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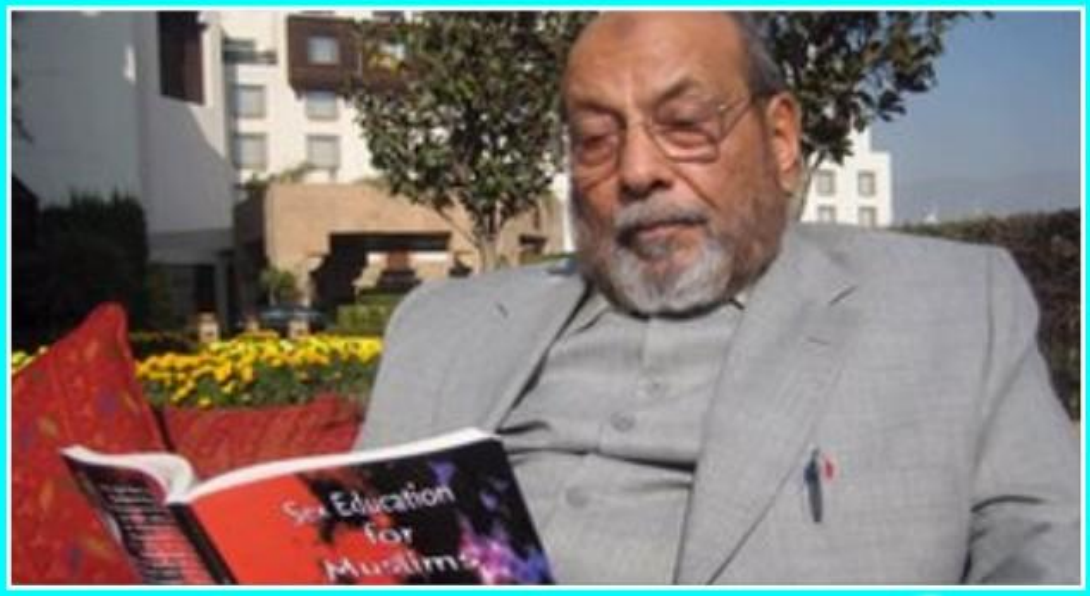

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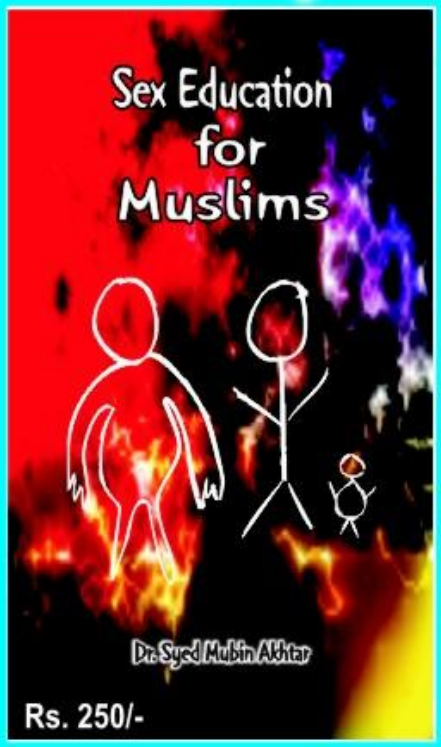

کتابیں حاصل کریں

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بی۔۱۴/۱، ناظم آباد۔۳ کراچی
فون: ۱۱۱۔۷۶۰۔۷۶۰
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کراچی نفسیات ہسپتال
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روڈ، کراچی
فون: ۳۲۷۲۰۴۱۴
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کراچی
فون: ۳۵۰۱۳۵۳۳
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حیدر آباد شاخ
بی۔۸۱، بلاک ای
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فون: ۱۱۱۔۷۶۰۔۷۶۰
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mission
to improve the quality of life for those suffering from psychiatric & neurological disorders.
Vepridone
Risperidone
1, 2, 3, 4mg/5ml Oral Sol.
brings back the rhythm of life
Xopixol
Zuclopenthixol acetate
50mg Inj. Ampoules
Zuclopenthixol decanoate
200mg Inj. LA
Xepex
Ziprasidone
40mg/60mg Caps.
explore the possibilities
Schizophrenia
Saveril
Clozapine
25mg*/100mg Tabs.
the saviour
Gencate
Fluphenazine decanoate
25mg/ml Inj.
lowers the risk of relapse
Olepra
Olanzapine 5mg/10mg Tabs.
putting it all together again
Gendol
Haloperidol 5mg Inj.
Seredol Depot
Haloperidol decanoate
50mg*/100mg Inj.
Paromax
Paroxetine 20mg Tabs.
the single reason for depression & anxiety
Lexapram
Escitalopram 20mg Tabs.
...undoing depression
Stresam
Estazolam 5mg Caps.
Stop worrying - Start living
Prolexa
Escitalopram 10mg Tabs.
newest SSRI for depression & anxiety
Depression & Anxiety
Limigzol
Zolmitriptan 2.5mg Tabs.
relief in the agony of Migraine attack
Epilepsy & Migraine
Topagen
Topiramate 25mg/50mg Tabs.
unraveling the world of epilepsy
Devenda
Levetiracetam
250mg/500mg Tabs.
in the stigma of epilepsy
specialization is our strength
Our focus makes us more powerful in the market place & efficient in marketing approach.
Insomnia
Siesta
Zolpidem 10mg Tabs.
good night...good morning
Genetics Pharmaceuticals
Lahore, Pakistan
A divis on of Genetics Pharmaceuticals, UK
healthinmind


Riperidon 1mg 2mg
(Risperidone)
OLEANZ 5mg 10mg
(Olanzapine)
AIMPRAM 10mg
Escitalopram
ZYDEX 25mg 100mg
(Clozapine)
Venlor 37.5 75mg
(Venlafaxine)
ESONOM 20mg 40mg
(Esomeprazole)
Gabril 100mg 300mg 400mg
(Gabapentin)
for Receptors
for Revolution
Receptors Pharmaceuticals
A-685, Ground Floor, Behind Rub Medical Centre, Block-2, Gulshan-e-Iqbal, Karachi
Ph: 021-32056881, 021-34962837

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Says US violated international laws

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MONOGRAPH ON ANTENATAL AND POSTNATAL MENTAL HEALTH

(Adapted from the guidelines of the National Institute for Health and Clinical Excellence)

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Introduction

This guideline makes recommendations for the prediction, detection and treatment of mental disorders in women during pregnancy and the postnatal period (up to 1 year after delivery). It includes advice on the care of women with an existing mental disorder who are planning a pregnancy, and on the organisation of mental health services.

Mental disorders during pregnancy and the postnatal period can have serious consequences for the health and wellbeing of a mother and her baby, as well as for her partner and other family members. The guideline covers the care of women with anxiety disorders, and depression. It also covers the treatment of postnatal psychotic disorders (often referred to as puerperal psychosis), which predominantly comprise bipolar disorder and schizophrenia. Healthcare professionals should refer to the sections on bipolar disorder and schizophrenia for advice on treating any psychotic disorder. The term 'postnatal depression' is not used in this guideline because it is often used inappropriately as a general term for any perinatal mental disorder.

The guideline provides advice on the teratogenic risk of psychotropic medications and on the risks of their use during breastfeeding. **The focus is on balancing the risks for each woman and her child against those of leaving the mental disorder untreated or inadequately treated.**

The guideline draws on the best available evidence. However, there are significant limitations to the evidence base, including limited data on the risks of psychotropic medication during pregnancy and breastfeeding, particularly with more recently introduced drugs. **No psychotropic drug has marketing authorisation specifically for pregnant or breastfeeding women.**

The guideline should be read in conjunction

with existing NICE guidance on the treatment and management of mental disorders. This also includes advice on the most appropriate organisation of services for the delivery of effective treatment, within a stepped-care framework.

Patient-centred care

Treatment and care should take into account the woman's individual needs and preferences. Women with mental disorders during pregnancy or the postnatal period should have the opportunity to make informed decisions about their care and treatment in partnership with their healthcare professionals, unless they do not have the capacity to make decisions.

Good communication between healthcare professionals and women, and their partners, families and carers, is essential. It should be supported by evidence-based written information tailored to the woman's needs. The treatment and care, and information women are given about it, should be culturally appropriate. It should also be accessible to people with additional needs such as physical, sensory or learning disabilities, and to people who do not speak or read English.

Carers and relatives should have the opportunity to be involved in decisions about the woman's care and treatment, unless the woman specifically excludes them.

Carers and relatives should also be given the information and support they need.

Key priorities for implementation

Prediction and detection

- At a woman's first contact with services in both the antenatal and the postnatal periods, healthcare professionals (including midwives, obstetricians, health visitors and GPs) should ask questions about:
  - past or present severe mental illness including schizophrenia, bipolar disorder, psychosis in the postnatal period and severe depression
  - previous treatment by a psychiatrist/specialist mental health team including inpatient care
  - a family history of perinatal mental illness.

Other specific predictors, such as poor relationships with her partner, should not be used for the routine prediction of the development of a mental disorder.

- At a woman's first contact with primary care, at her booking visit and postnatally (usually at 4 to 6 weeks and 3 to 4 months), healthcare professionals (including midwives, obstetricians, health visitors and GPs) should ask two questions to identify possible depression.
  - During the past month, have you often been bothered by feeling down, depressed or hopeless?
  - During the past month, have you often been bothered by having little interest or pleasure in doing things?

  A third question should be considered if the woman answers 'yes' to either of the initial questions.
  - Is this something you feel you need or want help with?

Psychological treatments

- Women requiring psychological treatment should be seen for treatment normally within 1 month of initial assessment, and no longer than 3 months afterwards. This is because of

the lower threshold for access to psychological therapies during pregnancy and the postnatal period arising from the changing risk-benefit ratio for psychotropic medication at this time.

Explaining risks

- Before treatment decisions are made, healthcare professionals should discuss with the woman the absolute and relative risks associated with treating and not treating the mental disorder during pregnancy and the postnatal period. They should:
  - acknowledge the uncertainty surrounding the risks
  - explain the background risk of fetal malformations for pregnant women without a mental disorder
  - describe risks using natural frequencies rather than percentages (for example, 1 in 10 rather than 10%) and common denominators (for example, 1 in 100 and 25 in 100, rather than 1 in 100 and 1 in 4)
  - if possible use decision aids in a variety of verbal and visual formats that focus on an individualised view of the risks
  - provide written material to explain the risks (preferably individualised) and, if possible, audio-taped records of the consultation.

Management of depression

- When choosing an antidepressant for pregnant or breastfeeding women, prescribers should, while bearing in mind that the safety of these drugs is not well understood, take into account that:
  - tricyclic antidepressants, such as amitriptyline,imipramine and nortriptyline, have lower known risks during pregnancy than other antidepressants
  - most tricyclic antidepressants have a higher fatal toxicity index than selective serotonin reuptake inhibitors (SSRIs)
  - fluoxetine is the SSRI with the lowest known risk during pregnancy
  - imipramine, nortriptyline and sertraline are present in breast milk at relatively low levels
  - citalopram and fluoxetine are present in breast milk at relatively high levels
  - SSRIs taken after 20 weeks' gestation may be associated with an increased risk of persistent pulmonary hypertension in the neonate
  - paroxetine taken in the first trimester may be associated with fetal heart defects
  - venlafaxine may be associated with increased risk of high blood pressure at high doses, higher toxicity in overdose than SSRIs and some tricyclic antidepressants, and increased difficulty in withdrawal
  - all antidepressants carry the risk of withdrawal or toxicity in neonates; in most cases the effects are mild and self-limiting.
- For a woman who develops mild or moderate depression during pregnancy or the postnatal period, the following should be considered:
  - self-help strategies (guided self-help, computerised cognitive behavioural therapy or exercise)
  - non-directive counselling delivered at home (listening visits)
  - brief cognitive behavioural therapy or interpersonal psychotherapy.

