

Algorithms and guidelines: Superhighway road maps for treatment

Here are links to commonly used decision tools.

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Online algorithms and guidelines offer fast access to evidence-based, clinically applicable information on treating a range of psychiatric disorders ([Table](#)). With a click of a mouse or a handheld device, you can begin planning treatment at the point of care.

This article offers links to several commonly used medication algorithms and guidelines, including The Texas Medication Algorithm Project (TMAP), International Psychopharmacology Algorithm Project (IPAP), and American Psychiatric Association (APA) practice guidelines. Most of these sites offer free access, although some require registration.

Table
Selected online algorithms and the disorders they address

	TMAP	Harvard Psychopharmacology Project	IPAP
Schizophrenia	X	X	X
Depression	X	X	
Bipolar disorder	X		
Anxiety*		X	
PTSD			X
*in patients with substance abuse			
TMAP: Texas Medication Algorithm Project			
IPAP: International Psychopharmacology Algorithm Project			

WHY USE ALGORITHMS, GUIDELINES?

Algorithms and guidelines—mandatory in some clinical settings—are designed to help you deliver standardized care based on best-available evidence. Algorithms can be adapted for use in managing newly diagnosed and treatment-resistant patients, and can help you:

- sort through psychotropic options
- verify that that all suggested treatments have been tried for a difficult-to-treat patient.

Guidelines describe which assessment tools to use and offer timelines for testing and treatment.

Algorithms and guidelines do not guarantee favorable outcomes, however. Some patients cannot endure a series of unsuccessful, regimented medication trials over several months or years, and others will not be significantly improved at endpoint.

Some physicians view algorithms and guidelines as “cookbook medicine” and may be unwilling to apply them to their patients. Realize, however, that consensus committees develop algorithms and guidelines after reviewing available evidence. Also, algorithms and guidelines have contributed to advances in treating hypertension, diabetes, high cholesterol, cancer, and myocardial infarctions. In the end, you still need to judge whether a specific algorithm or guideline is right for each patient.

ALGORITHMS VS. GUIDELINES

Typically, algorithms spell out specific treatment instructions, and guidelines provide general recommendations. This distinction is not clearcut, as some guidelines are quite detailed. Sometimes algorithms are part of guidelines. Others define algorithms as guidelines in flowchart diagrams.

Some algorithms and guidelines—such as TMAP and the MacArthur Initiative Depression Toolkit—were created as part of a larger disease management system, with assessment instruments and protocols for follow-up visits.

We frequently use the TMAP depression algorithm to assess which steps our patients have completed. Although patients seldom fit exactly into a particular step, we can base further treatment on the next recommended steps. Sometimes we use the algorithm to ensure that patients have tried all recommended treatments, regardless of which step they are at.

ONLINE ALGORITHMS

TMAP (www.dshs.state.tx.us/mhprograms/TMAPtoc.shtm). TMAP, started in 1995 as a collaboration between the University of Texas at Southwestern and the Texas Department of Mental Health and Mental Retardation, is used in Texas’ public mental health system. Its goals include standardizing treatment and improving patient outcomes while optimizing costs.

Other states have implemented similar forms of TMAP. For example, some California counties use it in their CalMAP (California Medication Algorithm Project).

Flowcharts document decision points for treating schizophrenia, major depressive disorder (nonpsychotic and psychotic), and bipolar disorder (hypomania/mania and depression). An algorithm provides instruction on switching medications if extrapyramidal symptoms, akathisia, tardive dyskinesia, or symptoms that suggest neuroleptic malignant syndrome arise.

The TMAP site also offers:

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- manuals listing guidelines on disease management, visit frequency, what to assess at each visit, criteria for medication changes, and more
 - patient handouts describing psychotropics’ benefits and side-effect risks
 - blank office visit forms for clinicians to document patient progress and algorithm stage.

All TMAP materials are accessible without registration.

Harvard Psychopharmacology Algorithm Project (<http://mhc.com/Algorithms/>). This project—started by David N. Osser, MD, and Robert T. Patterson, MD, with roots back to 1991—has its home at Harvard’s South Shore Residency Training Program. Its goal is to improve quality of care by promoting use of evidence-based medicine and computerized algorithms.

Flowcharts and interactive consultations offer evidence-based instructions for treating:

- anxiety in patients with a substance abuse disorder

- schizophrenia
- or depression (unipolar, bipolar, or dysthymic).

