ASCP
AMERICAN SOCIETY OF
CLINICAL PSYCHOPHARMACOLOGY

Eighth Edition

MODEL PSYCHOPHARMACOLOGY CURRICULUM

For Training Directors and Teachers of Psychopharmacology in Psychiatric Residency Programs

By
A Committee of the
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Caution: Please read the User's Guide for the Curriculum" (pages 10 - 15) before using this Curriculum.

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(THEORY AND PRACTICE UNDERLYING THE DEVELOPMENT OF THE CURRICULUM – PLUS INSTRUCTIONS FOR USE)

We hope that you will be pleased with this eighth edition of our Model Psychopharmacology Curriculum—now distributed electronically. We want you to find it both helpful and user-friendly. **BEFORE USING IT, PLEASE READ THIS SECTION**. In order to keep it useful, up to date, and to make it even easier to use, it is our intention to continue to update the curriculum on a regular basis, i.e. every two years.

This curriculum provides both 1) a model of how psychopharmacology may be taught and 2) the core content of a psychopharmacology lecture series that extends across the four years of psychiatric residency training. This curriculum should not be considered a textbook or handbook of psychopharmacology. It is not a reference text in which to look up research findings, or a primer in how to prescribe, although it includes many suggestions about prescribing. Rather, it provides a clinically oriented overview of the field aimed at educators, residency directors, and others with a responsibility for educating others and assuring standards of knowledge and practice, i.e., competencies, within an organization. It also provides teaching materials like ratings scales, lists of books and journals etc., relevant to a psychopharmacology education. Our hope is that this curriculum fills a unique gap in psychopharmacology education – that is, to provide most all the materials a training program needs to help trainees learn modern psychopharmacology.

Background

Following publication of the first edition, we surveyed about half of those training programs which had purchased it to get feedback on how it was being used. While the response was broadly positive, some programs questioned how the curriculum was to be used and who at the institution should possess and manage it. We suggest that the psychopharmacology training director/coordinator or the program director should manage the curriculum. "Model curricula" are of no value if not used, and we encourage training directors and psychopharmacology coordinators to put this curriculum to good use by making it available to their teachers and students.

Based upon the feedback we received on the first edition, we revised the entire curriculum, updated and added lectures and converted the slides to PowerPoint for the second edition, published in 2001. For the 2004 third edition, we again updated all of the above and added pre and post lecture competency questions for most presentations. In the fourth edition and again in 2010 for the sixth edition, all presentations were updated, a "crash course" was added, new lecture topics were added, and all the appendices were revised and updated. Of equal importance, the sections on how to set up a program, as well as how to evaluate teachers and students, were thoroughly revised in the context of recent developments of psychopharmacology competencies.

For this eighth edition, we updated all sections and all presentations and new topics have been added. A website, www.psychopharmcurriculum.com, has been developed for distribution of the curriculum, making it more accessible and easily updated. The curriculum is now available at low cost- all proceeds are used to revise and update every two years.

In 2008, the ASCP partnered in a long-term project with the American Association of Directors of Psychiatric Residency Training (AADPRT) to further develop the curriculum. The first fruit of this collaboration was a multimodal teaching module on schizophrenia which included a PowerPoint presentation supplemented by a video of a 'model' lecture, a video-vignette, several problem-based cases, pre and post questions, and learning/teaching resources. The module also featured many pedagogic innovations such as key teaching points and lecturer comments on the slides – all of which illustrated what pedagogic features local programs could add to any presentation. The next steps in this partnership included interactive teaching modules on depression and bipolar disorder developed by a committee of senior psychopharmacologists from ASCP, educators from AADPRT and residents and fellows from around the country.

Rationale Underlying the Pedagogy

It is important to emphasize that when training directors and teachers see the curriculum, they understandably frequently focus on the presentations. We believe the key issue is to recognize that there is a four-year program to be set up (with an adequate infrastructure), educators to be recruited,

and content to be covered and taught. The entire process must then be evaluated! **Therefore, look over Volume I, not just the presentations!**

A training program covering multiple years requires an organized approach to the teaching of psychopharmacology. The "apprentice model" as the sole technique of the teaching-learning process is inadequate. At least in the U.S. that model has been largely abandoned because it cannot cover the large body of old and new information to be learned, as well as the competencies to be achieved. Nor is it enough to supplement this apprentice model with only lectures, as residents must also learn to think independently, to keep abreast of new information as it becomes available, to evaluate what they hear and read, and to develop skills to deliver the best treatment possible. Thus, programs must incorporate principles of adult learning theory by including educational activities such as journal clubs, case conferences, problem-based learning, specialty clinics, computer technology, multimedia, and other innovative methodologies to make the new information become "real".

Organization

Pages 10-14 serve as a prelude to the curriculum, explaining how to use this teaching tool. Please note that the curriculum is presented for download online in three parts: A) an introductory volume, describing the curriculum and teaching materials; B) the actual presentations (lectures) for crash, basic, advanced courses plus optional lectures, and C) two specifically developed modules on teaching depression and schizophrenia. The introductory volume has four parts:

Part I - This contains the preface, rationale, organization, teaching objectives, and instructions on how to use this curriculum and the lectures. It will guide you from the first year through the fourth year of residency training as you organize and manage the program.

Part II - This is the "body" of the curriculum describing:

- **teaching objectives**
- **what to teach**
- **how to teach**
- **how to evaluate**
- **teaching pearls**

This section should provide all the information you will need to introduce the curriculum into your program and actually how to organize and execute it, from "A through Z."

Part III – For ease of teaching, this part of Volume I has the overviews necessary for the teaching of child and adolescent psychopharmacology, followed by geriatric psychopharmacology, alcohol and substance abuse psychopharmacology, clinical algorithms.

Part IV- The "appendices" provide the teaching materials (or tell you where to get them) to help implement the program. Please note that there is information on texts, journals, rating scales, websites, evaluative forms, etc.

In order to make this curriculum as responsive to your needs as possible, if you have training material you think might be useful for inclusion in our ninth edition, please send it to us.

The downloadable files have all the PowerPoint slides both for adult, as well as child/adolescent and geriatric psychopharmacology. These slides are not meant to be finished, iconic products, but rather should be used as starting points and guides. **Remember these lectures are working teaching tools, not a textbook or a journal article. As such, they are relatively up-to-date as of late 2014.**

We encourage and understand that some users will want to assemble our slides – plus their own – to create a personalized presentation. To guide the user in this process, in the body of the Curriculum (Volume I), you will find a great deal of detailed information on how and what to teach, not only year by year, but topic by topic, as well as information on evaluation and teaching in both child/adolescent and adult settings. There is also a template for each presentation.

How to Use the Presentation Modules

As above, you may want to add, delete, change, reorder, or combine slides from different modules.

You should build your own lecture around the slides you choose. Alternatively, if you or your teaching faculty has already designed his/her own talk, our slides may be used to illustrate that talk, or to be integrated into their own group of slides. **Remember we have indicated what we consider core slides with an asterisk (*).**

Printed photocopies of the slides may be made and distributed to the audience. (If you do that, it is a good idea to leave some room, preferably ruled, next to or below each slide for any notes the listener might want to make). If your residency program has an internal website accessible to your residents, consider posting the presentations in advance of the session so that residents can preview material or review the material on their computers during the actual session. It then also serves as a resource for later use.

Since these presentations are intended to be used as the one summary in a course for PG-II's or III's of a complex topic, e.g. "depression," a lecture which has many slides, we have included teaching points to highlight key points. Some presentations include references or speaker notes and we refer the educator to our recommended list of journals and texts. We have included pre and post-test "questions" for each presentation.

There have been three important issues central to curriculum adaptation in psychiatry. The first is reluctance by training directors to use material on any topic if it was not developed in the department. Given the rapid advances in neuroscience and clinical research, we believe that is a luxury we can no longer afford, i.e., no one program has all the content expertise necessary to teach. The second is that large programs have often not supplemented in-house material with presentations they may lack. This curriculum fills that gap. The third is that small programs have been overwhelmed by the task of integrating such a complex curriculum. To meet that need, we have set up a consultation program for training directors (please see the next section for details).

Neuroscience

The issue of teaching neuroscience in psychiatric residency programs has been viewed as "non-relevant" for many years by students, faculty and administrators. There are now very clinically

oriented neuroscience courses as well as a National Neuroscience Initiative (www.nncionline.org) that aims to bring neuroscience into the core psychiatric curriculum. Each program will have to decide how much and how to integrate this material into their psychopharmacology courses and programs. Contact Amit Etkin, M.D. at Stanford University (etkinlad@stanford.edu) for further discussion regarding this important curriculum issue.

CONSULTATION

Because we are so eager for you to get full value from this ASCP Model Curriculum through the maximization of its use, we should be delighted to answer any questions you may have and help you to use it. We'll do that by responding to your written queries or through free-to-you telephone help, and/or formal consultation by a committee member of your choice!

Please do call the curriculum committee for help, feedback, consultation, or questions.

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DISCLOSURES

As conflict of interest issues are a major issue in the field, we wish to make clear that there was no industry support for this edition. All content and all lectures in all editions were developed by either members of our committee or by lecturers we chose as part of their teaching responsibilities at their institutions.

REFERENCES AND RELATED ARTICLES ON THE TEACHING AND PRACTICE OF CLINICAL PSYCHOPHARMACOLOGY

1. Miller GE. The assessment of clinical skills/competence/performance. *Acad Med*. Sep 1990;65(9 Suppl):S63-67.

2. Glick ID, Janowsky DS, Salzman C, Shader RI. A proposal for a model psychopharmacology curriculum for psychiatric residents. *Neuropsychopharmacology*. Jan 1993;8(1):1-5.

3. Naranjo CA, Shulman RW, Ozdemir V. Development and evaluation of a clinical psychopharmacology educational curriculum. *J Clin Pharmacol*. Jun 1997;37(6):474-479.

4. Glick ID, Janowsky D, Zisook S. On Using the ASCP Model Curriculum for Psychopharmacology:Comments and an Update. *Acad Psychiatry*. Dec 2001;25(4):237-238.

5. Wulsin LR, Kramer SI. Teaching psychopharmacology in the 21st century. *Acad Psychiatry*. 2001;25:102-106.

6. Balon R. Teaching psychopharmacology: introduction. *Acad Psychiatry*. May-Jun 2005;29(2):116-119.

7. Dubovsky SL. Who is teaching psychopharmacology? Who should be teaching psychopharmacology? *Acad Psychiatry*. May-Jun 2005;29(2):155-161.

8. Georgiopoulos AM, Huffman JC. Teaching psychopharmacology: two trainees' perspectives. *Acad Psychiatry*. May-Jun 2005;29(2):167-175.

9. Glick ID, Zisook S. The challenge of teaching psychopharmacology in the new millennium: the role of curricula. *Acad Psychiatry*. May-Jun 2005;29(2):134-140.

10. Juul D, Winstead DK, Sheiber SC. Assessment of psychopharmacology on the American Board of Psychiatry and Neurology examinations. *Acad Psychiatry*. May-Jun 2005;29(2):211-214.

11. Zisook S, Benjamin S, Balon R, et al. Alternate methods of teaching psychopharmacology. *Acad Psychiatry*. May-Jun 2005;29(2):141-154.

12. Glick ID, Salzman C, Cohen BM, et al. Improving the pedagogy associated with the teaching of psychopharmacology. *Acad Psychiatry*. May-Jun 2007;31(3):211-217.

13. Zisook S, Glick ID, Jefferson JW, et al. Teaching psychopharmacology: what works and what doesn't. *J Clin Psychopharmacol*. Feb 2008;28(1):96-100.

14. Glick ID, Balon RJ, Ballon J, Rovine D. Teaching pearls from the lost art of psychopharmacology. *J Psychiatr Pract*. Sep 2009;15(5):423-426.

15. Zisook S, Balon R, Benjamin S, et al. Psychopharmacology curriculum field test. *Acad Psychiatry*. Sep-Oct 2009;33(5):358-363.

16. van Dijk N, Hooft L, Wieringa-de Waard M. What are the barriers to residents' practicing evidence-based medicine? A systematic review. *Acad Med*. Jul 2010;85(7):1163-1170.

17. Muzyk AJ, White CD, Kinghorn WA, Thrall GC. A psychopharmacology course for psychiatry residents utilizing active-learning and residents-as-teachers to develop life-long learning skills. *Acad Psychiatry*. Sep 2013;37(5):332-335.

18. Prabhakar D, Balon R, Zisook S. Assessing the need for a multi-modal curriculum in psychopharmacology education. *Acad Psychiatry*. Nov 1 2012;36(6):497-499.

19. Deligiannidis KM, Girgis RR, Lau A, Balon R, Zisook S. Psychiatry resident/fellow-initiated and -designed multi-modal psychopharmacology curriculum for major depression. *Acad Psychiatry*. Sep 1 2012;36(5):414-418.

20. Glick ID, Zisook S, Shader RI. The challenge of teaching psychopharmacology and improving clinical practice. *J Clin Psychopharmacol*. Jun 2005;25(3):203-205.

21. Wood WB, Gentile JM. Education. Teaching in a research context. *Science*. Nov 28 2003;302(5650):1510.

22. Salzman C, Glick I, Keshavan MS. The 7 sins of psychopharmacology. *J Clin Psychopharmacol*. Dec 2010;30(6):653-655.

23. Detre T. The ten commandments of psychiatric research. *Biological Psychiatry*. Oct 1 1996;40(7):675-681.

24. Salzman C, Glick ID. Teaching the Teachers of Psychopharmacology. *Academic Psychiatry*, Dec 4 2014(E-Press)

25. Stahl, S.M., Davis, R.L. Best Practices for Medical Educators NEI Press, Carlsbad, CA 20009

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CURRICULUM AND TEACHING MATERIALS

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Part I: Introduction to the ASCP's Model Curriculum

PREFACE

Why do we need a curriculum in psychopharmacology? Of what practical use will it be? Historically, psychiatry residencies in the U.S. have been reputed to be *either* psychosocially *or* biologically oriented. Thus, there is great variance among faculty with regard to skills, interests, and methods of practicing and teaching psychopharmacology. This has a significant impact on the residents in a particular program — and on the institutions these residents may later join as faculty.

The psychopharmacology curriculum varies not only from one institution to another, but also within an institution from one graduating class to another. The constant infusion of new faculty members results in a 'hit or miss' experience, with some residents having a more positive experience than others. There is no consensus on the criteria for a lecturer or supervisor to use in determining core psychopharmacology knowledge requirements for PG 1, 2, 3, or 4 years.

Changing economic conditions have led to drastic changes in service lines and budgets at most institutions. Although all institutions employ experienced psychopharmacologists, the faculty must devote extensive time to providing clinical care and conducting research.. Thus, they are hard pressed to find time to prepare lectures for residents in their own institutions. Additionally, less time for patient care and money is available to support the preparation of state of the art teaching aids for residency programs. Paradoxically, faculty members may convey more of their knowledge while on their own lecture circuits to primary-care physicians or neurologists than to the residents in their own programs. Teaching of residents is often left to junior staff members, who must juggle heavy clinical loads and salary pressures in order to find time to prepare lectures on medications — about which they themselves have learned only very recently as residents. In addition, it has drastically reduced support from industry for psychopharmacology education over

the last decade.

The bottom line is that in the United States historically there has been less formal time devoted to the teaching of psychopharmacology than to other subjects. The situation is even worse outside of the United States—often trainees educate each other in the absence of experienced psychopharmacology teachers.

The introduction of safer and easier-to-use psychotropic agents has placed a greater demand on graduating psychiatry residents to demonstrate psychopharmacology skills that are significantly superior to those possessed by primary care doctors, especially with regard to complicated or refractory patients, co-morbid disorders, and to know when to make the decision *not* to use a psychotropic agent. In addition, managed care has in many cases limited the psychiatrist's treatment role to pharmacotherapy, making expertise in this area essential for any practitioner. Likewise, primary-care physicians are increasingly viewing psychiatrists as sub-specialists in psychopharmacology (consistent with a medical model of thinking) when, in fact, many psychiatry residencies do not adequately prepare residents for this role.

It is important to recognize the circumstances under which "real world" clinical psychopharmacology is carried out. In other words, if you only have 15 minutes to evaluate a new patient or only 5 minutes in which to follow up, it just isn't going to work. Therefore, we suggest standards for the minimum amount of time that should be allowed for complicated/uncomplicated cases both for the initial interview and for the follow up. We should think in terms of at least an hour for the initial interview and a follow up session lasting 30 minutes, depending on the complexity of the case (more on that later). We do not recommend a five or fifteen minute "med check".