Organisation of care

- Clinical networks should be established

for perinatal mental health services, managed by a coordinating board of healthcare professionals, commissioners, managers, and service users and carers. These networks should provide:

- a specialist multidisciplinary perinatal service in each locality, which provides direct services, consultation and advice to maternity services, other mental health services and community services; in areas of high morbidity these services may be provided by separate specialist perinatal teams
- access to specialist expert advice on the risks and benefits of psychotropic medication during pregnancy and breastfeeding
- clear referral and management protocols for services across all levels of the existing stepped-care frameworks for mental disorders, to ensure effective transfer of information and continuity of care
- pathways of care for service users, with defined roles and competencies for all professional groups involved.

(I) Principles of care for all women with mental disorders during pregnancy and the postnatal period

(A)

(1) Providing and using information effectively

Providing information about the nature, course and treatment of a mental disorder during pregnancy and the postnatal period facilitates access to services, and improves understanding and collaboration between the woman, her partner, family members, carers and healthcare professionals.

Women with an existing mental disorder who are pregnant or planning a pregnancy, and women who develop a mental disorder during pregnancy or the postnatal period, should be given culturally sensitive information at each stage of assessment, diagnosis, course and treatment about the impact of the disorder and its treatment on their health and the health of their fetus or child. This information should cover the proper use and likely side effects of medication.

(2) Healthcare professionals should work to develop a trusting relationship with the woman, and where appropriate and acceptable to the woman, her partner and family members and carers. In particular, they should:

- explore the woman's ideas, concerns and expectations and regularly check her understanding of the issues
- discuss the level of involvement of the woman's partner, family members and carers, and their role in supporting the woman
- be sensitive to the issues of stigma and shame in relation to mental illness.

(3) Healthcare professionals should ensure that adequate systems are in place to ensure continuity of care and effective transfer of information, to reduce the need for multiple assessments.

(4) Healthcare professionals should discuss contraception and the risks of pregnancy (including relapse, risk to the fetus and risks associated with stopping or changing medication) with all women of child-bearing potential who have an existing mental disorder and/or who are taking psychotropic medication. Such women should be

encouraged to discuss pregnancy plans with their doctor.

(B)

Supporting partners, families and carers

(1)Healthcare professionals should assess and, where appropriate address, the needs of the partner, family members and carers of a woman with a mental disorder during pregnancy and the postnatal period, including:

- the welfare of her infant, and other dependent children and adults
- the impact of any mental disorder on relationships with her partner, family members and carers.

(2) Considerations for adolescents

Healthcare professionals working with adolescents experiencing a mental disorder during pregnancy or the postnatal period should:

- be familiar with local and national guidelines on confidentiality and the rights of the child
- obtain appropriate consent, bearing in mind the adolescent's understanding, parental consent and responsibilities, child protection issues, and the use of the Mental Health Act and of the Children Act (1989).

(II) Prediction, detection and initial management of mental disorders

(A)

(1) Prediction and detection

Routine contact with healthcare professionals (including midwives, obstetricians, health visitors and GPs) during pregnancy and the postnatal period provides an opportunity to identify women who have, or are at risk of developing, a mental disorder. Healthcare professionals should be aware of the impact a woman's mental state can have on obstetric and maternity outcomes, the development of the fetus or child, and her partner and family. Simple and validated detection tools for mental disorders suitable for use in primary care exist only for depression, but healthcare professionals should also be alert to symptoms of other mental disorders. In all communications (including initial referral) with maternity services, healthcare professionals should include information on any relevant history of mental disorder.

(2) At a woman's first contact with services in both the antenatal and the postnatal periods, healthcare professionals (including midwives, obstetricians, health visitors and GPs) should ask about:

- past or present severe mental illness including schizophrenia, bipolar disorder, psychosis in the postnatal period and severe depression
- previous treatment by a psychiatrist/specialist mental health team including inpatient care
- a family history of perinatal mental illness.

  Other specific predictors, such as poor relationships with her partner, should not be used for the routine prediction of the development of a mental disorder.

(3) At a woman's first contact with primary care, at her booking visit and postnatally (usually at 4 to 6 weeks and 3 to 4 months), healthcare professionals (including midwives, obstetricians, health visitors and GPs) should ask two questions to identify possible depression.

- During the past month, have you often been bothered by feeling down, depressed or hopeless?
- During the past month, have you often

been bothered by having little interest or pleasure in doing things?

A third question should be considered if the woman answers 'yes' to either of the initial questions.

- Is this something you feel you need or want help with?

(4) Healthcare professionals may consider the use of self-report measures such as the Edinburgh Postnatal Depression Scale (EPDS), Hospital Anxiety and Depression Scale (HADS) or Patient Health Questionnaire-9 (PHQ-9) as part of a subsequent assessment or for the routine monitoring of outcomes.

(B)

Referral and initial care

(1) After identifying a possible mental disorder in a woman during pregnancy or the postnatal period, further assessment should be considered, in consultation with colleagues if necessary.

- If the healthcare professional or the woman has significant concerns, the woman should normally be referred for further assessment to her GP.
- If the woman has, or is suspected to have, a severe mental illness (for example, bipolar disorder or schizophrenia), she should be referred to a specialist mental health service, including, if appropriate, a specialist perinatal mental health service. This should be discussed with the woman and preferably with her GP.
- The woman's GP should be informed in all cases in which a possible current mental disorder or a history of significant mental disorder is detected, even if no further assessment or referral is made.

(2) If a woman has a current mental disorder or a history of severe mental illness, she should be asked about her mental health at all subsequent contacts.

(3) A written care plan covering pregnancy, delivery and the postnatal period should be developed for pregnant women with a current or past history of severe mental illness, usually in the first trimester. It should:

- be developed in collaboration with the woman and her partner, family and carers, and relevant healthcare professionals
- include increased contact with specialist mental health services (including, if appropriate, specialist perinatal mental health services)
- be recorded in all versions of the woman's notes (her own records and maternity, primary care and mental health notes) and communicated to the woman and all relevant healthcare professionals.

(4) **Women who need inpatient care for a mental disorder within 12 months of childbirth should normally be admitted to a specialist mother and baby unit, unless there are specific reasons for not doing so.**

(5) Managers and senior healthcare professionals responsible for perinatal mental health services (including those working in maternity and primary care services) should ensure that:

- there are clearly specified care pathways so that all primary and secondary healthcare professionals involved in the care of women during pregnancy and the postnatal period know how to access assessment and treatment
- staff have supervision and training,

covering mental disorders, assessment methods and referral routes, to allow them to follow the care pathways.

(III) Prevention of mental disorders

There is evidence to support the use of targeted psychosocial interventions for women who have symptoms of depression and/or anxiety that do not meet the threshold for a formal diagnosis.

(1) For pregnant women who have symptoms of depression and/or anxiety that do not meet diagnostic criteria but significantly interfere with personal and social functioning, healthcare professionals should consider:

- for women who have had a previous episode of depression or anxiety, offering individual brief psychological treatment (four to six sessions), such as interpersonal psychotherapy (IPT) or cognitive behavioural therapy (CBT)
- for women who have not had a previous episode of depression or anxiety, offering social support during pregnancy and the postnatal period; such support may consist of regular informal individual or group-based support.

(2) Psychosocial interventions (for example, group psychoeducation) designed specifically to reduce the likelihood of developing a mental disorder during pregnancy or the postnatal period should not be part of routine antenatal and postnatal care.

(3) Single-session formal debriefing focused on the birth should not be routinely offered to women who have experienced a traumatic birth. However, maternity staff and other healthcare professionals should support women who wish to talk about their experience, encourage them to make use of natural support systems available from family and friends, and take into account the effect of the birth on the partner.

(4) **Mothers whose infants are stillborn or die soon after birth should not be routinely encouraged to see and hold the dead infant.** These women should be offered an appropriate follow-up appointment in primary or secondary care.

(IV) Care of women with a mental disorder during pregnancy and the postnatal period

The care of women with a mental disorder during pregnancy and the postnatal period should be the same as for anyone with a mental disorder. However, treatment decisions are complicated by the presence of the developing fetus, breastfeeding and the timescales imposed by pregnancy and birth.

(A)

(1)Treating pregnant and breastfeeding women: balancing risks and benefits

To minimise the risk of harm to the fetus or child, drugs should be prescribed cautiously for women who are planning a pregnancy, pregnant or breastfeeding.

As a result the thresholds for non-drug treatments, particularly psychological treatments, are likely to be lower, and prompt and timely access to treatments should be ensured if they are to be of benefit.

Women requiring psychological treatment should be seen for treatment normally within 1 month of initial assessment, and no longer than 3 months afterwards. This is because of the lower threshold for access

to psychological therapies during pregnancy and the postnatal period arising from the changing risk-benefit ratio for psychotropic medication at this time.

(2) Discussions about treatment options with a woman with a mental disorder who is planning a pregnancy, pregnant or breastfeeding should cover:

- the risk of relapse or deterioration in symptoms and the woman's ability to cope with untreated or subthreshold symptoms
- severity of previous episodes, response to treatment and the woman's preference
- the possibility that stopping a drug with known teratogenic risk after pregnancy is confirmed may not remove the risk of malformations
- the risks from stopping medication abruptly
- the need for prompt treatment because of the potential impact of an untreated mental disorder on the fetus or infant
- the increased risk of harm associated with drug treatments during pregnancy and the postnatal period, including the risk in overdose
- treatment options that would enable the woman to breastfeed if she wishes, rather than recommending she does not breastfeed.

(3) When prescribing a drug for a woman with a mental disorder who is planning a pregnancy, pregnant or breastfeeding, prescribers should:

- choose drugs with lower risk profiles for the mother and the fetus or infant
- start at the lowest effective dose, and slowly increase it; this is particularly important where the risks may be dose related
- use monotherapy in preference to combination treatment
- consider additional precautions for preterm, low birth weight or sick infants.

(4) When stopping a drug in a woman with a mental disorder who is planning a pregnancy, pregnant or breastfeeding, take into account:

- guidance on the specific disorder
- the risk to the fetus or infant during the withdrawal period
- the risk from not treating the disorder.

(B)

Discussing and explaining the risk of treatments

When considering treatment choices for mental disorders during pregnancy and breastfeeding, or when a pregnancy is planned, it is important to place risks from drug treatment in the context of the individual woman's illness. **It should also be noted that the background risk of fetal malformations in the general population is between 2% and 4%.**

(1) Before treatment decisions are made, healthcare professionals should discuss with the woman the absolute and relative risks associated with treating and not treating the mental disorder during pregnancy and the postnatal period. They should:

- acknowledge the uncertainty surrounding the risks
- explain the background risk of fetal malformations for pregnant women without a mental disorder
- describe risks using natural frequencies rather than percentages (for example, 1 in 10 rather than 10%) and common denominators (for example, 1 in 100 and 25 in 100,rather than 1 in 100 and 1 in 4)

- if possible use decision aids in a variety of verbal and visual formats that focus on an individualised view of the risks
- provide written material to explain the risks (preferably individualised) and, if possible, audio-taped records of the consultation.

(C)

Specific considerations for the use of psychotropic drugs during pregnancy and the postnatal period

Care is needed when prescribing to all women of childbearing potential. Women should understand the risks associated with becoming pregnant while taking psychotropic drugs, and the risks from an untreated mental disorder and from stopping medication abruptly without discussion with their doctor. **The risk of malformations is increased by some psychotropic drugs, but is often difficult to quantify because of limited data.**

Some of the recommendations in this section are from the NICE clinical guideline on the treatment and management of bipolar disorder, with modifications to reflect the wider range of indications covered by this guideline.

