely observed for:
  - Clinical worsening
  - Agitation
  - Irritability
  - Suicidality
  - Unusual changes in behavior

FDA Public Health Advisory. Suicidality in Children and Adolescents Being Treated With Antidepressant Medications, October 15, 2004.

# FDA Final Recommendations:

- This monitoring is especially important during the initial few months of a course of drug therapy, or at times of dose changes, either increases or decreases.

FDA Public Health Advisory. Suicidality in Children and Adolescents Being Treated With Antidepressant Medications, October 15, 2004.

# FDA Final Recommendations:

- This monitoring should include daily observation by families and caregivers and frequent contact with the prescribing physician.
- FDA also recommends that prescriptions for antidepressants be written for the smallest quantity of tablets, consistent with good patient management, in order to reduce the risk of overdose.

FDA Public Health Advisory. Suicidality in Children and Adolescents Being Treated With Antidepressant Medications, October 15, 2004.

# FDA Final Recommendations:

- FDA recommends further research on antidepressant effectiveness and increased suicidality in adolescents, children, & adults.
- Suggestions made to develop pediatric MDD effectiveness studies more closely mirroring adult MDD effectiveness studies.

Laughren, T.P. FDA Memo: Background Comments for 2/2/04 Meeting of PDAC and Peds AC. 1/5/04

# ANTIDEPRESSANTS AND SUICIDALITY

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WHAT ARE POTENTIAL  
THEORIES BEHIND THIS  
INCREASED RISK?

# Potential Theories Behind Increased Risk of Suicidality

- Roll back phenomenon: view that antidepressants with prominent energizing effects may actually increase suicidal behavior in severely depressed patients who are suicidal but also have psychomotor retardation and thus inhibited from acting on their suicidal thoughts.

Based on Teicher, M. (9/1991) Presentation at Psychopharmacological Drugs Advisory Committee (PDAC) Meeting, Washington, D.C.)

Based Laughren, T. (2/4/04) Brief Regulatory History of Antidepressants and Suicidality and Update on Current Plans for Analysis of Pediatric Suicidality Data from Controlled Trials. Presentation at FDA Meeting, Washington, D.C.)

# Potential Theories Behind Increased Risk of Suicidality

- Paradoxical worsening of depression: view that, in rare patients, the depressed mood may actually worsen as a result of antidepressant treatment.

Based on Teicher, M. (9/1991) Presentation at Psychopharmacological Drugs Advisory Committee (PDAC) Meeting, Washington, D.C.)

Based Laughren, T. (2/4/04) Brief Regulatory History of Antidepressants and Suicidality and Update on Current Plans for Analysis of Pediatric Suicidality Data from Controlled Trials. Presentation at FDA Meeting, Washington, D.C.)

# Potential Theories Behind Increased Risk of Suicidality

- Uncontrolled motor restlessness: view that some antidepressants are associated with uncontrolled motor restlessness, and the belief that this may lead to suicidal behavior in certain depressed patients.

Based on Teicher, M. (9/1991) Presentation at Psychopharmacological Drugs Advisory Committee (PDAC) Meeting, Washington, D.C.)

Based Laughren, T. (2/4/04) Brief Regulatory History of Antidepressants and Suicidality and Update on Current Plans for Analysis of Pediatric Suicidality Data from Controlled Trials. Presentation at FDA Meeting, Washington, D.C.)

# Potential Theories Behind Increased Risk of Suicidality

- Generation of anxiety and panic attacks: view that certain antidepressants may induce anxiety and panic attacks, and that these may lead to suicidal behavior in certain depressed patients.

Based on Teicher, M. (9/1991) Presentation at Psychopharmacological Drugs Advisory Committee (PDAC) Meeting, Washington, D.C.)

Based Laughren, T. (2/4/04) Brief Regulatory History of Antidepressants and Suicidality and Update on Current Plans for Analysis of Pediatric Suicidality Data from Controlled Trials. Presentation at FDA Meeting, Washington, D.C.)

# Potential Theories Behind Increased Risk of Suicidality

- Stage shifts: view that antidepressants may lead to switch from depression into mixed states in bipolar depressed patients, and this may lead to suicidality.

Based on Teicher, M. (9/1991) Presentation at Psychopharmacological Drugs Advisory Committee (PDAC) Meeting, Washington, D.C.)

Based Laughren, T. (2/4/04) Brief Regulatory History of Antidepressants and Suicidality and Update on Current Plans for Analysis of Pediatric Suicidality Data from Controlled Trials. Presentation at FDA Meeting, Washington, D.C.)

# Potential Theories Behind Increased Risk of Suicidality

- Sleep disturbances/insomnia: view that insomnia associated with certain antidepressants may lead to suicidal behavior in certain depressed patients.

Based on Teicher, M. (9/1991) Presentation at Psychopharmacological Drugs Advisory Committee (PDAC) Meeting, Washington, D.C.)

Based Laughren, T. (2/4/04) Brief Regulatory History of Antidepressants and Suicidality and Update on Current Plans for Analysis of Pediatric Suicidality Data from Controlled Trials. Presentation at FDA Meeting, Washington, D.C.)

# Potential Theories Behind Increased Risk of Suicidality

- Withdrawal symptoms due to rapid metabolism: view that children and adolescents may metabolize medications at a higher rate than adults. Therefore, pediatric patients may be experiencing withdrawal symptoms between antidepressant doses including agitation, behavior activation, and motor restlessness which may lead to suicidality.

# FDA GUIDELINES

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WE ARE NOT PHYSICIANS,  
SO WHAT CAN WE DO?

# Safety Monitoring Tips and Techniques for Clinicians

- We can provide our patients and families with list of symptoms that could indicate a potential increased risk of suicidal thoughts and/or behaviors while taking antidepressants (See Handout).
- It is true that medication prescription and ongoing monitoring is the responsibility of the treating physician. We can, however, provide an additional level of safety monitoring for our patient's benefit.

# Safety Monitoring Tips and Techniques for Clinicians

- In our therapy sessions, we can conduct a brief safety monitoring evaluation, with our patients and parents, assessing for symptoms associated with the emergence of suicidality when taking antidepressants. (See Handout)
- If any of these symptoms do emerge, we can inform the prescribing physician and parent/guardian immediately.

# Safety Monitoring Tips and Techniques for Clinicians

- This additional level of safety monitoring is especially beneficial during a patient's initial few months of antidepressant treatment, or at times of dose changes, either increases or decreases.

# Providing Psychoeducation Regarding FDA Warning

- We should encourage our patients and families to talk to their treating physicians about this increased risk of suicidality with antidepressants.
- We should advocate for our patients and parents. We want to ensure they have a clear understanding of the risks and benefits of antidepressant treatment. They can then make educated and informed decisions about treatment options.

# Providing Psychoeducation Regarding FDA Warning

- We can refer patients and families to the FDA Website where the Public Health Advisory is posted along with other information.

[www.fda.gov](http://www.fda.gov) (Link to FDA Web-Page)

[www.fda.gov/bbs/topics/news/2004/NEW01124.html](http://www.fda.gov/bbs/topics/news/2004/NEW01124.html) (Actual Antidepressant Black Box Warning Public Health Advisory Link)

# In Summary

- There appears to be a slight but significant increased risk of suicidality in children and adolescents taking antidepressants.
- Non-medical mental health professionals have an important role to play in the safety, monitoring, and education of patients and families regarding the risks and benefits of psychotropic medications, particularly, antidepressants.

We acknowledge with gratitude the Pennsylvania Legislature for its support of the STAR-Center and our outreach efforts.

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