For these reasons, this curriculum has been designed to:

1. provide a comprehensive, uniform syllabus, emphasizing a core knowledge that will build on each previous year of training;

2. decrease preparation time for lectures by providing detailed lecture outlines or slides from which to build lectures customized as preferred and an organized curriculum with which to teach;

3. allow residency programs of all sizes to fine tune the curriculum to custom fit their own needs;

4. ensure that residents have the confidence, knowledge, and the superior skills to make both routine and complex psychopharmacology consultative decisions so that, by graduation, their skills exceed the skills required by the PRITE and ABPN;

5. prepare residents for the possible inclusion of tests of clinical psychopharmacology at the end of residency;

6. offer a solid foundation for a life-long learning model mirroring ABPN's maintenance of certification process.

Using the Model Curriculum To Teach Medical Students, Primary Care Physicians and Other Mental Health Professionals

Although the ASCP model curriculum has been specifically designed to train psychiatric residents, we have received a number of requests to expand its use to other practitioners. Psychopharmacology educators have reported that they have found the curriculum, especially the presentations, useful in teaching psychiatrists already in clinical practice and other professionals, specifically medical students, primary care physicians, pharmacists, nurses, and allied mental health professionals.

The next question is how to utilize these curriculum materials for such audiences. What has been suggested (and attested to by the educators who have used the curriculum) is to adapt each presentation to the specific needs of the audience. Thus, educators may need to give more basic diagnostic material, avoid highly technical and theoretical discussions of drug mechanisms, minimize jargon and maximize clinical implications of the material presented. **Be practical**. As to how to use these materials – "pick and choose" from our presentations, then decide which slides from each session you want to use for the target audience. Educators utilizing the materials for

non-psychiatric audiences should make extra efforts to explain concepts and fundamental principles. With less pharmacologically sophisticated audiences, the educator may find it helpful to summarize frequently and/or elicit questions as the lecture progresses. Teach using case examples!

It is our conviction that various target audiences can benefit from this information. In many cases, psychotropics are part of their professional lives, yet their knowledge base and skills in utilizing this information is relatively thin. We believe that the ASCP curriculum offers a unique systematic opportunity to transmit important psychopharmacologic information that can be effectively integrated in the recipient's clinical work.

Please note, we have developed and published a specifically designed version of the curriculum for the needs of 1) medical students in 2013 and 2) primary care physicians in 2010 (now in the process of being updated). Both can be purchased from the ASCP.

RATIONALE

Despite its usefulness in various other settings, the fundamental purpose of this curriculum is to provide a basis for planning and teaching psychopharmacology in a psychiatric residency program. It originates from the assumption that psychopharmacology is an extremely important skill that should be taught comprehensively in every such residency program in the United States. The time allotted and/or the effectiveness of teaching varies from one program to another, and resources for designing such educational programs are not uniformly distributed among residency programs. Clearly, we need to ensure that psychiatric residents obtain adequate, science-based knowledge and skills. This model curriculum is our response to requests from the American Psychiatric Association (APA) and the American Association of Directors of Psychiatric Residency Training (AADPRT), and from teachers (and their Chairs) of psychopharmacology, who have asked for a structured curriculum and teaching aids.

ORGANIZATION OF A PSYCHOPHARMACOLOGY PROGRAM

For each program, one faculty member should be identified as "Coordinator" or "Director of Psychopharmacology Training." This individual should have a broad orientation and a strong

commitment to clinical psychopharmacology. He or she should be an integral part of the particular department's residency education committee.

A major goal of the development of a clinical psychopharmacology program should be to train residents to use an integrated approach to drug and psychosocial treatment of the patient. Supervisors of psychotherapy training, especially non-physicians, sometimes directly or subtly confer anti-medication biases to supervisees. The result is that the resident cannot comfortably discuss his or her patients with a single supervisor in a comprehensive manner. Obviously, problems resulting from such divergent foci and biases are difficult to overcome. Resident training directors should be aware of who these supervisors are, address this issue directly with them, making special effort to assure that residents can get adequate supervision for all patients receiving medication, even if they are predominantly psychotherapy cases.

One approach is to provide psychopharmacology supervision in regular group meetings for residents; another is to provide this in individual sessions that focus on psychopharmacology. Either method will provide residents with exposure to the psychopharmacology supervisor's experience and perspective regarding the integration of different therapies. The Residency Review Committee (RRC) for psychiatry requires individual supervision for each resident weekly. Ideally, at least one of the resident's supervisors should be well versed in clinical psychopharmacology.

For programs lacking faculty members with special expertise in psychopharmacology, an expert within reasonable geographic proximity to the program should be identified and asked to consult with the person (or committee) in charge of organizing the program's psychopharmacology curriculum. Each program should have access to relevant readings concerning the interface of psychopharmacology and psychotherapy. Programs of moderate to large size should consider having a "Chief Resident" in psychopharmacology to work with the faculty "coordinator."

Relationship of Research to Training

The relationship of clinical psychopharmacology teaching and neuroscience-psychopharmacological research is important to define. Obviously, research underlies the major clinical psychopharmacological practices utilized. However, it is important to

note that doing psychopharmacological research and teaching clinical psychopharmacology is not the same thing. A program may have excellent basic or clinical psychopharmacological researchers who are poor teachers, or who are not interested in teaching clinical psychopharmacology. Furthermore, one does not necessarily need to be a front-line researcher in psychopharmacology to teach the art of psychopharmacology effectively. We feel that psychiatrists, who are interested in understanding clinical psychopharmacology, and in teaching both its practical and theoretical components, are key to developing a viable psychopharmacology program.

Part II: The Core Curriculum

OVERVIEW AND EDUCATIONAL OBJECTIVES

This teaching package is based on the notion that there are psychopharmacological theories and practices to be taught and underlying principles to be learned. On the assumption that psychiatric residents learn in different ways, at different speeds and in very different settings, we have presented a variety of formats. Furthermore, repetition of appropriate concepts and data at various steps in the residency education staircase is necessary for the integration and consolidation of this information base. Case-based learning and the involvement of senior supervisors, who can model the integration of psychopharmacology into the total treatment plan, underlie the entire model.

By way of providing a road map, let us delineate educational objectives for both knowledge and skills:

Knowledge

The minimum objective of a clinical psychopharmacology program should be to make explicit the required knowledge base of psychopharmacology for educating psychiatric residents in an optimal and standardized fashion. The curriculum should help the trainers in teaching participants to:

- Use psychotropic drugs safely and recognize pseudo-psychiatric symptoms that may represent medication-associated toxicity (e.g., anxiety in the context of short benzodiazepine half-life, initial psychomotor activation by SSRIs, or anticholinergic delirium).

- Know when, and which, psychopharmacological agents are the treatments of choice.
- Understand the limitations of pharmacotherapy and its potential dangers and pitfalls.
- Know appropriate application of augmentation, combination, and switching strategies.
- Know when *not* to use psychotropic drugs.
- Understand basic theoretical models relating current knowledge of the biology of the disorder(s) in relation to the proper use of psychotropic drugs.

Skills

A clinical psychopharmacology program should teach specific skills so that participants will be able to:

- Integrate psychotherapeutic, psycho-educational, psychobiologic and psychopharmacologic aspects of care.
- Develop a systematic approach to gathering diagnostic and treatment outcome data and in making accurate chart recordings of these data.
- Develop the ability to perform psychopharmacological consultations efficiently and effectively, particularly for primary care colleagues and non-physicians.
- Develop the ability to examine critically the relevant psychiatric literature via an understanding of the basic scientific principles required to test hypotheses.
- To provide care that is compassionate and competent and which maximizes patient well-being, satisfaction, and adherence.
- To develop tools and habits to keep one's skills up-to-date with new and emerging findings.

In addition, we must specifically mention ECT, an evidence-based survivor of the pre-psychopharmacologic somatic therapies for mental illness. In many educational programs, ECT is grouped with psychopharmacology since it is a type of somatic treatment and it remains the back-up therapy for some severely mentally ill patients when psychotropic drugs fail. No specific syllabus is provided by other agencies, so lessons on ECT are interspersed throughout this syllabus to provide a guide for the education of psychiatric residents. In addition, for this edition, we have added a lecture on novel treatments that includes VNS, rTMS, DBS and CRF antagonists.

Please note, we have added lectures on the legal, regulatory and ethical aspects of psychopharmacological prescribing practices. Further we recommend that programs should include material on "informed consent," the duties of physicians in emergency clinical situations (suicide and/or assaultive behavior, etc.), the right of the patients to refuse treatment, as well as their right to participate in experimental protocols if they choose.

The American Council of Graduate Medical Education requirements indicate that psychiatric residents need adequate education in biological aspects of psychiatry, including neurobiology and psychopharmacology, relative to both inpatient and outpatient settings. Further, The Psychiatry Milestone Project has clearly identified milestone threads under the "patient care" and "medical knowledge" competencies. No specific numbers of hours are indicated, although some programs have outlined the different agents and diagnostic categories to be included in the caseload for each trainee to insure adequate experience. It is understood that pharmacotherapy will not be the only treatment given to many patients; nonetheless, the experience of long-term medication management is critical for the psychiatric resident.

We also suggest that residents be taught "how to use" the APA Practice Guidelines for Psychopharmacologic Practice as it is not obvious how to actually use them.

For adequate residency training in psychopharmacology, in the absence of specific requirements, we suggest the following "minimum requirements":

Outpatients

Ideally, the initial contact with some of these patients should have occurred during hospitalization

50 – 150 patients for at least one year; 5 – 10 patients for at least two years

At least 5 patients in each category followed for one year and at least one per category for two years:

- Anxiety disorders, including panic disorder, social phobia and GAD
- Trauma and stressor-related disorders including PTSD
- Obsessive-compulsive and related disorders, including OCD
- Mood disorders, including unipolar, bipolar and persistent depressive disorder
- Psychotic disorders, including schizophrenia spectrum and other psychotic disorders

At least one patient per category for year is suggested (two years is preferred):

- Co-morbid anxiety and depression
- Co-morbid substance use disorder and psychiatric disorder

- Eating Disorder
- Geriatric Depression
- Neurocognitive disorders
- Neurodevelopmental disorders
- Medically ill patients with psychiatric disorders
- Personality Disorders
- Sexual Dysfunction

At least 2-3 of integrated and 2-3 of combined psychopharm-psychotherapy cases are suggested.

Finally, we strongly recommend that residents not only keep track of diagnoses of patients whom they have treated, but also the drug classes that they use. The aim is to make sure that they get exposure to some of the medications that are used much less frequently in a typical resident outpatient clinic (e.g. MAOIs, tricyclic antidepressants, typical antipsychotics, etc.)

For the PG 3 and PG 4 years (or whatever outpatient time blocks makes sense on a local level), a minimum of 8 - 12 hours per week should be devoted predominantly to psychopharmacology.

WHAT AND HOW TO TEACH

The Didactic Program

Each program will need to develop its own style and its own priorities for teaching a psychopharmacology curriculum based upon its resources, expertise, and available clinical arenas. The following are suggested formats for developing an optimal teaching curriculum and program. We have *not* delineated "priorities *vs.* the ideal" in the main curriculum, and we emphasize here that, traditionally, presentations and the Literature Review/Journal Club activities represent the "irreducible minimum" rather than the ideally complete program.

The question of which learning groups should be interdisciplinary must be answered, since many beginning residents are reluctant to reveal their limited knowledge of psychopharmacology in front of nurses and other non-M.D. personnel. Clearly, psychopharmacology training for psychiatrists must be geared toward a more comprehensive knowledge base than for other, non-psychiatrist disciplines over the course of the residency. Therefore, a decision as to the level at which to form interdisciplinary training groups is best made at the local level and should be explicitly considered by most programs.

The Presentation Program

The psychopharmacology presentation program includes:

1. Basic, advanced, and novel use of psychotropics
2. Integration with other treatment modalities
3. Drug mechanisms and pathophysiology
4. Rationale for treatment choices

Organization of Courses & Lectures

Ideally, we view the didactic presentations as being taught at three different levels:

- A **crash course** taught in the PG 1 year or in the summer of the PG 2 year (for residencies with full PG 1 year of medicine and neurology). This course would stress the basics of inpatient and emergency room psychiatry, emphasizing safety and drug interactions in

particular. Careful attention must be paid to these lectures since they may form the basis for the developing psychiatrist's future clinical practice. In addition, these courses often integrate psychiatric residents into psychiatric training in contrast to large parts of the PG 1 year devoted to medicine and neurology training.

- A **basic course** with a full review of the psychopharmacologic agents and disorder-specific topics to be presented in the PG 2 and/or PG 3 year. Psychopathology should be folded-in to this course.
- **Advanced courses** for residents in the PG 3 year and advanced neuroscience courses in the PG 3 or 4 year. Some topics from the PG 2 year (for example, depression or schizophrenia) can be repeated on a more advanced level.

In addition to what is listed for the presentation topics in the first and second PGY years, emphasis should be placed on the practical implementation of medications as that appears to be the first thing that residents ask their supervisors about (e.g., dosing schedules for fluoxetine, or how often to measure TSH during lithium treatment).

Special Considerations Related to Presentations

First, it should be emphasized that, in addition to the presentations, various components (see below) taught sequentially during the four years of training should be provided, as should supervision throughout each of the four years.

A presentation series is obviously a useful way of conveying up-to-date scientific knowledge. However, it is important to emphasize that, for resident training, presentations alone are not sufficient. Issues of lack of "absorption and retention" of presentation material suggest that, whenever possible, presentations should be accompanied by seminars, relevant, clinically-oriented (or otherwise appropriate) journal articles, case examples, and textbook reading. Small-group or individual supervision and case-conference methods of teaching are necessary for adequate development of the requisite clinical skills for the psychiatrist-in-training.

The core presentations, being fully adaptable to the program's needs, can provide the background for other learning modalities such as problem-based learning or other alternative learning

techniques. When seminars accompany presentations, it is strongly recommended that seminar leaders provide an opportunity for questions and answers, during and/or after a specific presentation (at least 15 minutes for a one-hour lecture). A common faculty mistake is for the lecturer to talk for the full hour – a practice that can be interrupted by a "course coordinator" or even an assertive student in order to allow adequate interaction with the speaker. The purpose is to both consolidate learning and to encourage residents to ask the most basic questions in the protective setting of the seminar.

Professor Steven Garlow at Emory University suggests an alternative to traditional teaching using slides (personal communication, 12/13/06). The way he teaches residents, usually for a group of maybe 8-12 total, is to use a white board and markers and to draw residents into the process by asking their ideas, approach, etc. He believes it is more engaging for the residents, more interesting for the faculty facilitator and they end up remembering more than if they passively sat and watched PowerPoint slides go by. Two teaching points he advocates for resident and medical student clinical teaching which should be at an advanced level are: 1) teach without slides or audiovisuals, and with just a marker board, markers, and enthusiasm, and 2) make it Socratic with questions and responses to bring everyone into the discussion.

Other methods for increasing the interactiveness of the teaching session can include using small group teaching; questioning the audience throughout the session; utilization of short multiple choice quizzes (MCQ) with/without audience response systems or teams and use of clinical cases. At Univ. of Massachusetts Medical School, a successful strategy has been to create teams (which can become competitive and fun) at the beginning of the session and use either a series of MCQs (with complex answer options) using flashing buzzers (can be purchased online) or a variety of phone apps which make a variety of sounds/alerts. End of the year quiz shows use the bank of MCQs from the year and are formatted using online available Jeopardy®-style PowerPoint or Cash Cab®-style games with sound. Throughout the year teaching session formats are varied and although one academic psychopharmacologist directs and facilitates most of the teaching for the PGI and II residents, faculty with research/clinical expertise in select areas serve as guest co-facilitators, so there is continuity throughout the year with the main course director and variety in teaching style and format. The psychopharmacology course, whenever possible, is organized to

integrate topic-wise with other learning activities, e.g. weekly Grand Rounds presentations or other seminar series and essentials of neuroscience are integrated throughout the course to link with more in-depth neuroscience training offered in the program.

Teaching of psychopharmacology should be supplemented by parallel teaching of neuroscience, clinical diagnosis, psychotherapy and other relevant treatment modalities. (These latter subjects may not necessarily be within the same course series.)

Because of ever-increasing demands on both trainee and faculty time, it can be helpful to develop an "updateable" electronic library of presentations on clinical (and if available, basic) psychopharmacology. These electronic resources should be available for residents who, because of clinical duties, must occasionally miss the scheduled didactic/classroom session. Remember, though, the passive experience of listening to and/or watching electronic resources is not optimal for learning. Interaction with experts and the opportunity to ask questions about any aspect of the material being presented is essential.

One option with which to supplement the presentations is to create a physical (e.g. binder) or electronic resource that contains the outlines of sessions, reading lists, a few core papers in each of the major areas of psychopharmacology (antidepressants, benzodiazepines, antipsychotics, mood stabilizers, etc.) and internet resources for further learning. In this way, information is easily and reliably retrieved and acquired by the trainee.