(1) Antidepressants

The risks of taking tricyclic antidepressants during pregnancy and when breastfeeding are better established than those of newer drugs, although the issues of tolerability and risk in overdose remain. Most antidepressants appear in some concentration in breast milk although the effects on the infant are not well understood.

☆ **If a woman taking paroxetine is planning a pregnancy or has an unplanned pregnancy, she should be advised to stop taking the drug.**

☆ When choosing an antidepressant for pregnant or breastfeeding women, prescribers should, while bearing in mind that the safety of these drugs is not well understood, take into account that:

- **tricyclic antidepressants, such as amitriptyline, imipramine and nortriptyline, have lower known risks during pregnancy than other antidepressants**
- most tricyclic antidepressants have a higher fatal toxicity index than selective serotonin reuptake inhibitors (SSRIs)
- **fluoxetine is the SSRI with the lowest known risk during pregnancy**
- imipramine, nortriptyline and sertraline are present in breast milk at relatively low levels
- citalopram and fluoxetine are present in breast milk at relatively high levels
- SSRIs taken after 20 weeks' gestation may be associated with an increased risk of persistent pulmonary hypertension in the neonate
- paroxetine taken in the first trimester may be associated with fetal heart defects
- venlafaxine may be associated with increased risk of high blood pressure at high doses, higher toxicity in overdose than SSRIs and some tricyclic antidepressants, and increased difficulty in withdrawal
- all antidepressants carry the risk of withdrawal or toxicity in neonates; in most cases the effects are mild and self-limiting.

(2) Benzodiazepines

Benzodiazepines should not be routinely

prescribed for pregnant women, except for the short-term treatment of extreme anxiety and agitation. This is because of the risks to the fetus (for example, cleft palate) and the neonate (for example, floppy baby syndrome). Consider gradually stopping benzodiazepines in women who are pregnant.

(3) Antipsychotics

- ☆ women taking antipsychotics who are planning a pregnancy should be told that the raised prolactin levels associated with some antipsychotics (notably amisulpride, risperidone and sulpiride) reduce the chances of conception. If prolactin levels are raised, an alternative drug should be considered.
- ☆ If a pregnant woman is taking clozapine, switching to another drug and careful monitoring should be considered. Clozapine should not be routinely prescribed for women who are pregnant (because there is a theoretical risk of agranulocytosis in the fetus) or for women who are breastfeeding (because it reaches high levels in breast milk and there is a risk of agranulocytosis in the infant).
- ☆ When deciding whether to prescribe olanzapine to a woman who is pregnant, risk factors for gestational diabetes and weight gain, including family history, existing weight and ethnicity, should be taken into account.
- ☆ **Depot antipsychotics should not be routinely prescribed to pregnant women because there is relatively little information on their safety,** and their infants may show extrapyramidal symptoms several months after administration of the depot. These are usually self-limiting.
- ☆ **Anticholinergic drugs should not be prescribed for the extrapyramidal side effects of antipsychotic drugs except for acute short-term use. Instead, the dose and timing of the antipsychotic drug should be adjusted, or the drug changed.**

(4) Valproate

Valproate increases the risk of neural tube defects (mainly spina bifida and anencephaly) from around 6 in 10,000 pregnancies in the general population to around 100 to 200 in 10,000. It also has effects on the child's intellectual development. Many pregnancies are unintended and/or not confirmed until after the 28th day (when the neural tube closes) so care is needed when prescribing the drug.

- ☆ Valproate should not be routinely prescribed to women of child bearing potential. If there is no effective alternative, the risks of taking valproate during pregnancy, and the importance of using adequate contraception, should be explained.
- ☆ Valproate should not be prescribed to women younger than 18 years because of the risk of polycystic ovary syndrome.
- ☆ **If a woman who is taking valproate is planning a pregnancy, or is pregnant, she should be advised to stop taking the drug. Where appropriate in the treatment of bipolar disorder, an alternative drug (usually an antipsychotic) should be considered.**
- ☆ If there is no alternative to valproate, doses should be limited to a maximum of 1 gram per day, administered in divided doses and in the slow release form, with

5 mg/day folic acid. However, it is not clear how the serum level of valproate affects the risk of abnormalities.

(5) Lithium

Lithium increases the rate of fetal heart defects to around 60 in 1000, compared with the risk of 8 in 1000 in the general population. It is estimated that lithium increases the risk of Ebstein's anomaly (a major cardiac malformation) from 1 in 20,000 to 10 in 20,000.

☆ Lithium should not be routinely prescribed for women, particularly in the first trimester of pregnancy (because of the risk of cardiac malformations in the fetus) or during breastfeeding (because of the high levels in breast milk).

☆ If a woman taking lithium is planning a pregnancy, and is well and not at high risk of relapse, she should be advised to stop taking the drug because of the risk of cardiac malformations in the fetus.

☆ If a woman who is taking lithium becomes pregnant:

- **o if the pregnancy is confirmed in the first trimester, and the woman is well and not at high risk of relapse, lithium should be stopped gradually over 4 weeks; it should be explained that this may not remove the risk of cardiac defects in the fetus**
- o if the woman is not well or is at high risk of relapse, the following should be considered:
  - _ switching gradually to an antipsychotic, or
  - _ stopping lithium and restarting it in the second trimester if the woman is not planning to breastfeed and her symptoms have responded better to lithium than to other drugs in the past, or
  - _ continuing with lithium if she is at high risk of relapse.

☆ **If a woman continues taking lithium during pregnancy, serum lithium levels should be checked every 4 weeks, then weekly from the 36th week, and less than 24 hours after childbirth; the dose should be adjusted to keep serum levels towards the lower end of the therapeutic range, and the woman should maintain adequate fluid intake.**

☆ **Women taking lithium should deliver in hospital, and be monitored during labour by the obstetric team. Monitoring should include fluid balance, because of the risk of dehydration and lithium toxicity (in prolonged labour, it may be appropriate to check serum lithium levels).**

(6) Carbamazepine and lamotrigine

Carbamazepine is estimated to increase the risk of neural tube defects from 6 in 10,000 to around 20 to 50 in 10,000, and carries a risk of other major fetal malformations including gastrointestinal tract problems and cardiac abnormalities. Lamotrigine carries the risk of oral cleft (estimated at nearly 9 in 1000 exposed fetuses).

☆ If a woman who is taking carbamazepine or lamotrigine is planning a pregnancy or has an unplanned pregnancy, healthcare professionals should advise her to stop taking these drugs because of the risk of neural tube defects and other malformations in the fetus. If appropriate an alternative drug (such as an

antipsychotic) should be considered.

☆ Carbamazepine or lamotrigine should not be routinely prescribed for women who are pregnant because of the lack of evidence of efficacy and the risk of neural tube defects in the fetus.

☆ Lamotrigine should not be routinely prescribed for women who are breastfeeding because of the risk of dermatological problems in the infant, such as Stevens-Johnson syndrome.

Special considerations arising from the use of psychotropic drugs during early pregnancy or while breastfeeding

☆ If a pregnant woman was taking drugs with known teratogenic risk (lithium, valproate, carbamazepine, lamotrigine and paroxetine) at the time of conception and/or in the first trimester, healthcare professionals should:

- confirm the pregnancy as quickly as possible
- offer appropriate screening and counselling about the continuation of the pregnancy, the need for additional monitoring and the risks to the fetus if the woman continues to take medication
- undertake a full paediatric assessment of the newborn infant
- monitor the infant in the first few weeks after delivery for adverse drug effects, drug toxicity or withdrawal (for example, floppy baby syndrome, irritability, constant crying, shivering, tremor, restlessness, increased tone, feeding and sleeping difficulties and, rarely, seizures); if the mother was prescribed antidepressants in the last trimester, these may result from serotonergic toxicity syndrome rather than withdrawal.

☆ **Infants of mothers who are breastfeeding while taking psychotropic medication should be monitored for adverse reactions.**

Sleep problems

Pregnant women with a mental disorder who have sleep problems should initially be given general advice about sleep hygiene (including bedtime routines, the avoidance of caffeine, and the reduction of activity before sleep). For women with serious and chronic problems, low-dose chlorpromazine or low-dose amitriptyline may be considered.

Electroconvulsive therapy (ECT)

There has been little research on the use of ECT during pregnancy but there is no evidence that it carries a higher risk than at other times, and no evidence of the effects of the treatment on the fetus or neonate.

☆ A course of ECT should be considered for pregnant women with severe depression, severe mixed affective states or mania in the context of bipolar disorder, or catatonia, whose physical health or that of the fetus is at serious risk.

Rapid tranquillisation

☆ A pregnant woman requiring rapid tranquillisation should be treated according to the clinical guidelines on the short-term management of disturbed/violent behaviour, schizophrenia and bipolar disorder, except that:

- she should not be secluded after rapid

tranquillisation
- restraint procedures should be adapted to avoid possible harm to the fetus
- when choosing an agent for rapid tranquillisation in a pregnant woman, an antipsychotic or a benzodiazepine with a short half-life should be considered; if an antipsychotic is used, it should be at the minimum effective dose because of neonatal extrapyramidal symptoms; if a benzodiazepine is used, the risks of floppy baby syndrome should be taken into account
- during the perinatal period, the woman's care should be managed in close collaboration with a paediatrician and an anaesthetist.

(V) Guidance for specific disorders

This section recommends how guidance on specific mental disorders may be adapted for women who are planning a pregnancy, pregnant or breastfeeding.

(1) Depression

The risks associated with antidepressant treatment during pregnancy and breastfeeding lower the threshold for psychological treatments. In addition, risks are better established in older drugs and a cautious approach would be to avoid newer drugs.

Women being treated for depression who are planning a pregnancy or have an unplanned pregnancy

☆ If a woman being treated for mild depression is taking an antidepressant, the medication should be withdrawn gradually and monitoring ('watchful waiting') considered. If intervention is then needed the following should be considered:
- self-help approaches (guided self-help, computerised CBT [C-CBT], exercise) or
- brief psychological treatments (including counselling, CBT and IPT).

☆ If a woman is taking an antidepressant and her latest presentation was a moderate depressive episode, the following options should be discussed with the woman, taking into account previous response to treatment, her preference, and risk:
- switching to psychological therapy (CBT or IPT)
- switching to an antidepressant with lower risk.

☆ If a woman is taking an antidepressant and her latest presentation was a severe depressive episode, the following options should be discussed with the woman, taking into account previous response to treatment, her preference, and risk:
- combining drug treatment with psychological treatment, but switching to an antidepressant with lower risk
- switching to psychological treatment (CBT or IPT).

☆ Pregnant or breastfeeding women who have a new episode of depression

For a woman who develops mild or moderate depression during pregnancy or the postnatal period, the following should be considered:
- self-help strategies (guided self-help, C-CBT or exercise)
- non-directive counselling delivered at home (listening visits)
- brief CBT or IPT.

☆ Antidepressant drugs should be

considered for women with mild depression during pregnancy or the postnatal period if they have a history of severe depression and they decline, or their symptoms do not respond to, psychological treatments.

☆ For a woman with a moderate depressive episode and a history of depression, or with a severe depressive episode during pregnancy or the postnatal period, the following should be considered:
- structured psychological treatment specifically for depression (CBT or IPT)
- antidepressant treatment if the woman has expressed a preference for it
- combination treatment if there is no response, or a limited response to psychological or drug treatment alone, provided the woman understands the risks associated with antidepressant medication.