The interactive modules—presented as successive multiple-choice questions—are run directly from the Internet but work only with Windows PC. After you answer each question about the patient’s clinical condition and treatment, the program presents the next appropriate decision question on the flowchart until you reach the endpoint.

Optional registration lets you download the modules and algorithm editor for offline use. An “algorithm editor” lets you modify the algorithms to your practice needs or create new ones.

The site also lists other psychopharmacology algorithms (see [Related resources](#)).

IPAP (www.ipap.org/) was formalized in 1993 by Tennessee psychiatrist Kenneth Jobson, MD, to promote systematic treatment of axis I disorders. IPAP draws international participation, with conferences held in Japan and China and idea exchanges with algorithm projects of other countries.

IPAP offers flowcharts for treating schizophrenia and posttraumatic stress disorder (PTSD). Supporting articles address regional considerations for treating schizophrenia in South Africa, Australia, and Canada, as well as other topics.

Registration is required to download the algorithms and supporting articles.

MacArthur Initiative Depression Toolkit (www.depression-primarycare.org/). The MacArthur Initiative on Depression and Primary Care at Dartmouth and Duke offers a toolkit (<http://www.depression-primarycare.org/clinicians/toolkits/full/>) designed to help primary care physicians treat depression. The toolkit, also useful for mental health clinicians, contains:

- “manualized” instructions for antidepressant treatment including dosages, durations, and when to switch antidepressants
- Questionnaires, including the Patient Health Questionnaire (PHQ-9), for depression screening and progression monitoring
- Patient education material on depression and antidepressant treatment.

The toolkit is based on [Agency for Healthcare Research and Quality \(AHRQ\)](#) depression management guidelines. Registration is required to download the toolkit.

GUIDELINES

APA (www.psych.org/psych_pract/treatg/pg/prac_guide.cfm) posts 14 practice guidelines, three of which (HIV/AIDS, suicidal behaviors, psychiatric evaluation of adults) are not based on DSM-IV-TR diagnoses. You can download guidelines for free or purchase a compendium book listing them. The guidelines are also published periodically in the *American Journal of Psychiatry*.

American Association of Child and Adolescent Psychiatry (AACAP) (www.aacap.org/publications/pubcat/guideline.htm). AACAP offers 20 practice parameters and guidelines, eight of which are not related to DSM-IV-TR diagnoses. These non-DSM-IV-TR topics include use of psychostimulants, managing aggression in hospitalized patients, forensic evaluations, custody evaluations, and treating sexually abusive children and adolescents.

Online access is restricted to AACAP members. The guidelines also are published in [AACAP’s journal](#).

Veterans Affairs/Department of Defense guidelines (www.oqp.med.va.gov/cpg/CPG.htm) cover diagnosing and treating depression, PTSD, psychoses, and substance abuse disorders. These tools draw from other practice guidelines, including

those of the APA.

The VA site presents both guidelines and algorithms, with delineation of primary care and specialty care roles. Appendices contain more-detailed information on specific medications, dosages, and other information.

National Guideline Clearinghouse (www.guideline.gov). This Web site, partly sponsored by AHRQ, lets you search or browse for guidelines not mentioned in this article. Some guidelines on this site are available in Palm OS-based format for handhelds.

The site is comprehensive and the search engine generates links to guidelines on related topics, so a search will likely yield more information than you want. For example, a search for “depression” returned more than 350 entries.

On the other hand, this comprehensiveness increases your chances of finding what you need. The site also lists search strategies to help you limit and refine searches.

Related resources

Osser DN, Patterson RD. Lists of psychopharmacology algorithms. *Mental Health Connections*. <http://www.mhc.com/Algorithms/AlgoLinks.HTML>

California Medication Algorithm Project (CaMAP). www.cimh.org/research/child_calMAP.cfm

Shivakumar G, Suppes T. Bipolar treatment update: Evidence is driving change in mania, depression algorithms (discusses use of TMAP in bipolar disorder). *Current Psychiatry* 2004;3(2):22-40.

Disclosure

Drs. Kung and Lapid reports no financial relationship with any company whose products are mentioned in this article, or with manufacturers of competing products.

To comment on this article or share an algorithm that works in your practice, [click here](#).