Finally, teaching sessions should include treatment algorithms, particularly in the early stages of training. They are useful both as learning tools (integrating and prioritizing relevant literature to a clinical treatment plan) and as a basic treatment guide for residents. Ongoing projects to develop working treatment algorithms continue, but many good algorithms are available currently (see below, Appendix G, see our list on pages 9 and algorithms in Volume II).

Issues, Concepts, and a Template

In this section, we present a list of issues, concepts and topics that will be helpful in developing a teaching session series. Suggested introductory themes are delineated. Both the *issues* and the *topics* are also appropriate for consideration in the more mentorship and supervisory forms of

teaching psychopharmacology, such as in psychopharmacology case conferences or in specialty clinic settings.

In addition to using the outlines as guides in determining the content of teaching sessions, the outlines may be helpful in assisting the responsible faculty in preparing a series of slides to use with the presentations.

Most importantly, we have included a few 'traveling' lecture outlines, which may be useful in organizing a lecture series for residents. The lecture outlines included are representative, rather than "model", outlines in the sense that they are not to be considered flawless. It is hoped that they will offer useful guidelines for the preparation of similar outlines in local psychopharmacology programs and on other topics.

The level of the course, i.e., *crash, basic,* or *advanced*, should determine which of the following to include. In general, crash course goals are limited to the following:

- Differential diagnosis (if not taught elsewhere)
- Determination of need or non-need for psychopharmacological treatment
- Rapid assimilation of basic uses of psychopharmacological agents
- Rational and safe drug treatment
- Drug-drug interactions
- Practical and efficient assessment of the effects of treatment including ECT.

Table 1 suggests the general issues and concepts to be covered in a presentation about a class of drugs.

Table 2 presents a template for each presentation, outlining the issues to be covered (which should be modified depending on the particular topic). Topics most appropriate for the first-year resident (who must quickly master the use of psychotropic agents) are shown in *italics*; the other topics should be presented later in the curriculum. Such presentations may occur within the context of a crash course offered in a resident's first year of psychiatry training. A crash course might cover psychopharmacologic treatment issues by DSM diagnosis (i.e., stabilization and treatment of patients with known diagnoses with antipsychotics, antidepressants, mood stabilizers, benzodiazepines, etc.) — emphasizing indications, contraindications, dose regimens, including

route of administration and side effects.

Given the rapidity with which patients are making the transition to partial care after a short hospital stay, often before a clear diagnostic picture has been achieved, the crash course should also include evaluation and treatment strategies for patients with serious symptoms that require acute treatment before a full diagnosis can be developed (e.g., unspecified psychosis in acutely ill, hospitalized, involuntary patients).

Table 1: General Issues and Concepts for Each Class of Drugs

- *Treatment based on different diagnostic considerations (differential diagnosis may be taught elsewhere)*
- *Differentiating response to a drug from symptoms of the illness*
- *Familiarity and competence in using the most frequently prescribed psychoactive medications*
- *Diagnostic utility of drug-free observation period*
- *Treatment adherence*
- *Therapeutic trial concept: dose, duration, documentation*
- *Evaluation of effects: target symptoms; clinical ratings scales*
- *Mechanism of action*
- *Dosing practices: starting low, increasing to a reasonable level*
- *Management of acute side effects*
- Dose-response relationships
- Blood levels: practical uses, misuses
- Placebo effects
- Management of side effects during long-term treatment

*Note: Topics in *italics* are most appropriate for first-year residents

Other than for the above, we have not included specifics on what material should be learned in each year, because the order of presentation is dependent on local residency program conditions, such as whether residents start psychiatry on inpatient, outpatient, or emergency room settings, sequencing of other curricula, etc. Lectures given in the second half of PG 2 or in the PG 3 year will repeat most or all of this material in greater depth, after the resident has had a greater amount

of integrated clinical experience.

In general, the issue of diagnosis is presumed to be detailed in other forums, although teachers may be performing more than one role in training — the other role will overlap biological treatment, the specific agenda here.

Table 2: Template for Teaching Sessions

•Proposed mechanisms of action of neuroactive agents	•*Side effects (CNS, metabolic, renal, endocrinologic and dermatologic, peripheral autonomic, plus cardiovascular ECG effects)*
•*Basic pharmacologic issues (pharmacokinetics issues, physiologic and pharmacodynamic effects, modes of administration, timing of dosages for analytic purposes, simplifying therapeutic regimens to maximize compliance*	•*Medical and laboratory work up needed to use a given drug (e.g. baseline thyroid and renal data prior to lithium, etc.)*
•Predictors of response	•Drug discontinuation effects (cholinergic rebound, SSRI discontinuation syndromes, etc.)
•Diagnostic issues: non-equivalence of drug response and diagnosis due to broad efficacy of many agents in current use	•Understanding and differentiating acute, continuation, and maintenance phase treatment strategies
•Relative efficacy of drugs used with a diagnostic category and/or in related or complementary classes versus placebo (for example, SSRIs vs. TCAs vs. MAOIs in depression)	•Strategies for evaluating and approaching the treatment-resistant and partially responsive patient within each diagnostic category
•*Age-related issues (child, geriatric, etc.) Both pharmacokinetics and pharmacodynamic parameters should be included*	•Training in the rational use of combined medication and specific behavioral, cognitive behavioral treatments, and/or psychosocial treatments
•*Drug-drug interactions (psychotropic-psychotropic, medical-psychotropic, OTC, etc.)*	•*Overdose signs, symptoms, and treatments*
	•Misuse (including *abuse/dependency) potential of prescribed psychopharmacologic agents*
•Drug combination therapies	•*Withdrawal syndromes (sedative-hypnotic, opioid, others)*

*Note: Topics in *italics* are most appropriate for PG I & II residents

Specific Lecture Topics

Tables 3 through 8 present a series of topics that should be included in a psychopharmacology teaching series. The tables are organized by diagnoses. Because educational needs vary from program to program, we recommend that program coordinators tailor the topics to their own programs. A good first step would be to give specific information about a few agents in each class of drug (including tips for use in specific situations). First-year residents do not need to learn about every single agent in each class.

Table 3: Antipsychotics

• *Old and new antipsychotics- indications, workup and medical monitoring for clozapine*	•*Neuroleptic malignant syndrome*
	•*Tardive dyskinesia and metabolic syndromes*
•*Antiparkinsonian agents (include simple but useful models like DA/ACH interplay to facilitate early use)*	•Acute dystonic reactions and treatment
	•Treatment resistant schizophrenia
•*Long-acting antipsychotics*	•Maintenance strategies
•Non-antipsychotic adjunctive agents (Anticonvulsant)	•Augmentation strategies
	•Strategies for mid and long-term treatment

*Note: Topics in *italics* are most appropriate for PG I & II residents

Table 4: Antidepressants and Mood Stabilizers	
Antidepressants •*SSRIs and SNRIs* •*Tricyclic antidepressants (one or two)* •Monoamine oxidase inhibitors (MAOIs) •Other antidepressants (bupropion, trazodone, nefazodone, mirtazapine, vilazadone, levomilnacipran, vortioxetine) •Psychostimulants •Augmentation strategies for resistant depression (lithium, T3, bupropion, modafinil) •Combining antidepressants •*ECT – indications, efficacy, safety, interactions with drugs* •Medical workup: informed consent •VNS and TMS for Treatment Resistant Depression •Light therapy for Seasonal Affective Disorder •Maintenance strategies	**Mood Stabilizers** •*Lithium* •*Carbamazepine* •*Sodium Valproate* •*Lamotrigine* •*New Anticonvulsants* •*Combinations of mood stabilizers* •Atypical antipsychotic drugs •Others, including ECT and calcium channel blockers •Resistant mania strategies •Treatment algorithms

*Note: Topics in *italics* are most appropriate for PG I & II residents

Table 5: Anti-Anxiety Agents and Hypnotics	
Anxiety Disorders**	**Hypnotics**
•*SSRIs, SNRIs*	•Benzodiazepines
•*Tricyclic antidepressants*	•Other sedative-hypnotics
•*MAOIs*	•Non-benzodiazepine sedative hypnotics: zolpidem, others
•*Benzodiazepines*	•*Melatonin receptor agonist: ramelteon*
•*Azapirones, e.g. buspirone*	•Antidepressants (trazodone, doxepin)
•*When should antipsychotic medications be used for treating anxiety?*	•Using sedative adverse effects of medications prescribed for other indications (e.g. quetiapine as a sedating mood stabilizer or mirtazapine as a sedating antidepressant)
•Beta Blockers	
•Others agents (e.g., trazodone for GAD, etc.)	
•Resistant anxiety disorders: treatment strategies	

*Note: Topics in *italics* are most appropriate for PG 1 & 2 residents

**Specific disorders should be presented, i.e., panic disorder, generalized anxiety disorder, social phobia, obsessive compulsive disorder, PTSD, acute stress disorder, sexual dysfunction/dysphoria, etc. Agents should be presented as they apply to specific disorders or several disorders.

Table 6: Psychopharmacology for the Medically Ill and for Geriatric Patients	
Medically Ill	**Geriatric Patients**
•*Use of psychotropic drugs in the medically ill*	•Agents used for neurocognitive disorders
•*Iatrogenic: drug-induced syndromes*	•Late life mood disorders
•*Drug-drug interactions; ICU treatment considerations, etc.*	•Differential pharmacodynamics and pharmacokinetics in the elderly
•*Drug adverse effects*	•Iatrogenic syndromes (focus on drug-induced syndromes)
•Acute withdrawal and detoxification	•Drug-drug interactions
•Management of delirium and acute agitation	•Drug adverse effects
	•ECT in the elderly
	•Sensitivity to develop delirium; treatment
	•Overlap of depression and neurocognitive disorder presentations

*Note: Topics in *italics* are most appropriate for PG I & II residents

Table 7: Substance Use

Substance Use

- Dual diagnosing; importance of recognition, pitfalls
- Discrimination of co-morbid psychiatric disorders from abstinence syndromes

Alcohol

- *Alcohol use and withdrawal management; protocols with and without drug treatment*
  drug treatment
- Post-alcohol withdrawal management (naltrexone, disulfiram, acamprosate, long-term management and treatment of co-morbid disorders)

Benzodiazepines and other sedative-hypnotics

- *Benzodiazepine and other sedative-hypnotic dependence, and withdrawal management: protocols with and without drug treatment*

Cocaine and Derivatives

- *Cocaine use and detoxification (bromocriptine, pergolide, amantadine)*
- *Discrimination of co-morbid psychiatric disorders from abstinence syndrome*
- Post detoxification management/craving (desipramine, buprenorphine, anticonvulsants)
- Long term management and treatment of co-morbid disorders
- Other CNS stimulant abuse

Opioids

- *Opioid withdrawal management (clonidine, naltrexone, buprenorphine)*
- *Discrimination of co-morbid psychiatric disorders from abstinence syndrome*
- Methadone maintenance, buprenorphine maintenance

- **Inhalants**
- **Cannabis**

Common Co-morbid Psychiatric and Substance-Use Disorders

*Note: Topics in *italics* are most appropriate for PG I & II residents

Table 8: Psychopharmacology of Aggression, AADD, Eating Disorders, and Personality Disorders

Aggression	**Eating Disorders**
•***Anticonvulsants***	•SSRIs
•***Lithium***	•Tricyclic antidepressants
•***Beta Blockers***	•Monoamine oxidase inhibitors
•***Antipsychotics***	•Cyproheptadine
Adult Attention Deficit Disorder (AADD)	•Atypical antipsychotics
•Methylphenidate	**Drug Treatment of Personality Disorders**
•Amphetamine	•Avoidant personality disorder
•Clonidine, Guanfacine	•Antisocial personality disorder
•Others (bupropion, tricyclic antidepressants, atomoxetine)	•Borderline personality disorder
•Schizotypical personality disorder (guanfacine)	

*Note: Topics in *italics* are most appropriate for PG I & II residents

In addition to the teaching session topics in Tables 3-8, we also suggest an overview lecture on psychometric rating scales, as well as on physical and laboratory examinations. We believe in incorporating the reliable assessment of target symptoms and outcome into routine clinical practice, because it is associated with better clinical outcomes and is also becoming increasingly important in the current climate demanding outcome justification. Thus, rating scales should be introduced early and residents should learn to use the relevant assessments. They are nearly cost-free and are as sensitive and relevant as an EKG, CBC, or V/Q scans. Appendix A includes both selected rating scales, as well as a guide to writing progress notes.

For this edition, we emphasize that psychiatrists are now required to build into their clinical practices many procedures inherent in primary care or internal medicine practices. This is because of obvious safety issues associated with the medications we prescribe – for example, metabolic issues associated with antipsychotics or mood stabilizers require weighing the patients regularly.

Residents should be comfortable in routinely conducting the following physical examinations and laboratory evaluations:

- A complete physical examination
- Brief neurological exam and AIMS examination
- Orthostatic blood pressure measurements
- Height and weight for Body Mass Index calculation
- Thyroid function laboratory tests
- Fasting lipid and cholesterol laboratory tests
- Renal, hepatic, hematologic, and other appropriate blood chemistry measurements relevant to a specific patient's pharmacotherapy

All patients should have a documented, recently completed physical exam, or receive one from the treating psychiatrist. Note that a recent physical examination does not relieve the psychiatrist of responsibility for evaluating possible medical problems complicating or presenting as psychiatric illness.

We also suggest that clinically relevant, neurobiological correlates of psychiatric disorders as they pertain to genetic, biochemical, circadian, and stress related and environmental-related treatments

should be included in lectures on the following topics:

- Mood disorders - bipolar, unipolar
- Schizophrenia spectrum and other psychotic disorders
- Substance use disorders/dual diagnosis
- Panic disorder/agoraphobia
- Social anxiety disorder
- Obsessive-compulsive disorder and OCD spectrum
- Post-traumatic stress disorders
- Eating disorders
- Attention deficit disorder
- Personality disorder
- Neurocognitive disorders
- Other (somatic symptom disorders, impulse control, aggression)
- Sleep disorders

Two neuroscience presentations can be found in our "optional lectures" entitled, "Neurobiology of Psychiatric Illness" by Dr. Solvason and "Basic Neuroscience" by Dr. Stahl, plus one neuroscience lecture for child-adolescent psychiatry by Dr. Pavalalari

Teaching Sessions on Psychosocial Topics

The psychosocial aspects of psychopharmacology — combining and integrating psychopharmacotherapy with other treatment modalities such as ECT and individual, family, and group psychotherapies — are crucial to practicing psychopharmacology today. A lecture on this topic is mandatory and is included in our Advanced Course series.

Table 9 presents areas to be covered in a lecture about patient and family education, as well as the psychosocial aspects of psychopharmacology. These topics should be covered early in the course, at least briefly, and revisited each year as these will help reduce poor outcomes due to poor adherence or non-adherence. Appropriate referrals to local and national patient support groups, such as NAMI, NMHA, DBSA (formerly NDMDA), and others adds to psychoeducation and general support.

Table 9: Psychosocial Aspects of Psychopharmacology

The Psychosociology of Prescribing •Influence of social status •Age •Gender •Cultural **Patient Education** •Why to use drugs: disorders and target symptoms •Why to change doses and what to do about missed doses •Why to continue to use medications and how to be on medication •Drug effects and side effects •Drug adherence •Patient support groups and advocacy	**Family Education** •Educational efforts aimed at family support •Education about illness •The role of family in maximizing adherence •Patient advocacy groups locally and nationally •How the patient's illness affects the family •How the family affects the illness of the patient •Minimizing bi-directional blame **Both Patient and Family Education** •Provide support in dealing with stressors as they come up and to clarify myths and misconceptions regarding psychotropic medications •To incorporate principles of chronic disease management

The textbook, Couples & Family Therapy (Glick ID, Rait D, Haru H & Ascher M: 2014, Fifth Edition, John Wiley London, UK) places a strong emphasis on combining family intervention with medication and psychoeducation, and, as such, is a useful teaching resource for psychopharmacology courses. In addition, a very useful resource is Heru and Drury's Working with Families of Psychiatric Inpatients. A Guide for Clinicians Johns Hopkins University Press, 2007. It addresses many clinical concerns in dealing with families of inpatients. Finally, Keitner, Haru, and Glick have written a text on family intervention with an emphasis on working with families who have a family member on medication (Keitner G, Haru A, Glick ID, Clinical Manual of Couples and Family Therapy, American Psychiatric Press, Inc., 2010).

Literature Review Seminar

Conducting a Literature Review Seminar or Journal Club in the PG4 year, or preferably throughout all four years of residency training, is recommended. Ideally, the literature review process and the teaching session series should be integrated, so that the literature read is directly related to the session to be presented, as well as supplemented by primary case examples. In the literature seminars, emphasis should be placed on specific teaching directed toward the critical reading of psychopharmacologic literature. This is a crucial aspect of training, since this will be a significant source of continuing medical education about psychopharmacology.