Treatment-resistant depression

☆ **For pregnant women with treatment-resistant depression, a trial of a different single drug or ECT should be considered before combination drug treatment. Lithium augmentation should be avoided.**

(2) Generalised anxiety disorder (GAD)

Women with GAD who are planning a pregnancy or pregnant

☆ If a woman is planning a pregnancy or becomes pregnant while being treated with medication for GAD, the following should be considered:
- stopping medication and starting CBT if it has not already been tried
- if necessary, switching to a safer drug, if the decision is to maintain medication

☆ Women who have a new episode of GAD

A woman who has a new episode of GAD during pregnancy should be treated according to the guideline on anxiety, and CBT should be offered.

(3) Panic disorder

Women with panic disorder who are planning a pregnancy or pregnant

If a woman is planning a pregnancy or becomes pregnant while being treated for panic disorder, the following should be considered:
- stopping medication and starting CBT if it has not already been tried
- if necessary, switching to a safer drug, if the decision is to maintain medication.

☆ For women who have a new episode of panic disorder during pregnancy, psychological therapy (CBT), self-help or C-CBT should be considered before starting drug treatment.

☆ For women who have a new episode of panic disorder during pregnancy, paroxetine should not be started and a safer drug should be considered.

(4) Obsessive-compulsive disorder

Severe OCD in pregnant and postnatal women can be a serious problem for the mother, her baby and her family. Initial treatment should generally be with psychological treatments.

☆ A woman with OCD who is planning a pregnancy or pregnant should be treated according to the clinical guideline on

OCD except that:

- if she is taking medication alone, stopping the drug and starting psychological therapy should be considered
- if she is not taking medication, starting psychological therapy should be considered before drug treatment
- if she is taking paroxetine, it should be stopped and switching to a safer antidepressant considered.
- A pregnant woman with OCD who is planning to breastfeed should be treated according to the clinical guideline on OCD, except that the use of a combination of clomipramine and citalopram should be avoided if possible.

☆ A woman who has a new episode of OCD while breastfeeding should be treated according to the clinical guideline on OCD, except that the combination of clomipramine and citalopram should be avoided because of the high levels in breast milk.

(5) Post-traumatic stress disorder

There is no convincing evidence for drug treatments for PTSD in any patients, so psychological treatments are preferred.

☆ A woman with PTSD who is planning a pregnancy or pregnant should be treated according to the clinical guideline on PTSD, except that if she is taking an antidepressant the drug should be stopped and trauma-focused psychological therapy (for example, CBT or eye movement desensitisation and reprocessing therapy) offered.

☆ For a woman with PTSD who is planning a pregnancy or pregnant, adjunctive olanzapine should not be prescribed.

(6) Eating disorders

Although anorexia nervosa reduces a woman's fertility, women with this disorder can become pregnant. Women with bulimia nervosa are prone to unplanned pregnancy, in part because vomiting reduces the efficacy of oral contraceptives.

☆ A woman with anorexia nervosa who is planning a pregnancy, has an unplanned pregnancy or is breastfeeding should be treated according to the clinical guideline on ☆ A woman with binge eating disorder who is taking an antidepressant and is planning a pregnancy, has an unplanned pregnancy or is breastfeeding should be treated according to the section on depression in this guideline.

☆ If a woman who is taking medication for bulimia nervosa is planning a pregnancy or pregnant, healthcare professionals should consider gradually stopping the medication after discussion with her. If the problem persists, referral for specialist treatment should be considered.

☆ If a woman has an episode of bulimia nervosa while breastfeeding, psychological treatment should be offered, rather than fluoxetine at 60 mg. If a woman is already taking fluoxetine at 60 mg, she should be advised not to breastfeed.

(7) Bipolar disorder

Although the risk of relapse of treated and untreated bipolar disorder is the same during pregnancy as at other times, women who are pregnant are more likely to stop treatment and this is often unplanned and

abrupt. During the postnatal period the risk of relapse is much greater for women who are not receiving treatment than at other times, and may be higher than 50%.

Pregnant women with bipolar disorder who are stable on an antipsychotic

- ☆ **If a pregnant woman with bipolar disorder is stable on an antipsychotic and likely to relapse without medication, she should be maintained on the antipsychotic, and monitored for weight gain and diabetes.**
- ☆ **If a woman who needs antimanic medication plans to become pregnant, a low-dose typical or atypical antipsychotic should be the treatment of choice.**
- ☆ If a woman with bipolar disorder planning a pregnancy becomes depressed after stopping prophylactic medication, psychological therapy (CBT) should be offered in preference to an antidepressant because of the risk of switching to mania associated with antidepressants. If an antidepressant is used, it should usually be an SSRI (but not paroxetine) and the woman should be monitored closely.
- ☆ If a woman with bipolar disorder has an unplanned pregnancy and is stopping lithium as prophylactic medication, an antipsychotic should be offered.

(8) Acute mania

If a pregnant woman who is not taking medication develops acute mania, a typical or an atypical antipsychotic should be considered. The dose should be kept as low as possible and the woman monitored carefully.

- ☆ If a pregnant woman develops acute mania while taking prophylactic medication, prescribers should:
  - o check the dose of the prophylactic agent and adherence
  - o increase the dose if the woman is taking an antipsychotic, or consider changing to an antipsychotic if she is not
  - o **if there is no response to changes in dose or drug and the patient has severe mania, consider the use of ECT, lithium and, rarely, valproate**.
- ☆ If there is no alternative to valproate, augmenting it with antimanic medication (but not carbamazepine) should be considered.

(9) Depressive symptoms

For mild depressive symptoms in pregnant women with bipolar disorder the following should be considered, in this order:

- o self-help approaches such as guided self-help and C-CBT
- o brief psychological treatments (including counselling, CBT and IPT)

- ☆ For moderate to severe depressive symptoms in pregnant women with bipolar disorder the following should be considered:
  - o psychological treatment (CBT) for moderate depression
  - o combined medication and structured psychological treatments for severe depression.
- ☆ **If prescribing medication for moderate to severe depressive symptoms in a pregnant woman**

with bipolar disorder, quetiapine alone, or SSRIs (but not paroxetine) in combination with prophylactic medication should be preferred because SSRIs are less likely to be associated with switching to mania than the tricyclic antidepressants. Monitor closely for signs of switching and stop the SSRI if the woman starts to develop manic or hypomanic symptoms.

☆ After delivery, if a woman with bipolar disorder who is not on medication is at high risk of developing an acute episode, prescribers should consider establishing or reinstating medication as soon as the woman is medically stable (once the fluid balance is established).

☆ If a woman maintained on lithium is at high risk of a manic relapse in the immediate postnatal period, augmenting treatment with an antipsychotic should be considered.

☆ **Women with bipolar disorder who are taking psychotropic medication and wish to breastfeed should be offered a prophylactic agent that can be used when breastfeeding. The first choice should be an antipsychotic.**

(10) Schizophrenia

☆ Women with schizophrenia who are planning a pregnancy or pregnant should be treated according to the NICE clinical guideline on schizophrenia, except that if the woman is taking an atypical **antipsychotic consideration should be given to switching to a low-dose typical antipsychotic, such as haloperidol, chlorpromazine or trifluoperazine.**

☆ A woman with schizophrenia who is breastfeeding should be treated according to the clinical guideline on schizophrenia, except that women receiving depot medication should be advised that their infants may show extrapyramidal symptoms several months after administration of the depot. These are usually self-limiting.

MONOGRAPH ON ADHD MANAGING COMPLEXITIES OF CARE IN CHILDREN AND ADOLESCENTS WITH ADHD

COMPLIMENTARY CME/CE

Steven R. Pliszka & Colleagues

In February 2010, the University of Cincinnati and Med-IQ convened a round-table meeting to discuss barriers and solutions to screening, diagnosing, and treating children and adolescents with attention-deficit/hyperactivity disorder (ADHD). Roundtable faculty included representatives from pediatrics. Psychiatry, psychology, and school counseling with expertise in ADHD. These faculty exchanged ideas about current challenges in identifying and diagnosing ADHD. Guideline recommendations for selecting and monitoring therapies, the need for appropriately identifying and managing comorbidities, the need for sustained treatment and behavioral interventions for this chronic illness, and strategies for managing the challenges of ADHD in the school setting. This article offers an overview of that discussion and expands upon key topics with support from current medical literature.

Prevalence of ADHD

Dr. Pliszka: A large number of epidemiologic studies published over the last few decades has shown prevalence rates of ADHD ranging from 4% to 12%. If you combine the studies, you get an average of about 8%.

I think it is pretty clear that the. Adoption of the inattentive subtype in the DSA-1-IV-TR considerably expanded the net of ADHD. That change has been estimated to be associated with a 30% to 40% increase in prevalence in some surveys. Given that the impairment caused by the inattentive subtype is just as pronounced, its recognition is important.

Dr. Wolraich: While the prevalence rate is on the higher side than what's been previously thought, we still have a large number of children who have ADHD, but who are not being diagnosed and treated. And even of those being treated, a large number are probably not being optimally

treated. Children of the lowest socioeconomic status were most likely to meet ADHD criteria, but least likely to receive treatment. The 2003 National Survey of Children's Health (NSCH) revealed a parent-reported ADHD diagnosis rate of 7.8% in children between the ages of 4 and 17. Approximately 56% of children with ADHD reported taking medication for the disorder in the past year. Boys were 2.5 times more likely than girls to have received a diagnosis of ADHD.

ADHD Screening

Roundtable faculty discussed primary care guideline recommendations for screening. They also elaborated on ways that teachers and counselors can communicate effectively with parents about this oftentimes sensitive topic.

Dr. Pliszka: What is primary care physicians advised to do to adequately screen for ADHD? Is it built into well-child check-ups, or do you wait until parents bring it up?

Dr. Woiraich: Pediatricians are encouraged to broadly ask about mental health. I think this type of broad screening- rather than just focusing on ADHD - is helpful. Pediatricians should take steps to develop communication systems with schools so a protocol is in place where a designated point person from the school can send out standardized information to the physician to aid in diagnosis. Another screening-related practice that we've tried to encourage is to consider functional aspects of ADHD, rather than just looking at core symptoms. How-are children, doing academically? How do they get along with their peers? How are their relationships at home?

Dr. McCracken: I think there is a real opportunity to do a much better job of identifying ADHD at an earlier age. I am concerned that the diagnosis is often delayed. We know that symptoms of ADHD are usually readily apparent in preschoolers. Yet the diagnosis can be delayed for years.

Current AAP guidelines do not recommend screening specifically for ADHD in school-aged children who do not present with symptoms. Instead, they suggest that primary healthcare professionals ask caregivers about general issues such as:

- School performance
- Learning ability
- Child satisfaction with school
- Behavioral concerns (at home, school, or with friends)
- Ability to complete classwork/homework

If children present with symptoms indicative of ADHD, however, healthcare professionals should initiate an ADHD evaluation. The AACAP guidelines take a somewhat different stance, recommending that screening for ADHD be part of every patient's mental health assessment. Screening may be performed with rating scales or questionnaires based on the DSM core symptoms. Healthcare professionals may also screen for APHD by asking questions about symptoms related to inattention, impulsivity, and hyperactivity.

While the AAP and AACAP guidelines are geared toward primary care and mental health professionals, respectively, teachers

and school counselors play an important role in re-ferral for the evaluation of ADHD because symptoms often first noticeably manifest in the school setting.

Dr. Pliszka: What' is the best way for teachers and counselors to ask questions of parents as they are screening for ADHD?

Dr. Lang berg: Mental health issues, and A DHD in particular, can be difficult to address with parents because of the media attention the disorder receives. I often encourage teachers or counselors to begin the conversation by talking with parents about a child's functional problems or the specific behaviors where the child is having difficulty. For example, a teacher might note that a child is having trouble sitting still or is frequently losing materials or homework assignments. Parents likely already aware of these issues to some extent. Discussing specific behaviors first seem to open a less confrontational dialogue. Leading with comments about ADHD or an ADHD evaluation may cause the parent to become de-fensive and to be less receptive to the recommendations.

After discussing specific behaviors, counselors or teachers can then choose to discuss ADHD directly or to lake a more subtle approach. The direct approach is to note that, in their experience, these behaviors may be associated with a diagnosis of ADHD and then recommend an evaluation.

Dr. Webb: Speaking from the school counselor perspective, I believe it's important that school counselors and teachers share concise, easy-to-understand information (like educa-tional pamphlets) with parents regarding ADHD symptoms and the problems that can result when ADHD goes undiagnosed. The material doesn't need to be complicated, and it can help parents make decisions about whether they should consult a physician.

Teachers and school counselors can't diagnose ADHD. It's very important for them to understand that. That said, school counselors have been trained to know how ADHD manifests and literally see thousands of students over many years. This remits in a pretty good eye for students who might be exhibiting classic symptoms. That puts them in a good position to consult with parents.

Diagnosing ADHD

The DSM-IV-TR lists 18 core ADHD symptoms, divided into predominantly inattentive, predominantly hyperactive/impulsive, and combined subtypes (Table 1). A diagnosis of ADHD requires that the patient have at least 6 out of 9 inattentive symptoms and/or at least 6 of 9 hyperactive/impulsive symptoms that occur on most days. In addition, the symptoms must have persisted for at least 6 months, and the onset of at least some symptoms must have begun before the age of 7. The symptoms must also be mal-adaptive and inconsistent with developmental level.

Both the AAP and AACAP guidelines offer similar recommendations for ADHD evaluation and diagnosis. The AAP guidelines recommend that children 6 to 12 years old who present with inattention, hyperactivity, impulsivity, behavioral

problems, and academic under achievement should receive an evaluation for ADHD, based on DSM-IV-TR. Criteria. The healthcare professional should gather information from parents, school reports, the child, and mental health professionals. For diagnosis, the ADHD evaluation must establish whether core symptoms are present in more than one setting. Thus, evidence from a teacher or other school professional that documents core symptoms for ADHD is required, as well as information that may speak directly to treatment planning, such as observations of peer relationships, questions about specific learning weaknesses, and descriptions of strengths. The use of ADHD-specific rating scales or questionnaires completed by parents, teachers, or other- school professionals is a clinical option for evaluation. Global, nonspecific questionnaires that assess a variety of behavioral disorders are generally not helpful for diagnosing ADHD, but may be useful for assessing comorbidities. Similar]y, the AACAP guidelines state that evaluating a child or adolescent for ADHD should involve detailed interviews with the parent and child and should include information about the child's functioning at

TABLE 1. DSM-IV-TR Symptom Criteria for ADHD

SYMPTOMS TYPE	SYMPTOM (OFTEN PRESENT)
Inattentive	■ Fails to pay attention to details or makes careless mistakes at school or activities ■ Has difficulty paying attention at play or school ■ Does not seem to listen when spoken to ■ Does not follow through on instruction and fails to finish tasks (and notattributable to oppositional behavior or an inability to comprehend) ■ Has difficulty organizing tasks and activities ■ Avoids or dislikes tasks requiring sustained mental effort ■ Loses items ■ is easily distracted by stimuli ■ is forgetful
Hyperactive	■ Fidgets or squirms in seat ■ Has difficulty remaining seated ■ Runs around or climbs excessively ■ Has difficulty playing quietly ■ Acts as if "on the go" or "driven by a motor" ■ Talks excessively
Impulsive	■ Blurts out answers before questions are completed ■ Has difficulty waiting for a turn ■ Interrupts or intrudes on others

Adapted with permission from American psychiatric Association. Diagnostic and Statistical Manual of Mental disorder, 4th edition, Text Revision (DSM-IV-TR). Washington. DC

school and a review of the child's medical, social, and family histories.

Both sets of guidelines recommend screening for comorbidities such as anxiety and depression. In addition, neither organization recommends the routine use of other medical studies, such as neuroimaging studies, electroencephalograms, magnetic resonance imaging, or laboratory tests, to establish an ADHD diagnosis because they are likely to be of little help. Such tests should be ordered only if evidence from the patient history or physical examination suggests a possible separate neurologic disorder.

Dr. Pliszka: To be consistent with ADHD, the child should show impairment in at least two settings. Most children with ADHD have problems both in school and at home. Some chil-dren with ADHD show impairment at school but not at home. On the other hand, when the behaviors manifest at home, but not elsewhere, guidelines generally view them as inconsistent with ADHD, particularly when there is good academic and social functioning in school.

Dr. Wolraieh: I'd like to add that the AAP guidelines are being updated, and one of the changes that we anticipate is that the age for diagnosis will be expanded. The 2000 guide-lines limited diagnosis to children between 6 and 11 years of age because that's w'here the scientific evidence was. .Based on current evidence, the age range will likely be revised to age 4 through adolescence.

Dr. Webb: I'd also like to point out that we have to consider the children themselves when making this diagnosis. Sometimes children are quickly labeled ADHD by teachers when they are not really ADHD, but simply have not been taught foundational learning skills, such as listening and attending. Those skills can be taught to any child-we shouldn't assume that a child inherently possess them. As a counselor educator, I strongly encourage the systematic teaching of foundational learning skills so that we can identify students who have not developed these skills yet (but have the ability to do so) as opposed to students who have been taught these skills, but continue to have a difficult time practicing them.

ADHD or Learning Disorder?

Children with ADHD frequently earn poor grades, score poorly on standardized reading and math tests, and have increased grade retention. Academic impairment in ADHD, however, maybe due to the ADHD itself. Estimates of prevalence of learning disorders among children with ADHD range widely from 12% to 70%, most likely due to inconsistencies in the definition of learning disorders. Studies suggest that learning disorders occur most commonly in children with inattentive or combined ADHD subtypes.

Dr. Pliszka: What is the role of academic testing in the evaluation of ADHD? When should it be strongly considered as an adjunct to the evaluation of ADHD?

Dr. Langberg: Approximately one in three children with A DHD also meet criteria for a learning disorder. The assessment of school functioning is an important part of the ADHD evaluation process. In addition, some standardized rating scales, such as the Vanderbilt. It scale (http://www.vanderbiltchildrens. org/interior, php?m id-5734), include items that ask specifically about academic performance-reading, writing, and mathematics-that can he used to assess school functioning. Differentiating children with only ADHD from children with ADHD and a comorbid learning disability can be difficult because children with only ADHD almost always exhibit academic problems. A presentation where a child is significantly more impaired in a particular subject (e.g., has always struggled with reading more than any other academic task) is suggestive of a learning disorder, and a referral for further evaluation is warranted. Another factor that is important to consider is response to treatment. A child with only ADHD will likely see some academic improvements with pharmacotherapy, but a child with a learning disorder will usually continue to exhibit significant academic skill deficits (e.g. reading skills) even after ADHD symptoms have responded to medication. If, after initiating medication, a physician, sees that academic functioning is not responding to treatment or is not normalizing in a particular area (e.g., math or reading), the child should be referred for a psycho educational evaluation.

The child's school may complete the evaluation upon the parents' request; if they do not do so or if the process takes too long, a psychologist can also complete the evaluation.

Dr. McCracken: We need to more clearly convey the difference between ADHD and learning disorders using a rational approach, such as was just described by Dr. Lang berg. We en-counter a great deal of confusion in community settings about whether psychological or psychometric testing should be a standard part of an ADHD evaluation. Many practitioners consider it to be a first step in diagnosing ADHD, which I think is a disservice to the children and their families, and, of course, a huge cost that is unnecessary in many cases.

Treating and Managing ADHD

Although there has been concern among the general public and reports in the media related to over treating children with stimulants for ADHD, studies indicate that children meeting ADHD diagnostic criteria are more likely to be under treated. An analysis of community-based survey data of 1,285 children as part of the Methods for the Epidemiology of Child and Adolescent Mental Disorders (MECA) study revealed that only 12.5% of children meeting ADHD criteria had received stimulant medication during the previous 12 months. The National Survey of Children's Health (NSCH) revealed that only 56% of children whose parents reported a diagnosis of ADHD were receiving pharmacologic treatment at the time of the survey. Finally, a 2007 cross-sectional survey revealed that fewer than one-third of children who met DSM-TV-TR criteria for ADHD were

consistently receiving medication for the disorder.

Roundtable participants discussed the short- and long-term consequences of suboptimal ADHD management.

Dr. Pliszka: What is it like for a child whose ADHD is not well controlled in the school setting?

Dr. Webb: Untreated ADHD can be devastating for students. The school setting is usually the first place that many children are asked to pay attention, sit still, or complete a task within a specific time period. Students with undiagnosed or untreated ADHD fall behind right from the start when their symptoms manifest and they cannot practice these skills as other children do. By grade 2, they begin to sec themselves differently. They have trouble succeeding in school and are being continually reprimanded for their behavior. Over time, these students lose their motivation to succeed. Untreated ADHD can lead to other behavioral and adjustment problems because of repeated failure. While a child's attention span might improve over time, his impulsivity continues to create problems.

Dr. Pliszka: We know from long-term studies that children with ADHD often develop some serious social and behavioral problems as they get older.

Dr. McCracken: The majority of individuals with ADHD will eventually display at least one comorbid disorder, such as an additional psychiatric disorder or a substance use disorder. In addition,, we've been concerned for a long time about other sequelae that seem to occur along with ADHD, such as an increased risk of delinquent or antisocial behavior, self-injury, unstable relationships, teen pregnancy, or sexually transmitted diseases. Because ADHD can have such a broad impact, it is especially important to identify the condition early and intervene with the best treatments we can provide. These longer-term outcomes also compel us to work to keep children on treatment.

The ongoing manifestations of untreated ADHD may be far-reaching into adulthood. A study of 142 adolescents with ADHD diagnosed in childhood found that ADHD was associated with a more than 3-fold increase in illicit drug use during the teenage years when compared to teenagers without childhood ADHD ($P < 0.01$). In addition, the ADHD group was 3 times more likely to smoke cigarettes daily ($P < 0.01$) and twice as likely to have an alcohol-use disorder. Another study that followed up on young adults diagnosed with hyperactivity in childhood revealed that 32% of the hyperactive group had failed to graduate from high school compared with none of the control group ($P < 0,001$). More participants in the hyperactive group had been fired from a job (55% vs. 23%, $P < 0.001$), become involved in pregnancy (38% vs. 4%, $P < 0.001$), and contracted a sexually transmitted disease (17% vs. 4%, $P = 0.006$). In males, the hyperactive-impulsivity subtype of ADHD diagnosed in child-hood has been shown to be predictive of criminal activity and antisocial behavior in adulthood. Although

conduct disorders are also often present in subjects who engage in antisocial behavior, hyperactivity-impulsivity alone has been associated with an increase in arrests.

Dr. Lang berg: An issue that is confronting our field is inadequate long-term, sustained treatment. Many children receive excellent treatment for a short period of time, but if treatment is not sustained, these children continue to have significant functional impairments into adolescence and beyond. In the Multimodal Treatment Study of Children with ADHD (MTA), participants enrolled in the treatment groups made very large gains during 14 months of intensive treatment, hut, over time, a large portion of participants stopped taking medication and may not have continued to receive any behavioral treatments. When you look at these children in adolescence, they are still well behind their peers in important functional outcomes. **These findings highlight the fact that ADHD is a chronic disorder that requires ongoing, sustained treatment.**

The MTA was a randomized, controlled trial designed to compare the relative long-term benefits of well-established and widespread treatments for children with combined-type ADHD. A total of 597 children, aged 7 to 9.9 years, were randomly assigned to one of four treatments: carefully crafted medication, behavioral management, combined medication/behavioral management, or routine community care. At the end of the 14-month treatment- period, all groups showed substantial improvement in ADHD symptoms, but children in the intensive medical management or combined medical/behavioral treatment arms showed the greatest improvements. While adolescents in the study still maintained some improvement in symptoms over baseline, they suffered impairment in more than 90% of behavioral and academic variables when compared with age-matched, local populations of adolescents. The MTA group, for example, was more likely than the local control group to have more severe oppositional defiant disorder (ODD), arrests, and delinquency, as well as poorer academic performance.