An important aspect of any journal club is the development of the ability to critique scientific articles. In one program, excellent and flawed articles on psychopharmacology subjects are presented. Some training, albeit limited, on research design is provided within the Didactic Lecture Series. As part of this endeavor, residents should be encouraged to understand the basics of statistics — both in theory and through the use of examples. While this may be difficult to "sell" to some residents, the need – and the understanding of the need - to evaluate the data in the literature is critical to good clinical practice.

In order for residents to learn critical assessment of EBM, they need to learn strengths, weaknesses, and pitfalls of meta-analyses and basic statistical tools such as number needed to treat (NNT), Confidence Levels, Effect Size, etc. At least a few hours of the PG 2 and PG 3 year should be

dedicated to teaching statistical and research design. As more residents have become computer literate, the concept of using a laptop for statistical teaching (as well as record-keeping and completing rating scales for patients) has become more and more routine.

Each resident should get hands-on experience performing critical evaluation of articles, with feedback from peers and a senior psychopharmacologist. We have included in our "optional" lecture list – a lecture by Eric Peselow on how to evaluate the research literature. The rationale for this exercise is that self-directed learning is how most of these individuals will acquire their CME credits during their professional lives. Under even the most modest circumstances, residents can use the simple checklist presented in Table 10 to ensure that they include the most essential criteria.

Critical literature skills can be taught using a small group workshop format where PY1-4 residents are given an article at the time of the workgroup and then are split into teams of 2-3 residents, depending on the total size of the class. In teams, residents complete a critical appraisal task assigned to them over a period of 10 minutes, and then present their answer/findings to the group at the end of the 10 minutes, each team presenting their findings. Examples of appraisal tasks can include examination of: subject selection, randomization, data analysis plan and other critiques of validity (see Table 10). During the task, the facilitator and a senior resident can be available to help teams find the "answer" to their task and point them towards electronic resources focused on EBM and critical appraisal. The second part of the session can focus on measures of effect size followed by a larger interactive discussion regarding what the residents think about the article and if it would change their clinical practice.

Sessions with a biomedical librarian on maximizing use of the library and computer search engines can be useful, especially if integrated with case based learning sessions requiring independent study and literature searches.

Table 10: Checklist of Criteria for the Critique of Studies	
Study Designs	**Attrition**
Cross sectional better than longitudinal	Adverse effects discontinuation
Prospective better than retrospective	Symptomatic worsening discontinuation
Controlled better than uncontrolled	Inefficacy discontinuation
Blinded better than open	
Placebo better than active controls	**Statistical Tests**
Randomized better than nonrandomized	p-value
	sensitivity, specificity
Study Population	power
Sample size	effect size
Entry criteria	number needed to treat
Exclusion criteria	
Efficacy vs. effectiveness samples	**Outcome measures**
	Importance of primary hypothesis vs.
Compliance Bias	secondary hypothesis vs. post-hoc analysis
Participant compliance	Multiple comparison statistical corrections
Investigator compliance	Response vs. remission rates
	Survival curves
Controls	Last observation vs. observed cases vs. intent
Parallel groups	to treat analyses
Internal controls	
Cross-over studies	**Publication bias toward positive studies**

In some programs, the journal club and a guest lecturer series are linked. Residents are asked to read selected papers of an invited lecturer. After the lecture, they are encouraged to critique the papers, as well as to offer questions and comments on the lecturer his or herself. In fact, residents are encouraged to ask *controversial* questions and to question assumptions underlying the presentation. Obviously, such a format should involve a pre-orientation of the lecturer to look upon the exercise as a training attempt rather than as possibly being a hostile attack. Finally, a program should not forget to look within its own ranks for visiting-lecture psychopharmacologists and biological psychiatrists.

While psychiatric educators may not agree unanimously that evaluating guest lecturers' scientific papers is part of the *core* of a psychopharmacology curriculum, such exercises provide a valuable learning tool for residents. Whether they are incorporated into a freestanding journal club or are introduced as separate seminars, we recommend that such exercises be included in the curriculum.

If it is true that "half of what we learn today will be proven wrong in the future, and we don't know which half!" then residents now will need the tools to evaluate much new research in the future.

Case Conference

The case conference experience should be offered in all years of psychiatric residency training. Case conferences combine clinical practice and scientific information in a practical manner that is at the heart of clinical psychopharmacology teaching. Patients are typically selected because of problems with their treatment, unusual aspects of their clinical presentations, or because they illustrate a particular aspect of psychopharmacology. The patient is presented formally to the psychopharmacologist with an emphasis on past psychopharmacological or biological treatment and other relevant clinical variables. The patient is interviewed by the resident, faculty, or both (interviews by expert clinicians can be very useful as a modeling tool), and the case is discussed from five points of view:

· Diagnosis and differential diagnosis

· Review of prior psychopharmacological treatment

· Current reasoning for use of medications
· Selection of drug and dose and/or ECT

· Integration of the treatment from psychotherapeutic, psychosocial, and psychopharmacological perspectives.

It is important to allocate enough time to discuss a case so that there is an opportunity to raise all relevant psychopharmacology questions. Our experience indicates that a discussant will often spend time talking about other salient patient information, occasionally at the expense of the training goals. Succinct references to relevant psychosocial or medical factors should be made in the context of *goal-oriented* teaching of psychopharmacology. Within this case conference, basic psychopharmacology principles can be discussed relative to actual patient care and specific psychopharmacology principles can be developed. Side effects of long-term treatment can also be discussed.

Follow-up discussions of patients who are presented are invaluable. Such follow-up conferences

are most useful after a hiatus of an appropriate length to review the effects of the recommendations made, thus providing invaluable feedback to both the teacher and the residents. Another didactic technique is the implementation of a clinical psychopharmacology case conference to examine the integration of pharmacotherapy, psychoeducation, and specific psychotherapies. In this setting, a case that illustrates the need for psychopharmacological interventions and for psychotherapy would be presented and then followed longitudinally. Videotapes or live interviews can be utilized to focus on the psychotherapy - psychopharmacology interface. For example, such a seminar might focus on psychotherapeutic methods for enhancing medication adherence, techniques for getting informed consent, techniques for exploring the impact on a patient of receiving both medication and psychosocial therapy. Issues of how much of a therapeutic session should be focused on medication taking versus on intrapsychic, interpersonal, and family issues or other topics could include: how to elicit material that will assist in the selection of particular medications in atypical cases; how to explain the reasons for pharmacotherapy to the patient, how to maximize the placebo response, psychotherapeutic techniques during the initial period of pharmacotherapy, and psychotherapeutic approaches during maintenance treatment.

Of course, integration with journal club topics magnifies the learning potential.

Computers and Psychopharmacology

Clearly, computer literacy is critical for a trainee. Websites for much of this information seem to suffer from a lack of permanence, and some from a lack of scientific reliability. Therefore, rather than supply you with a list of hundreds of specific URL's, we will give you the addresses of only a few of the current best. Also see Table 11.

General

- Psycom.net, www.psycom.net
- Psychopharm Info, www.psychopharminfo.com/index.html
- FDA Center for Drug Evaluation and Research (CEDR), www.fda.gov/cder/index.html
- Drug Interactions (U. of Indiana), medicine.iupui.edu/flockhart
- Medscape/WebMD Drug Interaction Checker, www.medscape.com/druginfo/druginterchecker?src=google

- Drugs.com, www.drugs.com
- PDR.net, http://www.pdr.net/

Research

- National Institute of Health (NIH), www.nih.gov
- National Institute of Mental Health (NIMH), www.nimh.nih.gov
- National Institute of Neurological Disorders & Stroke (NINDS), http://www.ninds.nih.gov/
- National Library of Medicine, www.ncbi.nlm.nih.gov/pubmed
- National Science Foundation, www.nsf.gov
- U.S. Census Bureau, www.census.gov
- Centers for Disease Control and Prevention (CDC), www.cdc.gov
- The Whole Brain Atlas, www.med.harvard.edu/AANLIB/home.html
- World Health Organization, www.who.int
- Alcohol Medical Scholars Program, www.alcoholmedicalscholars.org/home
- Mental Illness Research, Education, and Clinical Centers (MIRECC), http://www.mirecc.va.gov/

Organizations

- American Society of Clinical Psychopharmacology, www.ascpp.org
- American Association of Directors of Psychiatry Residency Training, www.aadprt.org
- American Psychiatric Association, www.psych.org
- National Alliance for the Mentally Ill (NAMI), www.nami.org
- Society of Biological Psychiatry, www.sobp.org
- Society of Neuroscience, www.sfn.org

Smartphones and related internet-ready devices

Smartphone and related handheld or notebook sized devices can be used to store and/or access valuable and current information on psychopharmacology to clinicians. Several excellent pharmacology databases exist which can be conveniently accessed, including the PDR and Epocrates.

Epocrates is the oldest, most widely available resource for prescribing information for physicians and is formatted for easy use in PDAs. This useful database provides information on all currently available medications and includes details on adult and pediatric dosing, contraindications and cautions, drug interactions, adverse reactions, cost information, metabolism and excretion, mechanism of action, pregnancy and lactation class, and space for personalized notes for each medication. A convenient medication search program allows easy access to the needed information. The Epocrates database is also regularly updated with FDA warnings and other important information for prescribers,. A free version of the basic database is available on www.epocrates.com.

Finally, The Concise Guide to Drug Interaction Principles for Medical Practice: Cytochrome P450s, UGTs, P-Glycoproteins, Second Edition, by Kelly L. Cozza, M.D., Scott C. Armstrong, M.D., FAP, FAPM, and Jessica Oesterheld, M.D., is available from American Psychiatric Publishing, Inc. (APPI). A pocket reference accompanies the book..

Supervision

Introduction

Professor Judith Bowen has written, "*Clinical teachers differ from clinicians in a fundamental way. They must simultaneously foster high-quality patient care and assess the clinical skills and reasoning of learners in order to promote their progress toward independence in the clinical setting. Clinical teachers must diagnose both the patient's clinical problem and the learner's ability and skill. To assess a learner's diagnostic reasoning strategies effectively, the teacher needs to consider how doctors learn to reason in the clinical environment.*

In the clinical setting, the student's recall of basic science knowledge from the classroom is often slow, awkward, or absent. Only after learners make new connections between their knowledge and specific clinical encounters can they also make strong connections between clinical features and the knowledge stored in memory.." -Judith L. Bowen, M.D. (Bowen JL. Educational Strategies to Promote Clinical Diagnostic Reasoning. *N Eng Jnl Med* 355:2217-2225, 2006)

Background

In 1996, Professors John Rush and Paul Mohl wrote a commentary (Rush J, Mohl PC, "The Top Ten Reasons for Psychopharmacology Supervision," *Academic Psychiatry* 20:238-240, 1996) which focused on a rationale for psychopharmacology supervision. Because of its importance and its relevance even now in 2014, we include it here in its entirety!

> *"Most psychiatry residency programs in the United States mandate several hours of weekly psychotherapy supervision. In addition, an advisor is required who supervises the overall management of cases not discussed with psychotherapy supervisors, specifically complex cases (e.g., psychiatric disorders in those with general medical conditions), diagnostic issues, overall patient management, psychopharmacological issues, and career development. The present training structure has a long-standing history. It was initially formulated when psychopharmacology had a very limited role. Few medications were available. Little was known about their indications. The following provides a rationale for revising the residency training structure to mandate at least one psychopharmacology supervisor per year per resident.*

Rationale

1. *Neuroscience was in its infancy in 1966. It now represents a complex body of rapidly evolving knowledge in the basic sciences, much of which is germane to clinical practice, but much of which is not well integrated into a routine residency training program.*

2. *There has been an explosion in both our knowledge of, and the clinical armamentarium for, the treatment of a wide range of psychiatric disorders. For example, in 1966, there were only 4 tricyclic antidepressants and 3 monoamine oxidase inhibitors. Today, there are a total of 32 antidepressants available in the United States.3. There is also a wide recognition of clinical indications for medication (e.g., minor depressions, certain personality disorders, concurrent medical and psychiatric conditions). To illustrate, men who meet criteria for major depression following myocardial infarction and are untreated or improperly treated have a 3.2 times greater risk of death 18 months post-infarction than similarly situated men without major depression or with adequately treated major depression. This recent finding argues for the treatment, but one must apply basic science, pharmacological, physiological, and other principals to obtain safe, optimal treatment.*

4. *There is a great body of knowledge about drug interactions, pharmacokinetics,*

and pharmacodynamics. For example, the Physicians' Desk Reference now mandates that relevant interactions and drug effects on the cytochrome P450 enzyme systems for each psychotropic compound is included. This knowledge must be applied in a clinically sensitive manner that combines theoretical with established in vivo interactions. We include considerable information on this problem elsewhere within this curriculum.

5. *The threshold of what constitutes adequate treatment has been raised. Initially, medications were used to control symptomatic episodes transiently (e.g., major depression, psychotic episodes) and to prepare patients for in-depth psychotherapy. Not only have the indications for medications been broadened (e.g., some with borderline personality disorders may respond to some medications), but there is now relatively clear evidence that the aim of psychopharmacology, in most cases, is complete symptomatic remission, rather than mere improvement whenever possible. This higher threshold for qualifying as success often requires more complex medication manipulation (e.g., sequencing treatments, or for tertiary-care psychiatrists, the use of several medications simultaneously, based on a science rationale). Psychiatric practice often demands that one go beyond that "hard" scientific evidence (e.g., that established by randomized controlled trials) to provide logically sequenced treatments that increase the chances of a complete symptomatic remission. These decisions require one to combine open trial information, case reports, and a basic knowledge of psychopharmacology, as well as key clinical information (e.g., the patient's prior responses and intolerances); knowledge of the biology of concurrent general medical conditions; and an understanding of drug interactions (e.g., patients taking other medications).*

6. *Practice often calls for using medications for "off label" indications (e.g., carbamazepine for manic-depressive disorder). This evolving body of clinical knowledge, now subject to revision on almost monthly basis, requires that such expertise be transferred as reliably and as quickly as possible to residents who will soon be practitioners, and simultaneously, to educate them in how to read, interpret, and synthesize various levels of evidence in the published literature.*

7. *The dramatic changes in the health care system in the United States also favor the need for psychopharmacology supervision. For example, patients seen by general psychiatrists are much more likely to have had, but not responded to, treatment by primary care practitioners. Thus, psychiatrists are seeing fewer "easy" cases and more cases that require them to integrate basic science and theoretical and clinical research knowledge.*

8. *Health care delivery systems are implementing outcome measures (e.g., symptoms and disability) to ensure adequate treatment. Which outcome measures to use and how to interpret their results is a topic for supervised discussion.*

9. *With this growth, there is an increasing demand for psychopharmacologists to balance efficiency with safety and ethical issues. The premature rush to "polypharmacy,"*

when either no medication or treatment with a single medication is indicated, may increase risk to patients and place residents in ethically compromising positions. The regular availability of a psychopharmacology supervisor allows the resident to deliver "state-of-the-artcare, provides the university with legally defensible resident practices, and more important, teaches residents how to combat, when needed, inappropriate system demands for the sake of patients (i.e., retain the patient as the priority when there are inappropriate forces, excessive "efficiency," and reduced treatment time) at work.

10. *Finally, the need to develop professional autonomy during residency, when delivery-system management decisions tend to relegate residents to observer roles, can be accomplished by providing frequent discussion and close supervision in psychopharmacological management."*

With the availability of new medications and the explosion of basic neuroscience and clinical research findings, the field has created an ever expanding body of knowledge that must be communicated accurately and effectively to residents as they develop the capacity for synthesizing this information and practice procedures that continue to protect patients. The transfer of this knowledge in a clinically sensitive, effective, and efficient manner provides the basis for psychopharmacology supervision (either individual or group formats) throughout all the years of residency training. The assumptions and implications of these suggestions deserve comment.

We are not recommending a particular method of supervision (e.g., one-on-one for a year as an example). It may well be far more efficient and more instructive to have group-based supervision, perhaps monthly, for several residents from diverse years (e.g., PG-2, 3, 4). It may be useful to rotate such supervision among different faculty members over time (e.g., those experts in anxiety, psychotic, or mood disorders). The issue we are raising is more generic and not dependent on the "how-to-do-it" question.

Some may argue that such expertise is not available in their departments. If this is so, a case can be made for the need to improve expertise. A brief two to four month sabbatical for one or more faculty members to acquire the information may be needed.