Dr. McCracken: This brings up the whole issue of the natural history of ADHD and the extent to which it persists over time. Clearly same behaviors do improve in the majority of children who are diagnosed in childhood, but the core symptoms frequently persist into adolescence and young adulthood. Difficulties with concentration, judgment, and executive functions can wreak havoc with role functioning, academic achievement and success in the job world. It's difficult to predict from childhood who will have the best outcome, except for knowing that those with less severe symptoms and higher intelligence will fare better.

Dr. Wolraich: ADHD is really a chronic illness, and this is one thing we try to emphasize. This means approaching the management of ADHD using it chronic-care model: developing good partnerships, educating the family and the patient, monitoring the patient closely over time-essentially creating a medical home for that patient.

TABLE 2. Medications Used to Manage ADHD in Children and Adolescents

DRUG CLASS	FDA APPROVAL (INDICATION AGE IN YEAR)	DURATION OF ACTION (HOURS)	TYPICAL STARTING DOSE	COMMENT
ALPHA-2 AGONISTS				
Extended-release guanfacine (intuniv)	6-17	6-12	<45kg:0.5mg >45 kg:1mg	• Monitor for hypotensin, bradycardia, sedation
Clonidine (Catapres)	Not FDA approved for this indication	3-6	Not FDA approved for this indication	
SNRIs				
Atomxetine (Strattera)	> 6	24	<70kg:0.5mg/kg/day >70kg:40mg once daily	• Carries black-box warning for suicidal ideation in children and adolescents First-line treatment in children with history of substance dependence or abuse
STIMULANTS				
Amphetamine and dextroamphetamine preparations				• Generally considered to be first-line treatment
Short-acting: Adderall, Dexedrine, DesxtroStat	adderall, Dexedrine: >3 DestroStat: 6>	4-6	3-5 years: 2.5mg once daily:>6 years:5mg onvce or twice daily	• Monitor growth, blood pressure, heart rate. Consult with cardiologist if history of cardiovascular disease
Intermediate-acting: Dexedrine spansule	>6	6-10	5-10mg once or twice daily	• Lisdeamphetamine may be associated with diminished risk of medication abuse because of delayed onset of action
Extended-release: Adderall XR, Vyvanse (lisdexam-phetamin)	Adderall XR:>6 Vyvanse:6-12	10-12	adderall XR:10 mg once daily Vyvanse: 30mg daily	• Short-acting forms may be used in smaller children when doses of long-acting forms are too high • Long-acting form eliminates need for multiple daily dosing, but may be cost prohibitive
Methylphenidate				• Patch form duration of effect extends 2-3 hours after patch is removed
Short-acting: Ritalin, Methylin, Focalin	>6	3-5	Ritalin/Methylin:5mg twice daily Focalin:2.5mg twice daily	
Intermediate-acting: Ritalin SR,Metadate ER and CD, Methylin ER	>6	3-8	Ritalin SR. Metadate ER, Methylin ER: 10mg once daily Metadate CD:20mg once daily	
Long-acting: Concerta Daytrana (Patch)	Concerta: >6 Daytrana: 6-12	8-12	Concerta: 18mg once daily Day trana: 10mg transdermal film, worn up to 9 hours/day	
OTHER AGENTS				
Bupropion Wellbutrin	Not FDA approved for this indication	4-24, Depending on form	Not FDA approved for this indication	• Adjunctive treatment after first-line treatments fail
Tricyclic antidepressants Tofranil (Imiparmine),Parmelor (Nortriptyline), Norpamin (Desipramine)	Not FDA approved for this indication	24 (variable)	Not FDA approved for this indication	• Adjunctive treatment after first-line treatments fail • Obtain baseline electrocardiogram; monitor plasma levels for toxicity • Desipramine has been associated with sudden death in children

Data derived from American Academy of Pediatrics, Clinical practice guideline: Treatment of the school-aged child with attention-deficit/hyperactivity disorder. Pediatrics, 2001;108(4):1033-1044; Duration JM, Kratochvil CJ, Review of ADHD pharmacotherapies; advantages, disadvantages, and clinical pearls J Am Acad Child Adolesc Psychiatry, 2009;48(3):240-8, Pliszka S. Practice parameter of the assessment and treatment of children and adolescents with attention-deficit/hyperactivity disorder. J Am Acad Child Adolesc Psychiatry, 2007;46(7):894-921.

Approaches to Treatment

Combined medication and behavioral treatment is considered to be an ideal approach; however, patient access to psychosocial or behavioral treatment options is often limited. Both the AAF and AACAP guidelines recommend developing a comprehensive individualized treatment plan based on the nature of ADHD symptoms, target goals, and family circumstances. They also note that it is reasonable to use medication alone, behavioral interventions, or combined approaches as an initial strategy.

Parents are free to choose a behavioral approach as an initial strategy, but data generally show superior outcomes for medication when compared head-to-head with behavioral therapy. For example, in the MTA study, children in the medication and combined treatment groups showed greater improvement than children in the behavioral interventions alone group. In addition, 2.6% of children in the behavioral treatment group eventually initiated medication therapy during the trial. At a 24-month follow-up, children in the intensive medication group continued to experience benefit over those in the behavioral and community care groups. This benefit, however, was not observed in the 8-year follow-up of the MTA, though researchers noted that, at 14-months, the MTA became an uncontrolled naturalistic follow-up study.

Most patients who do not have significant comorbidity will have a satisfactory response to FDA-approved ADHD medications. If medication is chosen as an initial strategy, guidelines recommend the use of one of the FDA-approved medications as a first-line treatment of ADHD. **FDA-approved ADHD medications include the stimulants amphetamine, dextroamphetamine, and methylphenidate; the selective nor epinephrine reuptake inhibitor (SNRI) atomoxetine; and the alpha-2 agonist guanfacine (Table 2).**

Dr, McCracken: It's important to emphasize that the stimulants in all of the consensus guidelines continue to emerge as the first choice for treatment in almost all cases. One of the reasons for this is that we know so much about them-they have been available for decades. Within the stimulants, there are two main classes: the amphetamines and the methylphenidate class. They are relatively equal in overall effectiveness and have similar side effect profiles. It's important to note, though, that there, is a lot of individual variability in response with the medications.

Dr. Wolraich: Evidence suggests that medication is appropriate as a first-line treatment for children with ADHD. The only exception is for preschoolers-children ages 4 to 6. In that group, a behavioral program or a parent-training program should be considered first. Still, behavioral therapy is often not enough. The PATS study showed that about: 15% of preschoolers will improve well enough on parent training alone. They may subsequently need medication, but it can be delayed for a few years. Certainly, in older children, it's ap-propriate to consider medication.

One of the barriers to pharmacologic therapy is parents' negative perceptions

about it. If parents are not comfortable with medication, that strategy is not likely to be successful. For this reason, education about medications is an important component of treatment. **In particular, it's important to prepare parents for the fad that medication may not have an im-mediate effect and that there may be a trail-and-error period to find the best medication and dosage.**

Dr. McCracken: In addition to stimulants, two other classes of agents are also now FDA-approved for the treatment of ADHD: SNRIs and alpha-2 agonists. Atomoxetine is an SNRI that shares similarities with antidepressants in its molecular structure. It also shares some properties with stimulants in terms of blocking its uptake, thereby increasing available catecholamines. The newest approved agent is guanfacine, an alpha-2 agonist. It might have some unique indications in subgroups of ADHD, but is probably a step-3 or 4 treatments for most individuals. Lastly, same empirical evidence supports the use of other antidepressants such as bupropion, tricyclics and other agents.

Stimulants. Many studies from the 1980s and 90s have demonstrated that stimulants effectively reduce core ADHD symptoms in the short-term, and both the AACAP and AAP support the use of these medications in children and adolescents. These studies have also shown improvements in other functional areas such as self-esteem, cognition, and social relationships.

Within the amphetamine and methylphenidate classes, there are multiple choices with various delivery profiles and durations of effect (Table 2). Both long- and short-acting formulations are effective and have advantages in specific circumstances. Long-acting forms offer the convenience of once-daily dosing, which can eliminate the need for trips to the school nurse to take medication, thereby maintaining the student's confidentiality and reducing stigma. These forms have also been shown to improve medication adherence. Short-acting forms can be beneficial for smaller children (< 16 kg) who require a lower dose of medication. Most patients will respond satisfactorily to stimulants, although longer-term outcomes are not as favorable. Some patients, however, cannot tolerate them or are non-responsive.

SNRIs. Atomoxetine (Attentra) is an SNRI that was FDA-approved in 2002 for the treatment of ADHD in children ages 6 and older, teens, and adults. In a randomized, controlled trial of 297 children and adolescents ages 8 to l8, most of whom had moderate-to-severe ADHD at baseline, atomoxetine was found to be superior to placebo in improving ADHD symptoms. Social and family functioning was also significantly improved in the atomoxetine-treated subjects. Atomoxetine may also have a role in treating comorbid anxiety. A double-blind study compared atomoxetine to placebo in 176 children with ADHD and comer-bid anxiety disorders. The mean ADHD Rating Scale IV-Parent Version: Investigator Administered and Scored score improved significantly for the

atomoxetine group relative to placebo (-10.5, SD 10.6 vs. -1.4, SD 8.8, respectively; P < 0.00.1). The mean Pediatric Anxiety Rating Scale score also improved significantly in the atomoxetine group (-5.5, SD 4.8) compared with the placebo group (-3.2, SD 5.0; P= 0.011).

Alpha-2 Agonists. The alpha-2 agonists clonidine and guanfacine have been used in ADHD treatment as second or third-line agents, especially in children who do not improve on stimulants, who have comorbid aggression, or- who are experiencing negative side effects with stimulants, such as tics or insomnia.

Generally, clinical consensus suggests they may be useful in treating hyperactive-impulsive symptoms. Extended-release guanfacine is FDA-approved for the short-term treatment (up to 9 weeks) of ADHD in children ages 6 to 17. A randomized, controlled trial by Biederman et al assessed the efficacy and safety of guanfecine in 345 children with ADHD ages 6 to 7. The primary outcome measure was the ADHD Rating' Scale IV total score.

There was a statistically significant reduction in the score in subjects taking guanfacine compared with the placebo groups (-16.7 vs. -8.9, respectively, P < 0.0001). Rates of adverse-event-related attrition, however, reached an average of 16% in the guanfacine groups compared with 1.2% in the placebo group.

Other Agents. Although not FDA-approved for the treatment of ADHD, tricyclic antidepressants (TCAs) and bupropion (Zylex) are other medications that are sometimes used when stimulant treatment fails. A double-blind, placebo controlled trial of bupropion in children ages 6 to 12 found it to be modestly effective in the treatment of ADHD relative to stimulant agents. Studies comparing TCAs to placebo for ADHD treatment in children have generally reported a mode rate-to-robust response. Desipramine, however, should be used with extreme caution in children and adolescents because there have been reports of sudden death associated with its use. TCA use requires obtaining a baseline electrocardiogram, and plasma levels must be monitored to avoid toxicity.

Dr. Pliszka: Once the physician has chosen a treatment strategy, what is the process of assessing treatment response?

Dr. Wolraich: The best way to assess treatment response for the initial titration is to look at the core ADHD symptoms. This can be accomplished by having parents and teachers complete rating scales. The optimal response is to have symptoms resolve so that children are at a comparable level to their peers, if at all possible, and to increase the medication dose to that effect-unless significant side effects develop or you reach the maximum dose for that medication.

In addition to core symptoms, it's important to monitor the child's functioning. Primary healthcare professionals should discuss target goals with parents that are functionally defined and include those in the treatment or management plan. These goals should also he included as part of the monitoring process and can be added to

rating scales. It's important, however, to keep in mind that functional improvement may take more time to become apparent than improvement in core symptoms.

Dr. McCracken: In terms of where clinicians should set the oar for adequate improvement, the emerging consensus is that a reasonable goal is a reduction in baseline symptoms of'50% or more. That's a high standard, relative to what has previously been deemed acceptable, but there is reason to aim for this reduction in symptom level. It's also important to monitor "real-world" outcomes as closely as symptom response. Even in a child who has shown an excellent treatment response, follow-up visits should be closer to every 1 to 2 months, rather than the community average of 4 to 6 months in the MTA.

Dr. Webb: I think we have to be very careful about the way we, as physicians, psychologists, counselors, teachers, and parents, frame the use of ADHD medication. I am concerned about the way children begin to perceive themselves in relation to medication. I have heard a 7-year-old ask, "If I take 1 pill and get a C on my spelling test, do you think I could get an A if I look 2 or 3?" I have also heard a student inform the teacher that he "can't behave today" because he ran out of medication. We should help students understand that they need assistance such as medication, but we must also teach, expect, encourage, and reinforce appropriate behavior.

Approaches to suboptimal treatment response

If the patient reaches the maximum dose and fails to respond (or has side effects to) the stimulant medication, guidelines recommend trying another stimulant medication because response can be highly individualized. If, however, there is no response to this strategy, the clinician should carefully review the ADHD diagnosis and determine whether unrecognized comorbidities may be present, such as anxiety, depression, or developmental disorders. If not already implemented, behavioral therapy may be indicated. In addition, non-FDA-approved medications for the treatment of ADHD could be considered.

Dr. Pliszka; Generally, 1 to 2 weeks is sufficient to determine whether a patient will respond to a dose of a given stimulant. If there are no significant side effects, the physician should titrate to the next dose level and assess again in another I to 2 weeks.

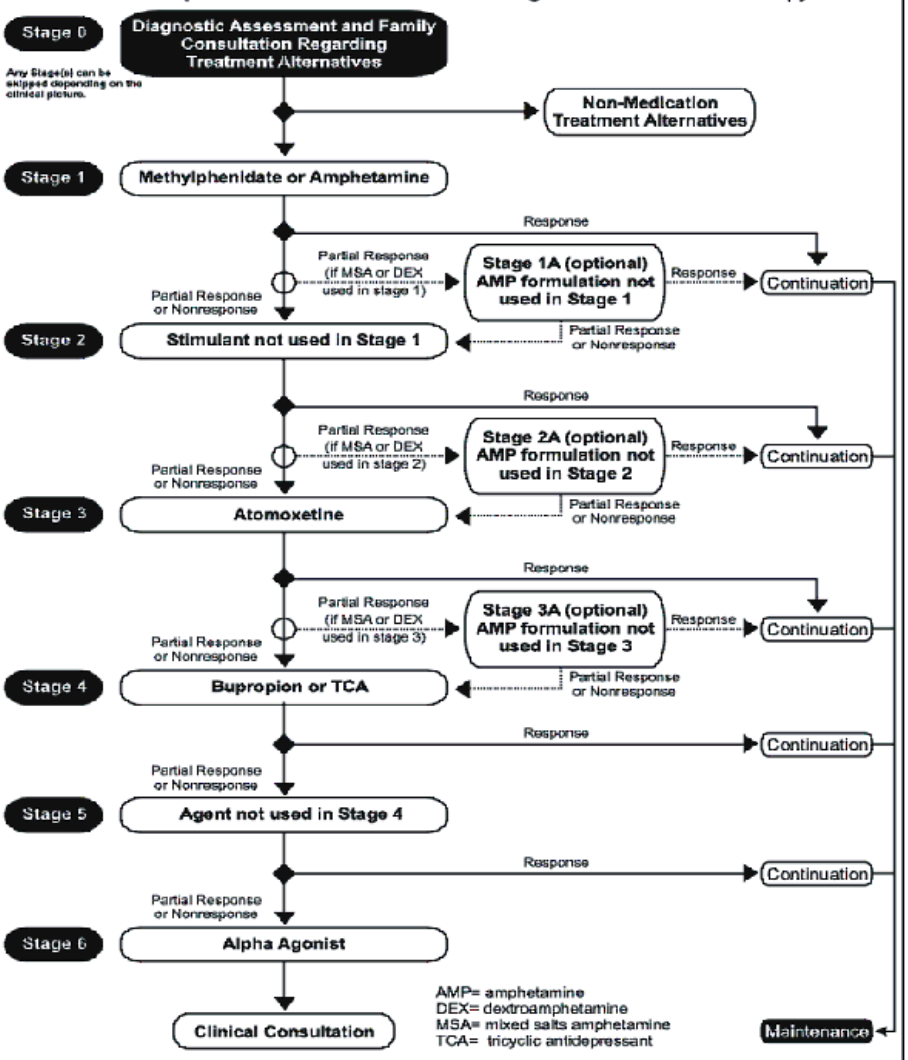
Treatment algorithms can be useful tools in the management of ADHD. The Texas Children's Medication Algorithm for pharmacotherapy in ADHD is one approach that has been successfully implemented in community practice and results in reduced polypharmacy (Figure 1).

Medication Side Effects

Monitoring for medication-related side effects is an important component of ADHD management.

Dr. Pliszka: For stimulant medications, the most common side effects are loss of

FIGURE 1. Texas Department of State Health Services Algorithm for Pharmacotherapy of ADHD



Reprinted with permission from Pliszka SR, Crismon ML, Hughes CW , et al. The Texas Children's Medication Algorithm Project: revision of the algorithm for pharmacotherapy of attention-deficit/hyperactivity disorder. J Am Acad Child Adolesc Psychiatry . 2006;45(6):642-657.

appetite, headache, and insomnia. If they are tolerable, it's acceptable to wait and see if they atten-uate. If they are not tolerable, the dose should be reduced or the medication should be switched. In terms of long-term side effects, the principle issue is the potential effect on growth. The MTA study showed that over 3 to 8 years, children taking medication may lose an average of 1 inch of height This appears to be related to the cumulative dose over time. In an intent-to-treat, analysis of growth-related side effects from the MTA study, patients who were still taking medication at a 24-month follow-up had a slower rate of height growth of approximately 1 cm/year compared with those who took no medication. At 36 months of treatment, these differences were found to persist to result in a difference of approximately 2 cm of height. However, not all studies have identified growth effects of the magnitude re-ported from the MTA. Younger children may be more vulnerable to the growth effects of stimulants. The PATS study investigated the growth of 140 preschool-aged children with ADHD who received methylphenidate for up to 1 year. Annual growth rates were 20% less than expected for height and 55% less than expected for weight. In both the MTA and PATS studies, however, children with ADHD were larger than average for both height and weight when compared with controls, suggesting that children with ADHD may be larger than children without ADHD. Hence, clinicians may fail to recognize growth deficits in children with ADHD because they will still fall within the mean height for age, even with slowed growth. Because of these concerns, serial plotting of height and weight on growth charts labeled with major percentiles should be performed once or twice yearly to monitor growth.

Dr. Pliszka: If a child appears to be falling off their growth curve, you can recommend drug holidays, such as being off medication in the summer. Ultimately, this is a decision between the family and the physician and should be based on careful assessment of costs and benefits. If being off medication results in serious academic or social dysfunction, then it may be worth the effect on growth.

With atomoxetine, nausea, upset stomach, and sedation are the most common side effects. This medication carries a warning on the label about the very rare side effect of suicidal ideation. The most common side effects with guanfacine are sedation, fatigue, or low blood pressure. In general, ADHD medications have a good safety record that is comparable lo other medications commonly used in the pediatric age group.

Even though it is extremely rare, there is a risk of sudden death occurring during treatment with psychotropic medications in children and adolescents, including TCAs and stimulants. This risk has been estimated to occur in similar rates to the general child and adolescent population not taking medications for ADHD, but has led the American Heart Association to recommend routine electrocardiograms for young patients who are initiating medication therapy for ADHD. Current AACAP and

AAP guidelines, however, do not recommend routine cardiac evaluation in such patients, noting that this form of screening has not been shown to appropriately balance benefit, risk, and cost. **Still, this risk should be considered when initiating therapy, and prescribing information for stimulants state that these medication should not be used in children and adolescents with preexisting heart conditions or symptoms of cardiovascular disease.**

Behavioral Interventions

Both the AACAP and AAP guidelines indicate that behavioral approaches are important primary or adjunctive treatment strategies in managing ADHD.

Dr. Langberg: Psychosocial interventions can be helpful in targeting specific areas of functioning that may be less responsive to medication.

For example, psychosocial intervention are often needed in addition to medication to improve academic skills such as organization, time management, and homework management. Behavioral interventions can also helpful in managing problem behaviors that are responsive to medication but may not be normalized, such as oppositional defiant behaviors.

All well-established psychosocial treatments for ADHD use behavioral therapeutic principles to improve children's behavior. Contingency management or the use of rewards and con-sequences to shape behavior, is a core component of effective psychosocial intervention for children with ADHD. Typically, psychologists or psychiatrists work with families to establish reward and consequence systems using behavior contracts, point systems, and token economies.

Dr. Webb: In the school, one strategy for daily progress monitoring is to divide the whole day into smaller units to differentiate, instructional time and unstructured periods, such as lunch and recess. Students receive feedback in the form of points, and have an overall goal for the day. Short-term setbacks aren't emphasized, so the student can have a successful day even if there have been some bumps.

Another approach involves changing aspects of the tasks a child is being asked to undertake. That might involve varying the length of the task or assignment, adjusting the level of the attention needed to complete the task, or fluctuating the activity level involved in completing the task. For example, we might be cutting the number of items in an assignment from 30 to 15 for ADHD students. We might stop every 20 to 30 minutes to have students consider the most important point of the assignment. We might combine independent and group work tasks to vary the level of required attentiveness.

We can also change the setting for the student-providing routine, limiting distractions, moving the student closer to the front of the room or away from the door. Many of these interventions actually improve the learning environment for all students, but they become critical for ADHD students.

The primary components of behavioral

therapy involve training parents and teachers to understand their child's behavior and use explicit, daily techniques to improve it. Although primary healthcare professionals can implement behavioral therapy, it is time consuming. As a consequence, referral to community mental health therapists, psychologists, and other trained personnel is often preferable. Behavioral therapy may also be provided by schools. Classroom management of behavior often involves increasing daily structure and im-plementing a system of rewards and consequences.

Dr. Pliszka: Dr. Webb, could you discuss the use of IEPs? A lot of physicians fire confused about how they are applied to ADHD.

Dr. Webb: IEPs (Individual Education Plans) can be created for students with ADHD who also have some other kind of identified disability, such as a learning disability. They are plans developed by a team that includes parents and school professionals, such as special education teachers, classroom teachers, and school counselors. The team develops some goals for improvement in identified areas over the course of the school year and then develops a plan to help the student attain these goals.

ADHD students who don't have another disability may still be eligible for accommodation. It can be documented that ADHD substantially limits one or more of a student's major life ac-tivities-such as learning-an accommodation plan can be written to identity interventions and accommodations that would help the student succeed in school.