Finally, some may feel that providing such expertise may further "fracture the field." We believe that this fear is unfounded for two reasons. First, there are already *de facto* faculty experts in

psychopharmacology in many departments. Many of them also supervise psychotherapy, and many traditional psychotherapy supervisors now provide psychopharmacologic advice to the limit of their expertise. Our suggestion is to simplify, make explicit, formalize, and make available to all trainees what is available to some now (i.e., it's an evolution, not a revolution). Second, if these bodies of knowledge exist, and if they can be conveyed to all trainees effectively, then fractures (or at least fissures) now already within our field will be mended. Not to dispense this knowledge and experience evenly will only serve to widen these fissures.

Clinical Mentorial Teaching Using Selected Case Material

This form of teaching is modeled after individual or small-group psychotherapy supervision. Since the practice of psychopharmacology is learned by treating patients, dedicated and inspired supervision may be more educational than all other forms of teaching.

The focus of discussion should be on the clear cut effect and role of setting on the trainee. Not infrequently, a resident whose first exposure to psychiatry is on a busy inpatient unit may naturally develop a "give drugs first" attitude. Similarly, an anti-drug attitude may be more evident in the outpatient setting as trainees try their new skills. Undercutting the tendency to treat patients entirely by diagnosis, socioeconomic status, and location of treatment, should be a focus of supervision.

With beginning psychiatric trainees, the focus most commonly is on inpatient treatment with psychopharmacology supervision. Residents should meet regularly with psychopharmacologists (i.e., a senior psychopharmacologist or a clinical psychiatrist with some special expertise in psychopharmacology) and review individual patient treatment problems that illustrate the use of drug classes from the point of view of pharmacological treatment. For maximum informality, supervision should be given individually (one-on-one) or in a very small group (maximum 3-4 trainees) once a week. This is the time for the beginner to ask very simple questions without fear of embarrassment.

It is also a time when the trainee(s) and supervisor can see patients together, review treatment records, discuss philosophical decisions to use or not to use drugs, and read psychopharmacology

literature together if so desired.

In one model, three first-year residents on an acute impatient unit meet with a clinical psychopharmacologist to review cases on a weekly basis. Cases are presented when the residents are having specific problems, and are reviewed relative to the specific patient as well as to the broader issues involved in the class of drugs in question. An attempt is made to integrate psychopharmacological issues into the ongoing treatment of the patient, taking into account the patient's environmental circumstances (e.g., ability to pay for medication, transportation, family problems, etc.).

Advanced supervision, emphasizing psychopharmacology in outpatient settings — such as psychopharmacology clinics, general hospitals, community programs, schools, nursing homes, etc. — should be provided. Advanced supervision includes discussion of mechanisms of drug actions, pharmacokinetics, and research data as well as basic treatment.

One little used technique is the actual observation of a senior psychopharmacologist during an office visit, which provides valuable clinical pearls for trainees. Likewise, observation of the trainee by a senior psychopharmacologist (in a non-intimidating manner) is now mandatory and useful for trainees prior to graduation to ensure competence. This, of course, is what has always been done for psychotherapy supervision.

For programs without a full ECT treatment team to provide such training for residents, the principles and practice of ECT can be taught as part of the psychopharmacology curriculum. The most effective learning takes place during the actual administration of ECT. This bedside teaching and supervision, like medical and surgical clerkship and house-officer teaching, emphasizes learning through both observation and practice. Given the clear effectiveness of ECT treatment, programs in hospitals that do not provide this service should provide some mechanism for training in this indispensable modality — either by sending residents to programs that do provide this training, or by inviting experts to provide education about ECT. However, nothing can fully substitute for actual experience in the technique. The same is true of brain stimulation therapies.

Supervision in Psychopharmacology Clinics, Inpatient Units, and Emergency Rooms.

A considerable amount of psychopharmacology teaching can occur informally in the context of direct clinical care, with junior residents learning from more senior residents or front-line faculty, as in medical and surgical rotations. As we mentioned earlier, we suggest that, when possible, a senior resident be named Chief Resident in Psychopharmacology; this person's role will be to enhance the teaching of psychopharmacology within the context of patient care. He or she would provide consultation to various inpatient services for first or second-year residents, and would be supervised by the senior psychopharmacology faculty. As in the medical/surgical residency model, rounds are made and completion of the formal consultation is generated; an attending physician psychopharmacologist is present and the focus should be on problem patients.

In summary, residents should be provided with faculty supervision by individuals with expertise and an interest in psychopharmacology, as well as the skills to teach it to residents. Direct observation and practice of ECT can be taught as part of the psychopharmacology curriculum.

Off-Label Prescribing

The issue of off-label prescribing has assumed major importance in the last decade. A discussion of this issue is beyond the scope of this curriculum but Professor Steven Stahl has provided some excellent advice for trainees,

> *"The bottom line for the well-informed practitioner of psychopharmacology should be aware of the FDA labels for drugs, but should use drugs according to the standard of care, not according to the marketing of Pharma or the regulation of Pharma through the label. In fact, off-label uses of psychotropic drugs are perhaps the greater part of psychopharmacology practice, and appropriately so, when rational and based upon evidence of empiric clinical observations."*

And, of course, clinicians should be knowledgeable about the use of "maximum doses", not only the approved doses, which may be lower or higher than evidence-based doses. Problems occur when insurance companies or uninformed supervisors insist on using "PDR doses".

Reading Materials

Textbooks

Textbooks are the core references for most residents. In addition to standard psychiatric texts such as Kaplan and Sadock, the APA Textbook on Psychiatry, DSM-5, the APA Textbook of Neuropsychiatry, etc., psychopharmacology residents should become familiar with the basic psychopharmacology texts shown in Appendix B. Members of the committee have found the following two manuals particularly useful for residents in our programs: The Schatzberg et al Manual of Clinical Psychopharmacology, Seventh Edition and The Tayler et al The Maudsley Prescribing Guidelines, Eleventh Edition (see Appendix B for full references).

Journals and Newsletters

Introduction to the relevant psychopharmacological literature is important in the training of residents in psychopharmacology. A source for the literature review portion of the psychopharmacology curriculum is included in Tables 11 and 12, which provide a brief list of journals and newsletters. (A more extensive list appears in Appendix C.) These resources will be helpful in organizing a didactic series; many may also serve as reference material for psychiatric residents. In view of time considerations, these articles (and the derivatives obtained from their bibliographies) should be given to residents; however, a program of comprehensive reading of such reference sources is an alternative option.

Finally, we should mention Professor Steven Stahl's Neuroscience Education Institute as some training programs are using their materials, i.e., books, slides, etc. He also offers a fellowship and master's certification program.

Table 11: Journals

Journal of Clinical Psychopharmacology (C)
This journal has a strong clinical focus, publishing articles, reviews, letters, and case reports dealing almost exclusively with the clinical use of psychotropic drugs.
www.psychopharmacology.com

American Journal of Psychiatry (C)
This journal published a number of psychopharmacological articles. Especially timely and relevant are the brief reports and the clinical research reports. www.ajp.psychiatryonline.org

Neuropsychopharmacology (B)
This journal publishes high quality basic neuroscience papers and some clinical research papers.
http://www.nature.com/npp/index.html

Biological Psychiatry (B&C)
This journal publishes both clinical and basic articles
http://www.biologicalpsychiatryjournal.com/

International Journal of Neuropsychopharmacology (B)
This journal publishes high quality basic neuroscience papers and some clinical research papers.
http://journals.cambridge.org/action/displayJournal?jid=PNP

Schizophrenia Research (C)
This journal publishes a wide range schizophrenia research.
http://www.schres-journal.com/

World Psychiatry (C)
This is the official journal of the World Psychiatric Association.
http://www.wpanet.org/

Schizophrenia Bulletin (C)
Publishes a wide range of schizophrenia research.
http://schizophreniabulletin.oxfordjournals.org/

JAMA Psychiatry (C&B)
This journal often has psychopharmacological oriented reports.
http://archpsyc.ama-assn.org/

Journal of Clinical Psychiatry(C)
A general clinical psychiatry journal which publishes a variety of reviews and articles on the use of medications, as well as on general issues in psychiatry.
www.psychiatrist.com

British Journal of Psychiatry (C)
This journal usually has good medication-oriented articles.
http://bjp.rcpsych.org/

Annals of Clinical Psychiatry (C)
This journal includes overviews and articles on clinical psychopharmacology.
http://www.aacp.com

Journal of the American Medical Association (C)
Some of the most important clinical research studies, reviews are editorials found here.
http://jama.jamanetwork.com/journal.aspx

European Psychiatry (C)
This is the official journal of the European Psychiatric Association.
http://www.europsy-journal.com/

Bipolar Disorders (C)
Publishes a wide range of bipolar research
http://onlinelibrary.wiley.com/journal/10.1111/(ISSN)1399-5618

"C" = mostly clinical emphasis
"B" = mostly basic neuroscience

Table 12: Newsletters

ASCP Corner (C)
Published monthly, this column in the Journal of Clinical Psychiatry provides various reviews of topics relevant to clinical psychopharmacology.

Currents in Affective Disorders (C)
This monthly newsletter reviews/reports on the literature, as well as provides in-depth interviews with senior clinical psychopharmacologists, inquiring about both science and opinion. It also includes regular reminders of the trends in the literature from case reports, back referencing previously discussed articles. The newsletter also synthesizes current clinical issues regularly and is intended as an update for the busy clinician. Despite the title, it does not limit itself to mood disorders but covers the field of psychopharmacology broadly.

Brown University Psychopharmacology Update
This monthly advisory covers the burgeoning field of treating behavioral disorders with pharmacological agents. It is a convenient source for prescribing and non-prescribing professionals alike, providing news and consultation regarding drug interactions and the side effects of prescription medications.

Journal Watch Psychiatry (C)
A publication of the New England Journal of Medicine, this monthly publication summarizes recent articles and makes brief comments on them. It also contains reviews of a few general medicine articles in each issue.

"C" = Mostly clinical emphasis
"B" = mostly basic.

Biological Therapies in Psychiatry (C)
This is a monthly newsletter which comments on both content and implications of recent articles and reviews, often highlighting current controversies or advances in clinical psychopharmacology. The emphasis is synthesis of the accumulated knowledge, often referring back to previous issues in which the same topic has been addressed. It represents a good integration of data and opinion of the experienced editor or other authors. It is available in bound versions, which include useful referencing by topic to previous issues, allowing for a quick review of an area.

Lithium Information Center and Obsessive-Compulsive Information Center
James Jefferson, M.D. and John Greist, M.D. Senior Scientists at Healthcare Technology Systems, LLC, have many patient pamphlets on a variety of medications and conditions available at a low cost. This center also provides free information to clinicians from the voluminous literature on lithium, OCD, and much more.

Psychiatric Drug Alerts
A very popular newsletter with up-to-date information on medication effects.

Evidence-Based Mental Health (C)
A publication of Royal College of Psychiatrists in Britain, this quarterly magazine summarizes and critically reviews recent articles. It covers a broad range of issues related to prognosis, diagnosis, etiology, and therapeutics. Highly recommended.

Generally, a reading list may be derived from the recommended journals, as well as from Index Medicus and similar reference resources. A list of both classic articles and seminal new references should be compiled by the coordinator of each local program on an ongoing basis. One last tip: the Electronic Library CD ROM now available from the APA (http://psychiatryonline.org/) contains a series of useful journals: JAMA Psychiatry, American Journal of Psychiatry,

Psychosomatics, American Journal on Addictions, Psychiatric Services (previously Hospital and Community Psychiatry), Journal of The American Academy of Child and Adolescent Psychiatry, Journal of Neuropsychiatry and Clinical Neuroscience, Journal of Psychotherapy Practice and Research, and the American Journal of Geriatric Psychiatry.

Neuroscience Lecture Series

In some training programs — especially those with a major emphasis on recruitment and development of future psychiatric researchers — it is important to provide access to current information and research strategies that shape theories regarding the biological basis of neuropsychopharmacology. Such courses can be part of a biological psychiatry lecture series or be part linked to this clinical psychopharmacology series. An integrating approach might be, for example, to precede (or follow) a lecture on antipsychotic drugs by a lecture on the neurobiology of schizophrenia.

If a specific and separate intensive course in the neurobiology of psychiatric disorders is taught, one model would be to offer a primer course to acquaint the beginning resident with the relationship between neurobiology and drug therapy, followed by a neurobiology didactic series. Such a model gives the youngest resident an opportunity to develop a theoretical basis for psychopharmacological treatment of mental disorders.

An alternate possibility involves offering the PG 3 or PG 4 resident a neurobiology/neuroscience course in the later phases of training. Representative topics of such a series could include:

- Basic neurobiological principles (i.e., synaptic mechanisms, neurotransmitters, Neuromodulators, neuroanatomy and neurophysiology of neurobiological function, etc.)
- Neurotransmitters and Neuromodulators
- Overview of receptor functions
- Neurobiological models for specific psychiatric disorders
- Challenge studies: neuroendocrine, provocation, amine depletion, others
- Imaging studies
- Neurotropic signaling pathways

It is suggested that the above series consider supporting evidence from at least the following perspectives:

- Animal neurochemical data and models
- Animal pharmacological data
- Human neurochemical data
- Human clinical pharmacological data
- Imaging (animal and human)

Several lecture outlines relevant to neuroscience are included in the Lecture Modules.

Most importantly, Steve Stahl, M.D., a Clinical Professor at UCSD and Director of the Neuroscience Education Institute has developed a "tried and true" text as well as a series of lectures which are on a CD rom covering a variety of neuroscience topics. These include (for example): schizophrenia, depression, mood stabilizers. We recommend his material highly as an important resource in the teaching of neuroscience throughout any psychopharmacology program. Both text and CD's are clear, thoughtful, and up to date. They can be accessed at www.neiglobal.com.

Another resource under development is the National Neuroscience Curriculum Initiative, led by Co-Chairs, David Ross, Melissa Arbuckle and Michael Travis. The aim of NNCI is to "create, pilot, and disseminate a comprehensive set of shared resources that will help train psychiatrists to integrate a modern neuroscience perspective into every facet of their clinical work. This curriculum will be built on principles of adult learning, a cross-disciplinary orientation, and will be adaptable for use in any type of learning environment" (quote taken from http://www.nncionline.org/about-nnci/). High quality teaching resources are available from their website.

Psychopharmacology Units

Specific psychopharmacology treatment units can be created as subcomponents of outpatient psychiatry divisions and/or liaison-consultation units. Such units allow a focusing of expertise

and of thinking about psychopharmacological treatments. However, a drawback to the drug clinic concept is that it may fragment residents' thinking into a non-integrative view of the patient, and may be seen by others as a pill-pushing operation. Nevertheless, such units are useful in effectively focusing psychopharmacological teaching using the supervisory methods described earlier.

Ideally, a Psychopharmacology Unit would operate in parallel with a general outpatient clinic. This facilitates transition back and forth between the more psychotherapy-oriented outpatient training there and the psychopharmacology unit, which mirrors clinical practice, i.e., different models is used at different stages of treatment for a given patient. This model provides a system for teaching residents that patients usually need some aspects of both psychotherapy and pharmacotherapy and that the ratio varies over time and with the treatment setting.

We also recommend that patients be followed over a period of at least two years so that problems with treatment-emergent side effects, decisions regarding discontinuing medications, restarting them, and other relevant management issues are addressed to the greatest extent possible. Ideally, four year follow up could be achieved if the structure of the program allows this degree of continuity. It should be stressed that sufficient time must be given to residents for visits (i.e., 60-90 minutes for evaluations — sometimes more than a single visit is necessary; 30 minutes for follow-up evaluations).

Some experts suggest that a medication clinic within a strong specialty unit (e.g., mood disorders, schizophrenia, anxiety disorders) could provide a better in depth experience. This is likely to be more useful for senior residents who wish to gain specific expertise within a particular patient population. However, if the institution has multiple clinics which allow residents to spend time in each of several, over a sufficient period (1-2 years), a broad range of psychopharmacology training could be achieved.

Regardless of the actual setting, it is important to have supervisors physically present to see all new and returning patients (medical-legal and reimbursement problems are often also conveniently resolved in this way).

HOW TO EVALUATE

To understand whether a given clinical psychopharmacology program is achieving its teaching objectives and to point out areas of weakness in individual trainees, several standardized techniques are available to evaluate trainee competence before and after curriculum exposure. An optimal evaluation of a clinical psychopharmacology program should include:

- Pre- and post-training formal examinations
- Pre- and post-training reviews of the participants' charting patterns
- Regular written evaluations by psychopharmacology supervisors including live patient interviews
- Resident knowledge and skills evaluated during a *mock boards* type clinical examination at least three times during the residency.
- Evaluation of the program by the trainee.
- Board pass rates
- Post graduate surveys

Appendix E provides sample evaluation forms for 1) supervisors to evaluate residents, 2) residents to evaluate their supervisors, 3) their courses, and 4) their psychopharmacology program.

Formal Examination

We strongly believe a pre and post-test exam is needed. The pre-test can be given early in the PG-1 or -2 year, while the post-test can be given in the PG-3 year. We suggest:

- The psychopharmacology subsection from the PRITE exam, which provides comparison with national norms.
- The American Psychiatric Association PKSAP Exam (psychopharmacology component and selected questions from other sections).
- Teachers develop their own test questions and of course, use them. We are aware of the reluctance in graduate programs to test residents formally. We advocate pre and post course exams as a good way of motivating trainees to learn psychopharmacology.

Of course, no group of experts would agree with all of the answers, nor should this be construed as the only evaluation since clinical acumen may not be tested. Rather, the questions are used as an evaluation instrument and as a springboard for learning.

In the United Kingdom (UK), an objective structured clinical examination (OSCE) has replaced the individual patient assessment (IPA) for part 1 of the membership examination the Royal College of Psychiatrists (MRCPsych). Residents completed and evaluated an OSCE designed according to guidelines set by the Royal College of Psychiatrists. Those programs that wish to upgrade trainee evaluation may wish to contact the Royal College. (Ref: Sauer J, Hodges B, Santhouse A, Blackwood N. Academic Psychiatry 29:310-315, 2005). In this country, the ABPN has replaced the individual patient interview and assessment for its Part 2 examination, with 3 required in-training Clinical Skills Verification (CSV's) assessments. Written and audio-visual vignettes are now included in the single computerized certification exam. Examples of this new format can be found on the ABPN website (http://www.abpn.com/).

Charting Patterns

A trainee should be taught how to keep systematic, concise psychopharmacology records during training, so that this skill can be taken into practice. A global rating form to evaluate the charting patterns of each resident can be developed for assessing skills before and after training. (For an example of a chart note form, see the progress note contained in Appendix A, which incorporates the visit note with a CGI Severity and Improvement scale.)

The educational basis for this evaluating exercise is that psychiatrists often seem reluctant to maintain detailed written records. Presumably, the feeling is that the confidential relationship with the patient will be jeopardized (example: concern that if the records were requested by a third party payer and reveal that the patient had problems such as alcohol abuse or suicidal thoughts even if there was no evidence of real risk or intent, that could be used as a basis to deny coverage from a new carrier; some states do not hold these notes as confidential for psychiatrists, and they could be subpoenaed during a divorce/custody hearing to be used as evidence against the patient). While the thoughts, behavior, fantasies and other psychological phenomena of patients might pertain to confidences that might be embarrassing to patients if generally revealed, information about the

drugs they are taking, when they are being taken, how much has been ordered over what periods of time, and, some would argue, when there has been departure from the usual conservative practices of the PDR, must be well documented. Such information does not violate confidences and provides a continuing rationale for the medical aspects of care. In our present litigious era, the psychiatrist who does not maintain such records puts himself at great risk for legal action and at a great disadvantage in defending against any that may develop.

There are several recommended possibilities for charting suggestions:

- Flow charts for medications, including initial dose and regimen, changes in dosage, and plasma levels (if available).
- Clinical rating scales (clinician and patient rated) can be given to residents for help in assessing outcome and charting purposes. This is good clinical practice, and is especially useful for clinicians to use when evaluating progress (or lack of it) in infrequently seen or newly transferred patients. (See Appendix A for examples of rating scales we recommend).
- Side effects checklists, before starting and during treatment, can be a useful guide for the clinician in determining whether a medication is causing new problems, is making previous symptoms worse, is not related to these particular symptoms, and whether a change in treatment is indicated.

Of great interest is a proposal that recently emanated from Professor Donald Klein now at NYU. In fact, some programs are actually beginning to assess "skills in psychopharmacology" using student records to determine:

- How long were assessment and follow up sessions
- Distribution of number of drugs, doses, particulars of de novo medicines prescribed per session
- Distribution of lengths of treatment
- Frequency of follow up
- Request for former treatment records
- Number of patients seen per hour
- Use of clinical laboratory
- Contacts with family, etc.

In addition to the rating scales contained in Appendix A, the following publications contain useful tools:

- Rush AJ, et al: Handbook of Psychiatric Measures. Washington DC: American Psychiatric Press, Second Edition, 2008.

- Sajatovic M, Ramirez LF (2001): Rating Scales in Mental Health. Ohio, Lexi-Comp, Inc.
- Adult, Adolescent, and Child Symptom Inventories available from Checkmate Plus, www.checkmateplus.com

Although there is no form in this section that measures efficacy or adequacy of treatment, there actually has been one study by Rachel Dew and her colleagues which has studied adequate treatment using the "treatment history form". Dew et al found that "the time retained in treatment" is a major factor in treatment adequacy. (Ref: Dew RE, Kramer SI, McCall WV. Adequacy of antidepressant treatment by psychiatric residents: the antidepressant treatment history form as a possible assessment tool. Academic Psychiatry 29:283-288, 2005). Thus, attrition and appointment keeping adherence might be one feasible and simple measure of psychopharmacology competency to introduce into training programs.

Evaluation by Supervisor

We feel the best method to use to evaluate a trainee's ability to apply to clinical practice what is learned in didactic and other formal sessions is an evaluation by a psychopharmacology supervisor. Evaluation should be done at least yearly or every six months.

As we mentioned above the ABPN, Inc., will not be conducting live patient interviews as part of the Part II examination anymore. However, the training programs will be required to conduct three patient interview by residents in front of Board Certified psychiatrists. Each resident will be required to pass three of these interviews during his/her residency training. We recommend that each teaching program establish a pool of experience Board Certified psychiatrist to conduct this examination. In addition, we also recommend that beyond just performing the clinical oriented interview, this examination include discussion of treatment plan, with various treatment modalities, including psychopharmacological management.

Trainee Evaluation of Supervision and of the Program

Needless to say, trainee evaluation and feedback is essential for a viable program. Appendix E provides sample evaluation forms for 1) supervisors to evaluate residents, 2) residents to evaluate their supervisors, 3) their courses, and 4) their psychopharmacology program.

Accreditation Issues

Documentation of training in psychopharmacology should include the number of teachers, curriculum hours, and evaluation instruments, as well as evidence that at least one psychopharmacology teacher is on the Curriculum Committee of the residency program. Additionally, with implementation of the Milestone Project, ACGME requires documentation of competency and milestones attainment in psychopharmacology. Five competency domains under Patient Care and Medical Knowledge directly address milestones related to Psychopharmacology. These milestones assess skills and knowledge such as psychopharmacologic management in consideration of medical comorbidity; integrated use of psychopharmacology with psychotherapy; educating patients, monitoring for side effects and response, and appropriate titration. (Ref. The Psychiatry Milestone Project. Journal of Graduate Medical Education: March 2014, Vol. 6, No. 1s1, pp. 284-304)

Post-residency the American College of Psychiatrists has developed an assessment called Psychiatrists In-Practice Exam (PIPE) for practicing psychiatrists that includes some psychopharmacology. In addition, the American Psychiatric Association (APA) has developed "FOCUS", a CME journal accompanied by a self-assessment exam, which covers some psychopharmacology issues for the practicing physician.

Relevant Websites For Evaluation

Some training directors may want to consult the following websites as they set up an evaluation program:

AMA Guidelines for Interaction with Industry

www.ama-assn.org/ama/pub/category/11910.html

APA Ethics Guidelines

http://www.psychiatry.org/practice/ethics/resources-standards/ethics-resources-and-standards

FINAL PEARLS

Professionalism

Although we don't have a lecture on "professionalism," we believe it is crucial to the effective practice of psychopharmacology. "Professionalism is demonstrated through a foundation of clinical competence, communication skills, and ethical and legal understanding, upon which is built the aspiration to and wise application of the principles of professionalism: excellence, humanism, accountability, and altruism." Thus, "professionalism" denotes the standard of behavior that individual physicians are expected to meet as they provide their specific knowledge and skills to those who seek their counsel, and it is the basis of medicine's contract with society. (Ref. Kirk LM, Blank, LL. Professional Behavior – A Learner's Permit for Licensure. NEJM 353:2709, 2005).

These principles are applicable in all of medicine, but especially difficult in psychiatry for psychiatric residents both because of the cognitive lesions inherent in most psychiatric disorders and because of the problems inherent in working with family/significant others of patients with severe disorders. Therefore, each program must track each trainee as they go through the residency and provide personalized help if problems in this area arise.

Please note in this context, we have included, in the "optional lectures", a lecture on 1) interacting with industry, a problematic area for trainees and often for faculty 2) a lecture explaining how to "deconstruct drug company promotional materials," and 3) a lecture on the ethics of psychopharmacological practice.

Research in Psychopharmacology

As mentioned, we included a lecture on how to understand the research literature by the late Professor Eric Peselow. We also recommend an incisive editorial by Professor Richard Shader suggesting that "there are no simple solutions to complex problems." If something is "too good to be true," it usually is not true. (Shader RI: A blueberry cocktail helps with memory loss- too good to be true? J Clin Psychopharmacology 2014, 34:421-422). Appendix E: Details how to organize a course on psychiatric research for Residents.

PART III: CURRICULA FOR SPECIAL AREAS

CHILD & ADOLESCENT PSYCHOPHARMACOLOGY

Vishal Madaan, Editor

Over the past couple of decades, research in child and adolescent psychopharmacology has distinguished itself and continued to move in the fast track. Recent endeavors at improving diagnostics and providing evidence-based treatment options to the ailing child have led to outstanding research that includes large effectiveness studies as well as efficacy research in the pediatric population. With this expanding knowledge-base in psychopharmacology, both the child psychiatry resident and the instructor often struggle with what might be the best training model that would help with an optimal, learner-centered, clinically-oriented approach in pediatric psychopharmacology. In addition, child psychiatry fellowship programs are often small in size, and may not have the expertise or availability of a seasoned child and adolescent psychopharmacologist on site. While providing an updated source for the child psychiatry trainees and their faculty, the curriculum serves as an easy-to-use reference for pediatricians who often manage disruptive and emotional disorders among youth at a primary care level.

This section is an effort to not only provide the clinician and the resident with updated information, but also to provide psychopharmacology teachers with a wide variety of lectures to choose from and present. When compared to the previous edition, all the lectures have been thoroughly revised and updated to incorporate both DSM-5 changes and recent clinical research in child psychopharmacology. In addition, we have added a new lecture on neuropsychopharmacology basics that will help the readers with a quick review of the topic before launching themselves further in the curriculum. Our endeavor in this edition has been to include lectures from a variety of thought leaders and experts in the field of child and adolescent psychopharmacology and I am pleased to have successfully done that. I am hopeful that these lectures will expand the readers' academic repertoire and their ability to translate this information into their clinical practice.

This section on child and adolescent psychopharmacology incorporates clinical experience and practical wisdom into the research data presented, in an evidence-based manner. I personally thank all of the authors who contributed their lectures and look forward to receiving feedback from the readers.

Child and Adolescent Lecture Series

- Neuropsychopharmacology: Basics and Beyond--Mani Pavuluri, M.D., PhD
- Maintaining the Alliance in Modern Pediatric Pharmacotherapy Practice – Shashank V. Joshi, M.D.
- Using and Teaching Evidence-Based Medicine in Child Psychiatry – Vishal Madaan, M.D.
- Pediatric Psychopharmacology: General Principles – Shashank Joshi, M.D., Kiki Chang, M.D.
- Psychopharmacology of Autism – Christopher J. McDougle, M.D., Christopher J. Keary, M.D.
- ADHD: Assessment and Treatment Across the Lifespan – Shashank V. Joshi, M.D.
- Childhood Onset Schizophrenia: Evaluation and Treatment – Antonio Y. Hardan, M.D., Dustin Sanchez, M.D., Vishal Madaan, M.D.
- Antipsychotic Adverse Effects in Children and Adolescents – Christoph U. Correll, M.D.
- Emerging Issues in the Treatment of Impulsive Aggression in Children and Adolescents – Peter S. Jensen, M.D.
- An Overview of Pediatric Depression – Cynthia R. Pfeffer, M.D.
- The Use of Medications for Pediatric Bipolar Disorder – Kiki D. Chang, M.D.
- Assessment and Treatment of Childhood Anxiety Disorders – John Walkup, M.D.
- Childhood OCD – Vishal Madaan, M.D., Kate Fitzgerald, M.D.
- PTSD in Youth – Vishal Madaan, M.D., Venkata Kolli, MRCPsych
- Tourette's Disorder – Vishal Madaan, M.D., Isheeta Zalpuri, M.D.
- FDA Approved Medications in Child Psychiatry – Vishal Madaan, M.D., Boris Lorberg, M.D., Yana Turkowski, M.D.

Child and Adolescent Instruments and Rating Scales

For this edition, we include common, useful child/adult instruments and rating scales. The list is as follows:

- Girls: 2 to 18 Years Physical Growth
- Boys: 2 to 18 Years Physical Growth
- Boys: Head Circumference Graph
- Girls: Head Circumference Graph
- Monitoring of Side Effects Systems (MOSES)
- Stimulant Drugs Side Effects Rating Scale (BSEQ)
- Mini-Mental State Examination
- Parent's Questionnaire for ADHD
- Teacher's Questionnaire for ADHD
- ADHD Rating Scale IV - School Version
- School Situations Questionnaire – Revised
- Child Depression Inventory
- Beck Depression Inventory
- Childhood Depression Rating Scale - Revised Checklist
- Young's Mania Scale
- Weighted Scores: Overt Aggression Scale
- Overt Aggression Scale (OAS)
- Self-Report for Childhood Anxiety and Related Emotional Disorders: (SCARED) – Parent Form
- Self-Report for Childhood Anxiety and Related Emotional Disorders: (SCARED) - Child Form
- Leyton OCD Survey
- CY-BOCS Severity Ratings
- CY-BOCS Symptom Checklist
- CY-BOCS Compulsion Checklist
- Aberrant Behavior Checklist – Community
- Children's Aggression Scale – Parent Version

GERIATRIC PSYCHOPHARMACOLOGY

James M. Ellison, Editor

Parallel to the curriculum for child and adolescent psychiatry, we include 9 key lectures focused on geriatric psychiatry and emphasizing pharmacotherapy. Many of these lectures were authored by members of the ASCP and the ACNP. The importance of understanding the principles of geriatric pharmacotherapy can hardly be overstated. With fewer than 3,000 board certified geriatric psychiatrists in the United States and a population of older adults approaching 40 million, the need for dissemination of geriatric psychopharmacology knowledge is clear.

For this edition of the Model Curriculum, the geriatric topics have been updated and expanded. This is timely in light of recent advances in diagnostic techniques, changes in diagnostic criteria (DSM 5), and our expanding pharmacopeia with on-label and off-label uses of medications. The lectures on geriatric psychopharmacology emphasize careful diagnosis, exclusion of medical conditions that mimic primary psychiatric disorders, attention to altered pharmacodynamics in the elderly, recognition of pharmacokinetic factors and drug/drug interactions, dosing that is careful without being inadequate, and proper monitoring of therapy. As with younger patients, the value of appropriate concurrent psychotherapy must be taken into account in treating anxiety, depression, psychosis, and disorders of cognition. For outstanding in-depth discussion of many issues covered in these lectures, one might consult the 4th edition of Salzman's Clinical Geriatric Psychopharmacology.

Geriatric Lecture Series

- Pharmacotherapy and Alzheimer's Disease – James M. Ellison, M.D., MPH and Gary W. Small, MD
- Delirium: New Ways to Understand and Manage It – Barbara Kamholz, M.D.
- Pharmacological Treatment of Agitation and Aggression in Dementia – Howard Fenn, M.D.
- Depression in Later Life: Epidemiology, Assessment, and Treatment– James M. Ellison, M.D., MPH and Gary W. Small, MD
- Bipolar Disorders in Late Life – Robert C. Young, M.D., Benoit H. Mulsant, M.D.
- Treatment of Anxiety Disorders in Older Adults – Eric J. Lenze, M.D.

- Psychosis and Schizophrenia in Later Life -- David Sultzer, MD, and Pei Huey Nie, MD
- Alcohol and Sedative-Hypnotic Addiction in the Elderly – David Oslin, M.D.
- Drug/Drug Interactions in the Elderly – Bruce Pollock, M.D.

ALCOHOL AND SUBSTANCE ABUSE PSYCHOPHARMACOLOGY

Charles O'Brien, M.D., Co-Editor
Wendol Williams, M.D., Co-Editor

Starting with the fifth edition, we added a very complete set of lectures on alcohol and substance abuse developed for medical students by Professor Charles O'Brien, M.D., and his faculty at the University of Pennsylvania. We include them as a separate track. These lectures can be tailored for use depending on the level of the target audience, i.e. medical student, residents,.