Comorbid Conditions

Psychiatric Disorders

Comorbidities, such as ODD, (Oppositional Defiance Disorder) conduct disorder, anxiety, tics, and mood disorders, are common and may affect ADHD management. Overall, the prevalence rate of comorbid disorders occurring with ADHD is high, though rates vary among studies (Table 3).

TABLE 3. Prevalence of Select Comorbid Disorders in Children and Adolescents With ADHD

COMORBID	PREVALENCE
Oppositional defiant disorder	54%-84%
Depressive disorders	5%-40%
Bipolar disorders	0%-16%
Learning or language problem	25%-35%
Substance abuse or smoking	15%-19%

Dr. Pliszka: By far the most common comorbidity we see with ADHD is ODD-temper outbursts, constant arguing, defiance, and deliberately breaking rules. About one-third to one-half of children with ADHD have this particular condition. ODD is often secondary to the ADHD. Because of the impulsivity associated with ADHD, these children- tend to say the first thing that comes to mind. They find it difficult to restrain their emotions when frustrated. In many cases, ODD improves with medication.

In other cases, the child with both ADHD and ODD needs a very specialized home environment in which the parents are very consistent and patient. Sometimes the ODD can emerge from family dynamics and must be the focus of behavioral treatment. In more serious ODD, children may be explosively aggressive and pose a danger to the people around them.

Dr. McCracken: In serious cases of ODD, more intensive treatments may be indicated, such as more restrictive classroom settings, adjunctive medications, and intensive treatment programs for stabilization.

Dr. Pliszka: How do we distinguish between severe ODD arid bipolar disorder?

Dr. McCracken: This is an area that remains quite controversial. In children who have bipolar disorder that is well characterized in terms of classical presentation of mood-states of depression with periods of marked elation, other cardinal symptoms, and often volatile explosive behavior--50% or more will have ADHD, in the majority of those individuals, conduct disorder, ODD, and aggressive symptoms are seen as well. However, the prevalence of bipolar disorder among children with ADHD is all over the map. In some large samples, it's as low as in the general population--about 2%. In other studies, it's been stated to be as high as 15%. The difference in these prevalence rates may have much to do with how certain symptoms, such as irritability and temper outbursts, are viewed. Increasingly, we are cautioning clinicians not to interpret' irritability per se as a cardinal symptom of bipolar disorder. More classic symptoms of bipolar disorder are elated mood, grandiose thoughts, hyper sexuality, and a decreased need for sleep. Children with those symptoms are more likely to have early-onset bipolar disorder.

Dr. Webb: From the school perspective, whether a student has ADHD or ADHD with comorbidity, that student is still going to come to school every day. Even though these conditions are not going to be treated by a school counselor, communication with the counselor is imperative. That person should be included in the plan for helping the student manage their day-to-day behavior.

Dr. Wolraich: I would like to second that in terms of primary care. Even if the child is referred to and managed by a child psychiatrist, (the primary care physician needs to be informed about that patient's management. There should be coordination between mental health professionals, the

school, and primary care, professionals.

Dr. Pliszka: It's also important to add that the issue of combining other psychotropic medications with ADHD medicines for the treatment of comorbid disorders is quite complex and is often best managed in collaboration with a child psychiatrist. Guidelines for the treatment of comorbidities generally recommend treating ADHD first, unless there is an urgent situation, such as psychosis or severe major depressive disorder with suicidal ideation. In many cases, the comorbid symptoms will resolve either with ADHD medication alone or with the addition of behavioral therapy. On the other hand, if severe comorbid symptoms persist despite. ADHD treatment, then combined pharmacotherapy should be considered. In general, that is a situation in which the primary healthcare professional should consider referral to a specialist.

Tic Disorders and ADHD

Tic disorders are relatively common in children and are frequently associated with ADHD. One large, community-based study of more than 3,000 children and adolescents found that 12.8% of children with the combined subtype of ADHD had vocal or motor tics, whereas only 3% of children with inattentive type ADHD and 8.5% of children with hyperactive/impulsive ADHD had tics. Strikingly, the rate of ADHD among children with Tourette's syndrome has been reported to be between 35% and 90%.

Dr. Wolraich: The majority of children with Tourette's or chronic tic disorders are likely to have ADHD, but the prevalence of tic disorder in children with ADHD is not nearly so high. Before prescribing medication, it's important to get a careful patient and family history of tics so that, if tics develop during treatment, you can determine whether a child might be at risk and if the tics are an exacerbation of an existing tic disorder by medication. In the past, a tic disorder was a contraindication to the use of stimulant medications, but that is not necessarily the case now because stimulants may not result in an exacerbation in a majority of the children. It is one of the situations where a non-stimulant medication may be a better choice, but stimulant medications can be used if needed.

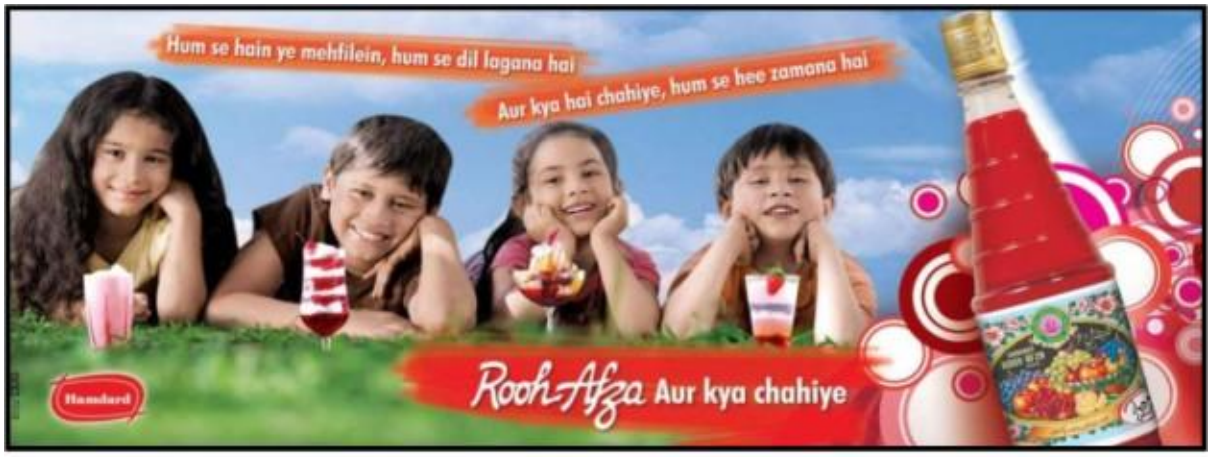
It is unclear how often stimulants induce tics in children with ADHD. Recent clinical trials of extended-release amphetamine salts and methylphenidate have not reported significantly higher rates of treatment-emergent tics compared with placebo. Clinical experience suggests many treatment-emergent tics resolve within weeks without a change in medication. Guidelines indicate that if impairing and persistent tics emerge during ADHD treatment with a stimulant medication, another stimulant or non-stimulant medication should be tried. If the only effective agent in ADHD treatment is a stimulant that induces tics, an alpha agonist such as clonidine or guanfacine may be added to the medication regimen.

The US FDA currently requires that package inserts of stimulants list tics, a diagnosis of Tourette's, or a family history of Tourette's as a contraindication to their use.

A meta-analysis of nine randomized, controlled trials examining the efficacy of medications in the treatment of ADHD in children with comorbid tics looked at the effects of six medications in this population. Methylphenidate offered the greatest and most immediate improvement of ADHD symptoms and did not apparently worsen tic symptoms in the short-term. Alpha-2 agonists, desipramine, and atomoxetine also showed efficacy in treating ADHD symptoms and improved tic severity. Another trial conducted by the Tourette Syndrome Study Group found that methylphenidate and clonidine, especially in combination, are effective for ADHD symptom management in children with comorbid tics. In that study, most children showed an improvement in tic severity ratings, not a worsening, with methylphenidate. The use of clonidine alone, however, resulted in moderate-to-severe sedation in 28% of children.

Conclusion

Roundtable participants explored timely issues in the management of ADHD in children and adolescents from both clinical and academic perspectives. While experts agreed that ADHD appears to be a common diagnosis, the diagnosis is often delayed, and treatment is often sub-optimal, despite the existence of well-delineated guideline recommendations. Given the chronic nature of this disorder, under treatment have far-reaching consequences into young adulthood for patients, their families, and society. Participants offered strategies to address challenges in ADHD management and concurred that the coordination of care is a key element in treatment success and improved patient outcomes.



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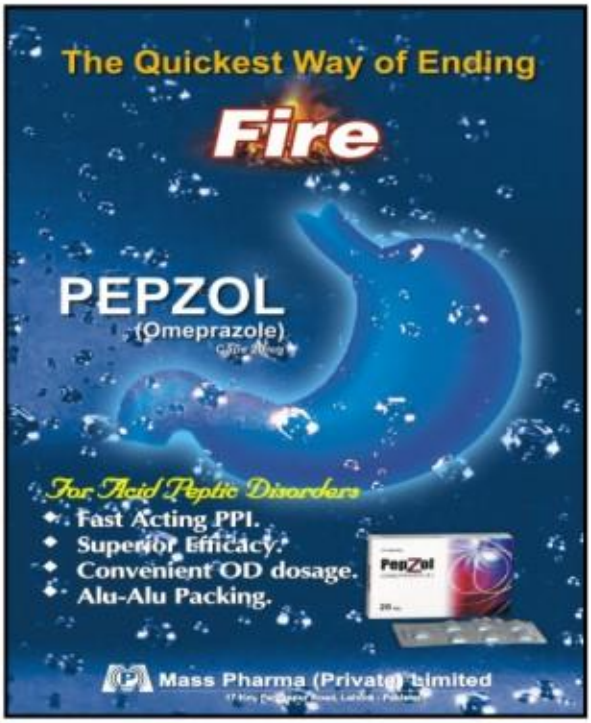

QUIRATE (QUETIAPINE) — Schizophrenia, Bipolar Depression, Bipolar Mania.

LEVTRAL (LEVETIRACETAM) — Epilepsy: Focal Simple Or Complex Seizures, Secondary GTCS, Primary Jerks,absence Seizures

GABMOR (GABAPENTIN) — Epilepsy Bipolar Disorders,Peripheral Neuropathy

VENTREVE (DULOXETINE) — Major Depressive Disorder, GAD, Stress Urinary Incontinence, Painful Peripheral Neuropathy, Fibromyalgia.

PRAZIP (ZIPRASIDONE) — Bipolar Mood Disorder (Manic And Mixed Type), Schizophrenia.

ZORPIA (LEVOSULPIRIDE) — Psychosis, Depression, Schizophrenia.

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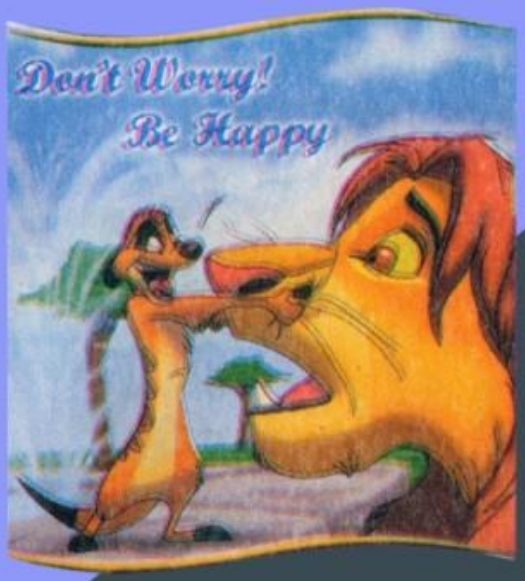

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