Alcohol and Substance Abuse Lecture Series

- Brain and Behavior: Substance Abuse – Charles P. O'Brien, M.D., Ph.D., Charles Dackis, M.D.
- Addiction: A Disease of the Brain – Charles P. O'Brien, M.D., Ph.D.
- Substance Abuse: The Nation's Number One Health Problem – James Cornish, M.D.
- Marijuana – Daniel D. Langleben, M.D.
- Stimulants – Charles Dackis, M.D.
- Nicotine: A Drug of Abuse – Janet Audrain-McGovern, Ph.D.
- Alcoholism – David W. Oslin, M.D.
- Hallucinogenic Agents – Laura F. McNicholas, M.D., Ph.D.
- Prescription Drug Abuse – Kyle M. Kampman, M.D.
- Psychiatric Disorders and Psychotherapy of Substance Abuse – Robert M. Weinrieb, M.D.
- Effects on Drugs on the Developing Brain: Pregnancy, Adolescence and Beyond – Marina Goldman, M.D.
- Medical Complications of Substance Abuse – Phil Green, M.D.

PART IV: APPENDICES

APPENDIX A

OBJECTIVE ASSESSMENT MEASURES: RATING SCALES And Sample Medical Record Forms

Bruce Lydiard, Editor

> *"One of the most difficult aspects of current training is the lack of objective measures of treatment response. Most clinicians use some degree of global judgment, which is often neither systematic nor well documented. Unfortunately, psychiatry does not have the advantage of laboratory tests or physiologic measures to quantify treatment response. Our assessments are primarily based on observation of patient behavior and our subjective evaluation of the patient's report of their own subjective experience.*
>
> **John Kane, M.D., senior psychopharmacology researcher and teacher.**

It is important to document your thinking, discussion with the patient and other relevant clinical activities. This is especially so if you are using agents "off-label" (i.e., for which FDA approval has not been granted). Appropriate assessments can easily be incorporated into clinical practice and can provide excellent support for the treatment prescribed—or may suggest that a change may be indicated. From a legal perspective, document your thinking, discussion with the patient and most important, the outcome of treatment can be an important record to have in hand. In addition, some patients will be transferred to colleagues for a variety of reasons, and documenting what has worked, what has not worked, etc., can provide valuable information which will be useful to the colleague and the patient.

Rating Instruments

Here are various rating scales provided, some of which are reviewed in the presentation (marked by an asterisk in the list below*). There are a number of short yet accurate measurement tools (rating scales) available that effectively measure the fluctuation of emotional, as well as physical, symptoms. Copies of some of the ratings are also included. The following is a partial list of useful instruments:

Diagnostic Assessment Tools

- The Mini International Neuropsychiatry Interview

Depression Scales

- Hamilton Depression Rating Scale*
- Montgomery-Asberg Depression Scale*
- Beck Depression Inventory
- Hospital Anxiety and Depression Scale*
- Geriatric Depression
- GRID HAM-D
- Quick Inventory for Depression (QIDS)
- Zung Self-Rating Depression Scale

Anxiety Scales

- Hamilton Anxiety Rating Scale*
- Hospital Anxiety and Depression Scale*
- Panic Disorder Severity Scale
- Beck Anxiety Inventory
- Y-BOCS
- Sheehan Panic Scale
- Anxiety Sensitivity Index
- Zung Anxiety
- Liebowitz Social Anxiety Scale
- Duke Brief Social Phobia Scale
- Social Phobia Inventory

Global Rating Scales

- Clinical Global Severity (CGI –S)*
- CGI Global Improvement (CGI-I)*

Functional Impairment Measures

- Short Form-36*
- Sheehan Disability Scale *

Quality of Life Measures

- Quality of Life and Enjoyment (QLES-Q)*

Psychosis Measurement

- Positive and Negative Symptoms Scale (PANSS*)
- Brief Psychiatric Rating Scale (BPRS)

Bipolar Disorder Scales

- Young Mania Rating Scale (**YMRS***)
- Mood Charts

Extrapyramidal Symptoms Scales

- Abnormal Involuntary Movement Scale (AIMS)*
- Barnes Akathisia Scale*
- Simpson-Angus*

Sexual Dysfunction Scales

- Arizona Sexual Inventory
- Rush Sexual Inventory Scale
- Changes in Sexual Functioning Questionnaire (A Clayton)

Benzodiazepine /Alcohol Withdrawal Scales

- Physicians Withdrawal Checklist

Adult Attention Deficit Hyperactivity Disorder Scales

- ADHD-RS with prompts

Resources

New assessment scales are constantly being developed. It is the intention here to provide the reader with an idea of what is currently being used, and how to access these assessment tools.

A comprehensive review of currently available assessment tools can be found in **Comprehensive Review of Validated Instruments: Handbook of Psychiatric Measures/Task Force for the Handbook of Psychiatric Measures; A. John Rush Jr. (editor), 2nd Edition, American Psychiatric Press, Washington DC, 2008.**

This handbook was published in 2008, and is a collection of most current instruments for measuring mental disorders and symptoms. It methodically evaluates the psychometric properties (reliability and validity) of each instrument. The scales below are available on the CD which accompanies the book:

Abnormal Involuntary Movement Scale (AIMS)
Addiction Severity Index (ASI)
Alcohol Dependency Scale (ADS)
Alcohol Expectancy Questionnaire (AEQ)
Alcohol Outcomes Module (AOM)
Alcohol Timeline Followback (TLFB)
Alcohol Use Disorders Identification Test (AUDIT)
Alzheimer's Disease Assessment Scale (ADAS)
Anger, Irritability, and Assault Questionnaire (AIAQ)

Barnes Akathisia Rating Scale (BARS)
Barratt Impulsiveness Scale, Version 11 (BIS-11)
Behavior and Symptom Identification Scale (BASIS-32)
Behavioral and Emotional Rating Scale (BERS)
Behavioral Pathology in Alzheimer's Disease Rating Scale (BEHAVE-AD)
Body Dysmorphic Disorder Examination (BDDE)
Body Shape Questionnaire (BSQ)
Brief Psychiatric Rating Scale (BPRS)
Brief Sexual Function Inventory (BSFI)
Brief Social Phobia Scale (BSPS)
Burder Interview (BI)
Buss-Durkee Hostility Inventory (BDHI)

CAGE Questionnaire
Calgary Depression Scale for Schizophrenia (CDSS)
Center for Epidemiologic Studies of Depression Scale (CES-D)
Child Dissociative Checklist (CDC)
Child Health Questionnaire (CHQ)
Children's Global Assessment Scale (CGAS)
Clinical Dementia Rating (CDR) Scale
Clinical Global Impressions (CGI) Scale
Clinical Institute Withdrawal Assessment for Alcohol (CIWA-AD)

Clinician Administered Rating Scale for Mania (CARS-M)
Clinician Alcohol Use Scale (AUS)
Clinician Drug Use Scale (CIS)
Columbia Impairment Scale (CIS)
COMPASS OP
Confusion Assessment Method (CAM)
Cornell Scale for Depression in Dementia (CSDD)
Crown-Crisp Experimental Index (CCEI) [often referred to as Middlesex Hospital Questionnaire (MHQ)]
Dartmouth COOP Functional Assessment Charts (COOP)
Defense Style Questionnaire (DSQ)
Depression Outcomes Module (DOM)
Diagnostic Interview for Borderline Patients—Revised (DIB-R)
Diagnostic Interview for DSM-IV Personality Disorders (DIPD-IV)
Dissociative Disorders Interview Schedule (DDIS)
Dissociative Experiences Scale (DES)
Drug Attitude Inventory (DAI)

Epworth Sleepiness Scale (ESS)
Excessive Daytime Sleepiness and Nocturnal Sleep Subscales of the Sleep/Wake Activity Inventory (SWAI)

Family Assessment Device (FAD)
Fear Questionnaire (FQ)
Functional Assessment Staging (FAST)

Galveston Orientation and Amnesia Test (GOAT)
Geriatric Depression Scale (GDS)
Global Assessment Scale (GAS)
Global Deterioration Scale (GDS)

Health of the Nation Outcomes Scale (HoNOS)

Impact of Event Scales (IES)
Internal State Scale (ISS)
Inventory of Depressive Symptomatology (IDS)

Lawton Instrumental Activities of Daily Living Scale (Lawton IADL)
Life Skills Profile (LSP)

Massachusetts General Hospital (MGH) Hairpulling Scale
McGill Pain Questionnaire (MPQ)
MEDWatch
Mini-Mental State Examination (MMSE)
Mississippi Scale (MSS)
Mobility Inventory for Agoraphobia (MI)
Multnomah Community Ability Scale (MCAS)

Neurobehavioral Cognitive Status Examination (NCSE or COGNISTAT)

Obsessive Compulsive Drinking Scale (OCDS)
Overt Aggression Scale –Modified (OAS-M)

Padua Inventory (PI)
Panic Disorder Severity Scale (PDSS)
Patient Satisfaction Questionnaire (PSQ)
Penn State Worry Questionnaire (PSWQ)

Pittsburgh Sleep Quality Index (PSQI)
Primary Care Evaluation of Mental Disorders (PRIME-MD)
Psychiatric Institute Trichotillomania Scale (PITS)

Quality of Life Index (QLI)
Quality of Life Interview (QOLI)
Quality of Life Scale (QLS)
Questionnaire on Eating and Weight Patterns—Revised (QEWP-R)

Rating Scale for Extrapyramidal Side Effects (Simpson-Angus EPS Scale)
Recent Life Changes Questionnaire (RLCQ)

Scale for the Assessment of Negative Symptoms (SANS)
Scale for the Assessment of Positive Symptoms (SAPS)
Schedule for Affective Disorders and Schizophrenia for School Age-Children: Present and Lifetime Version (K-SADS-PL)
Schizophrenia Outcomes Module (SCHIZOM)
Screen for Caregiver Burden (SCB)
Screener for Somatoform Disorders
Service Satisfaction Scale 30 (SSS-30
Sexual Arousability Inventory (SAI)
SF-36 Health Survey (SF-36)
Sheehan Disability Scale
Somatoform Disorders Schedule (SDS)
Somatoform Disorders Symptom Checklist
South Oaks Gambling Screen (SOGS)
Systematic Assessment for Treatment Emergent Events—General Inquiry (SAFTEE-GI)

Three-Area Severity of Depression (Ruskin) Scale
Treatment Services Review (TSR)
TWEAK Test

West Haven-Yale Multidimensional Pain Inventory (WHYMPI)
Whitley Index of Hypochondriasis
Wisconsin Quality of Life Index (W-QLI)

Yale Global Tic Severity Scale (YGTSS)
Yale-Brown Obsessive Compulsive Scale (Y-BOCS)
Yale-Brown Obsessive Compulsive Scale Modified for Body Dysmorphic Disorder (BDD-YBOCS)
Young Mania Rating Scale (YMRS)

Zing Self-Rating Depression Scale (Zing SDS)

Helpful Sites for Accessing Scales

www.neurotransmitter.net
www.medical-outcomes.com
www.brainexplorer.org
www.adelaide.edu.au/library/guide/med/menthealth/scales.html
www.dr-bob.org

Additional Information and References

The Mini-International Neuropsychiatry Interview (M.I.N.I.)

Sheehan DV, Lecrubier Y, Sheehan KH, Amorim P, Janavs J, Weiller E, Hergueta T, Baker R, Dunbar GC. The Mini-International Neuropsychiatric Interview (M.I.N.I.): The development and validation of a structured diagnostic psychiatric interview for DSM-IV and ICD-10, J Clin Psychiatry 1998; 59 (suppl 10): 22-33.

Abstract: The Mini-International Neuropsychiatric Interview (M.I.N.I.) is a short structured diagnostic interview, developed jointly by psychiatrists and clinicians in the United State and Europe, for DSM-IV and ICD-10 psychiatric disorders. With an administration time of approximately 15 minutes, it was designed to meet the need for a short but accurate structured psychiatric interview for multicenter clinical trials and epidemiology studies and to be used as a first step in outcome tracking in non-research clinical settings. The authors describe the development of the M.I.N.I. and its family of interviews: the M.I.N.I.-Screen, the M.I.N.I.-Plus, and the M.I.N.I.-Kid. They report on validation of the M.I.N.I. in relation to the Structured Clinical Interview for DSM-III-R, Patient Version, the Composite International Diagnostic Interview, and expert professional opinion, and they comment on potential applications for this interview.

Hamilton Rating Scale for Anxiety

Hamilton M. The assessment of anxiety states by rating, British Journal of Psychiatry 1959; 32: 50-55.

This is a standard rating scale for anxiety which measures general levels of anxiety. This is a clinician-administered instrument used to assess current severity of anxiety.

Hamilton Rating Scale for Depression

Hamilton MA. A rating scale for depression, Journal of Neurology, Neurosurgery, and Psychiatry 1960; 23: 565-62.

This is a clinician-rated scale consisting of 17-28 items, which assess severity of depression. It has been used as a standard in conducting psychiatric research for many years. The most common is the 17-item version.

Montgomery-Asberg Depression Rating Scale

Montgomery SA, Asberg M. A new depression scale designed to be sensitive to change, British Journal of Psychiatry 1979; 134: 382-9.

Abstract: The construction of a depression rating scale designed to be particularly sensitive to treatment effects is described. Ratings of 54 English and 52 Swedish patients on a 65 item comprehensive psychopathology scale were used to identify the 17 most commonly occurring symptoms in primary depressive illness in the combined sample. Ratings on these 17 items for 64 patients participating in studies of 4 different antidepressant drugs were used to create a depression scale consisting of the 10 items which showed the largest changes with treatment and the highest correlation to overall change. The inner-rater reliability of the new depression scale was high. Scores on the scale correlated significantly with scores on a standard rating scale for depression, the Hamilton Rating Scale (HRS), indicating its validity as a general severity estimate. Its capacity to differentiate between responders and non-responders to antidepressant treatment was better than the HRS, indicating greater sensitivity to change. The practical and ethical implications in terms of smaller sample sizes in clinical trials are discussed.

Clinical Global Impressions Scale (CGI)

Guy W. ECDEU Assessment Manual for Psychopharmacology. National Institute of Mental Health-US Department of Health, Education, and Welfare. Washington DC Publication (ADM) 76-338, 1976.

Patient-Rated Scales

Hospital Anxiety and Depression Scale (HADS)

The Hospital Anxiety and Depression Scale (HADS) (Zigmond AS, Snaith RP. The hospital anxiety and depression scale, Acta Psychiatr Scand 1983; 67: 361-70) is a 14-item, patient-rated instrument, 7 of which target anxiety and 7 target depression. The HADS, which is one of several psychometric scales recommended in Rome II, was originally developed for screening medical patients for anxiety and depression. It has been used extensively in both English-speaking and non-English speaking countries as a measure of severity of psychiatric symptoms, to describe psychiatric symptoms in different IBS patient groups (Longstreth GF, Hawkey CJ, Mayer EA, Jones RH, Naesdal J, Wilson IK, Peacock RA, Wiklund IK. Characteristics of patients with irritable bowel syndrome recruited from three sources: implications for clinical trials, Aliment

Pharmacol Ther 2001; 15: 959-964). It is sensitive to treatment and is amenable to computerized administration. A ready source for this scale is www.neurotransmitter.net under 'Rating Scales'. **Given the wide use of this scale and its psychometric properties, it is recommended highly as a useful tool for assessing severity of anxiety and depression.**

Patient Health Questionnaire (PHQ)

Spitzer RL, Williams JB, Kroenke K, Linzer M, deGruy FV, 3rd, Hahn SR, Brody D, Johnson JG. Utility of a new procedure for diagnosing mental disorders in primary care. The PRIME-MD 1000 study, JAMA 1994; 272: 1749-56.

This is a patient rated list of symptoms of anxiety, depression, alcohol use, eating disorder, and 13 somatic symptoms from which presumptive DSM-IV diagnoses can be obtained. It contains information on its intended to be used with the PRIME-MD, which is an instrument intended to allow the clinician to review the PHQ and quickly assign (10") diagnoses for generalized anxiety disorder, panic disorder (but not social anxiety or PTSD), major and minor depression, alcohol-related disorders, eating disorders, and somatoform disorder (like somatization). The PHG 15 is a different version of the PHQ, which is used in primary care settings.

Quick Inventory of Depressive Symptoms –Self Rating (QIDS-SR)

Rush et al. The 16-item Quick Inventory of Depressive Symptomatology (QIDS) Clinician Rating (QIDS-C) and Self-Report (QIDS-SR): A psychometric evaluation in patients with chronic major depression. Biological Psychiatry, 54:573-583, 2003.

The 16 item Quick Inventory of Depressive Symptomatology (QIDS) is designed to assess the severity of depressive symptoms. It is available in the clinician (QIDS-C16) and self-rated versions (QIDS-SR16). The QIDS assess all the criterion symptom domains designated by the DSM-5 to diagnose a major depressive episode. These assessments can be used to screen for depression, although they have been used predominantly as measures of symptom severity. It is sensitive to change, with medications, psychotherapy, or somatic treatments, making it useful for both research and clinical purposes. The psychometric properties of the QIDS have been established in various study samples.

Zung Anxiety Scale

Zung WW. Prevalence of clinically significant anxiety in a family practice setting, Am J Psychiatry 1986; 143: 1471-2.

This is a validated, patient-rated scale to assess anxiety symptoms.

Beck Depression Inventory

Beck, AT, Ward CH, Mendelson M. A validated, patient-rated inventory for measuring depression, Archives of General Psychiatry 1961; 4: 561-571. This is a 20-item scale, which has widely been used for patient self-assessment.

APPENDIX B

UPDATED LIST OF OTHER USEFUL BOOKS

David N. Osser, MD, Editor

Explanatory Note: This is not presented as a complete list of all useful books in psychopharmacology. Rather, it resulted from a variety of factors including the authors' roles as mentors for the Editor of this list, respect for the scholarship of colleagues well known to this Editor, and because of the satisfaction gained from finding answers to questions in these books. Also liberty was taken to include a book co-authored by the Editor. Books on previous lists published more than 10 years ago were eliminated except as noted.

Ansari A, Osser DN. Psychopharmacology for Medical Students. Bloomington, Indiana. AuthorHouse, 2009 ISBN: 978 1 4389 9885 5 (e). *2nd Edition in press for late 2014.*

Baldessarini RJ. Chemotherapy in Psychiatry: Pharmacologic Basis of Treatments for Major Mental Illness, 3d Edition. New York, NY. Springer. 2013 ISBN 978-1-4614-3710-9

Ciraulo DA, Shader RI, eds. Pharmacotherapy of Depression, 2nd Edition. New York. Springer. 2011 ISBN 978-1-60327

Ghaemi SN. A Clinician's Guide to Statistics and Epidemiology in Mental Health: Measuring Truth and Uncertainty. New York. Cambridge University Press, 2009 ISBN 978 0 521 70958-3 paperback

Brunton L, Lazo J, Parker K. Goodman and Gilman's Pharmacological Basis of Therapeutics, Eleventh Edition. Europe, McGraw-Hill Co., 2005 ISBN 9780071608916

Goodwin FK, Jamison DR. Manic-Depressive Illness 2nd edition: Bipolar Disorders and Recurrent Depression. New York. Oxford University Press, 2007 ISBN-13: 978-0-19-513579-4

Gray GE. Concise Guide to Evidence-Based Psychiatry. APA Press, Washington, DC 2004 ISBN 1585620963 paperback

Janicak PG, Marder PG, Pavuluri MN. Principles and Practice of Psychopharmacotherapy, 5th edition. Philadelphia: Williams & Wilkins, 2011. *Textbook with algorithm-like "strategies" throughout the text.*

Jefferson JW, Greist JH, Ackerman DL et al. Lithium Encyclopedia for Clinical Practice, Second Edition. APA Press. Washington, DC 1987 *(Old, but retained because still indispensable for people who prescribe lithium. Available from amazon.com*)

Ketter TA, ed. Handbook of Diagnosis and Treatment of Bipolar Disorders. Washington, DC. American Psychiatric Publishing. 2010 IBSN 978-1-58562-313-6 paperback

Kranzler HR, Ciraulo DA, Zindel LR, eds. Clinical Manual of Addiction Psychopharmacology. American Psychiatric Publishing. Washington, DC. 2014 ISBN 978-1-58562-440-9 paperback

Nemeroff CB, ed. Management of Treatment-Resistant Major Psychiatric Disorders. New York, NY. Oxford University Press. 2012 ISBN 978-0-19-973998-1

Ng CH, Lin K-M, Singh BS, Chiu E. Ethnopsychopharmacology: Advances in Clinical Practice. Cambridge University Press. New York, 2008. ISBN 978-0-521-87363-5

Ovsiew F, Munich RL, eds. Principles of Inpatient Psychiatry. New York. Lippincott Williams & Wilkins, 2009 ISBN-13:978 0 7817 7214 3

Pies RW. Handbook of Essential Psychopharmacology, Second Edition. APA Press. Washington, DC 2005 ISBN 1585621684 paperback

Parker G. Bipolar II Disorder. New York. Cambridge University Press, 2008. ISBN 978 0 521 87314 7

Riba MB, Balon R. Competency in Combining Pharmacotherapy and Psychotherapy. Integrated and Split Treatment. APA Press. Washington, DC 2005.

Labbate LA, Fava M, Rosenbaum JF, Arana GW. Handbook of Psychiatric Drug Therapy, Sixth Edition. Lippincott Williams & Wilkins 2010 ISBN –13:978 0 7817 7486 4 paperback

Salzman C (ed). Benzodiazepine Dependence, Toxicity and Abuse: A Task Force Report. American Psychiatric Association Report. Washington, DC, APA Press, 1990. *Old, but still important.*

Salzman C (ed). Clinical Geriatric Psychopharmacology, Fourth Edition. Baltimore, Williams & Wilkins, 2005 ISBN 078174380X

Schatzberg AF, Cole JO, DeBattista C. Manual of Clinical Psychopharmacology, 7th Edition. American Psychiatric Publishing. Washington, DC 2010 ISBN 978-2-58562-377-8 paperback

Stahl SM. Essential Psychopharmacology: The Prescriber's Guide, 5nd edition. New York, Cambridge University Press, 2014 ISBN 978-1-107-67502-5 paperback

Stahl SM. Essential Psychopharmacology: Neuroscientific Basis and Practical Applications, 3d edition. New York, Cambridge University Press, 2008 ISBN 978-0-521-85702-4 paperback

Stein DJ, Hollander E, Rothbaum BO, eds. Textbook of Anxiety Disorders. Washington, DC. American Psychiatric Publishing. 2010 ESBN978-1-58562-254-2

Stein DJ, Lerer B, Stahl SM, eds. Essential Evidence-Based Psychopharmacology, 2nd edition. New York, NY. Cambridge University Press. 2012 ESBN 978-1-107-00795-8 paperback. *Really great review articles in here.*

Straus SE, Richardson WS, Glasziou P, Haynes RB. Evidence-Based Medicine: How to Practice and Teach EBM, Third Edition. New York, Elsevier, 2005 ISBN 0443074445

Taylor D, Paton C, Kapur S.. The Maudsley Prescribing Guidelines, 11th Edition. London, UK. Informa Healthcare 2012: ISBN-13:978 1 84184 699 6 paperback, *New 12th edition expected January 2015. In the opinion of the editor of this list (who has no financial, institutional, collegial or other relationship with the authors – but has read it from cover to cover), this is the best general psychopharmacology text for trainees currently available.*

Wynn GH, Oesterheld JR, Cozza KL, Armstrong SC. Clinical Manual of Drug Interaction Principles for Medical Practice. Washington, DC. American Psychiatric Publishing, 2008 ISBN 9781585622962 paperback

Drug Facts and Comparisons, Pocket Version, Thirteenth Edition, Central Nervous System Agents. St. Louis, Missouri. Wolters Kluwer Health, 2009 www.factsandcomparisons.com

APPENDIX C

LIST OF ADDITIONAL JOURNALS (See Table 11 for the others)

David N. Osser, Editor "C" = Mostly clinical emphasis; "B" = mostly basic

Acta Psychiatrica Scandinavia (C), frequently publishes clinically oriented psychopharmacological reports.

American Journal of Geriatric Psychiatry (AJGP), official journal of the American Association for Geriatric Psychiatry.

Bulletin of Clinical Psychopharmacology (C) (Mesut Cetin, M.D., Editor) This is the leading Turkish psychopharmacology journal. Turkey is becoming a major location for psychopharmacology research. Some articles and all abstracts are in English.

The Cochrane Library (C) (at www.cochrane.org), includes the Cochrane Database of Systematic Reviews. You can read the abstracts for free but must subscribe to get the full reviews.

Cogent Medicine. (C) This is a free web-based journal that has a strong psychiatry and psychopharmacology section. On the first of each month, summaries and in-depth commentaries on important new articles are posted. You can have links to the "Editors' Choice" new reviews on topics of interest to you sent to you by email each month. (at www.cogentmedicine.com)

Convulsive Therapy (C & B), dedicated to ECT treatment, but often has case reports and other articles relevant to the interface of psychopharmacology and ECT.

Depression and Anxiety (Thomas Uhde, MD, Editor–in-Chief) – (C and B) includes reports involving all aspects of anxiety and depression including psychopharmacology treatments.

Evidence-Based Mental Health (C) (at www.ebmentalhealth.com), includes reviews and analyses of significant papers in psychopharmacology and psychiatry.

Harvard Review of Psychiatry, S Greenfield (ed) (C&B). Articles receive very thorough peer review.

Human Psychopharmacology - Clinical and Experimental (C) has clinical studies that are somewhat second-line in importance

International Clinical Psychopharmacology (C), publishes many clinical trials conducted in Europe. Expensive but has many valuable articles.

Journal of Affective Disorders (C), focuses on mood and anxiety disorders, and generally involves clinically relevant articles, many of which involve psychopharmacological treatments.

Journal of Anxiety Disorders (C), heavily weighted to psychological treatment of anxiety disorders, but has occasional psychopharmacological treatment studies or reviews.

Journal of the American Academy of Child and Adolescent Psychiatry (C), the "orange journal" has many psychopharmacology articles.

Journal of Child and Adolescent Psychopharmacology (C). The "silver journal" has many case reports and case series articles.

Journal of ECT (C and B), "dedicated to the science of electroconvulsive therapy and related treatments." (Formerly called Convulsive Therapy) (at www.ectjournal.com).

Psychiatry Research (C & B), a basic science psychopharmacology journal with infrequent, clinically oriented articles.

Schizophrenia Bulletin (C & B) (now available from Oxford University Press) (see www.oupjournals.org), clearly focused on topics relevant to its title; regularly publishes studies and reviews of psychopharmacology of schizophrenia.

Yearbook of Psychiatry and Applied Mental Health (C and B), Boston, Mosby, this publication comes out annually and has 500+ pages of abstracts of important articles in psychiatry and psychopharmacology with editorial comment. An excellent way to get up-to-date articles you may have missed.

APPENDIX D

FORMS FOR EVALUATION OF TRAINEE, CLINICAL SUPERVISOR, TEACHING FACULTY, AND OF ENTIRE COURSE

Ira Glick, Editor

We provide here forms from one residency training program (Stanford) for evaluation of both teaching and of the learning process.

Universal Residents Evaluation Form

Resident:_____ Attending:_____

Training Experience:_____ Dates:_____

Overall Assessment (circle one) 1 = poor performance 10 = outstanding performance

1 2 3 4 5 6 7 8 9 10

YES NO

☐ ☐ 1. Performed satisfactorily for level and met basic requirements for experience.

☐ ☐ 2. Improvement needed in areas noted below.

☐ ☐ 3. Recommended review by REC for academic probation

Areas in Need of Improvement (please circle specific areas in parenthesis or expand below)

_____ Knowledge Base (Knowledge of diagnostic procedures, descriptive psychiatry, therapeutic modalities, psychodynamics, relevant literature)

_____ Clinical Skills (Interviewing, integration of biological, psychological, and social variables in treatment planning, application of therapeutic modalities, empathy, and awareness of counter-transference)

_____ Professional Attitude (Responsibility, availability, ability to organize and present information, chart work, teaching skills, capacity to work with others, recognition of relative weaknesses, use of supervision)

Comments (Please elaborate on areas for improvement and/or comment on strengths for letters of reference)

_____

_____

Evaluation of Supervisor

Supervisor:_____ **Resident:** _____

Type of Therapy (Inpatient, long-term, group, etc.)

Frequency:_____ **Supervisory sessions** for _____ patient sessions.

Duration of Supervisory Sessions_____ minutes for _____ months.

Are location and time satisfactory? □Yes □No

I. Expectations: (What you hope supervision would provide)

_____

_____

II. Personal Qualities of Supervisor: (Is he/she enthusiastic, sensitive, too rigid or too unstructured, able to give feedback, able to create open atmosphere, enjoyable to work with?)

_____

_____

III. Teaching Skills and Knowledge of Supervisor: (knows and teaches evaluation, treatment, management, flexibility, and can stimulate interest in patients.)

_____

_____

IV. Overall Rating:

Outstanding □ Very Good □ Good □ Unacceptable □

V. Additional Comments: (May include specific strengths, weaknesses, and suggestions for improvement.)

_____

_____

_____

_____

Psychopharmacology Supervisor Evaluation

I should appreciate your feedback about the supervisory experience in the clinic this year. Your response may affect supervision for future residents. Please answer questions by circling the number on the scale that best corresponds.

1= Excellent 2= Very Good 3= Fair 4= Poor 5= Does Not Apply

Name of Resident (optional) _____ PGY- _____

Name of Supervisor _____

1. A. Was your supervisor available? 1 2 3 4 5

B. How frequently did you generally meet? _____

C. Was your supervisor available for emergencies with psychopharmacology clinic patients?

1 2 3 4 5

D. If not, was other supervision available? 1 2 3 4 5

Who helped you? _____

E. How many psychopharmacology emergencies did you have this year? _____

2. Did you review your entire psychopharmacology roster in the course of the year?

Yes □ No □ (If no, how did you proceed?) _____

_____

3. Did you feel your supervisor was supportive? 1 2 3 4 5

4. Did the supervisor provide:

A. Psychopharmacological supervision or instruction
adequate for patient management? 1 2 3 4 5

B. *Sophisticated* psychopharmacological supervision or
Instruction? 1 2 3 4 5

C. Helpful information about medications in the following categories:

Neuroleptics 1 2 3 4 5
Atypical neuroleptics (e.g. clozapine) 1 2 3 4 5

Tricyclics	1	2	3	4	5
MAO inhibitors	1	2	3	4	5
Fluoxetine/atypical antidepressants	1	2	3	4	5
Benzodiazepines	1	2	3	4	5
Buspirone	1	2	3	4	5
Anticonvulsants	1	2	3	4	5

Other (please specify): _____

5. Was your supervisor helpful:

A. In integrating psychosocial and pharmacological issues?	1	2	3	4	5
B. In integrating psychopharmacology and psychotherapy?	1	2	3	4	5

6. Overall rating of your supervisor:	1	2	3	4	5

7. Other comments (feel free to use additional pages):

Thank you for taking the time to complete this form. Please leave your responses in my box.

Evaluation Form for Inpatient Supervisor

RESIDENT'S NAME: _____
SUPERVISOR'S NAME: _____
Service: _____
Dates of Rotation: _____
Please check one: __ PGY-I __ PGY-II __ PGY-III

Please rate the resident, compared to expectations for residents at this level, on the following aspects of supervision by checking the appropriate box. For COMMENTS, please check the box and elaborate on p.2, making reference to the specific item number addressed. We do not want these forms to replace face-to-face feedback so please discuss your evaluation with the resident and indicate that you have done so on p.2. We also ask that you provide feedback to the resident mid-way through the rotation.
Comparing this resident to a resident at this PGY level, do you consider that the resident passed this rotation overall (please check): YES___ NO___

	Below Expected	Expected	Above Expected	N/A	√ (see comments)
Patient Care					
1. Ability to interview, elicit & document a comprehensive psychiatric history and mental status exam					
2. Ability to develop and document a DSM-IV multiaxial differential diagnosis and treatment plan for the following disorders: Affective, Psychotic, Anxiety, Eating, Substance abuse, Pain, Personality					
3. Ability to assess, document, and intervene regarding suicidal or homicidal risk and/or other emergencies					
4. Ability to develop reasonable treatment goals & overall strategy for patients					
5. Demonstrates good organizational skills					
6. Ability to conduct supportive psychotherapy					
Medical Knowledge					
7. Ability to understand the phenomenology and the course of severe psychiatric disorders					
8. Ability to manage acutely ill patients, including the medical aspects of psychiatric care					
9. Knowledge of indications for dosing, side effects and drug interactions of : Antipsychotics, Antidepressants, Anxiolytics, Mood stabilizers, etc.					
10. Knowledge of substances of abuse and management of toxicity and withdrawal					
11. Knowledge of therapeutic use of ECT					
12. Understanding and ability to implement legal aspects of inpatient practice					
Practice-Based Learning and Improvement					
13. Understanding and use of an evidence-based approach to patient care					
14. Ability to recognize limitations of his/her knowledge base and understand need for life-long learning					
15. Demonstrates appropriate skills to obtain up-to-date information from the scientific and practice literature (e.g.. Medline, drug databases) *					

16. Demonstrates ability to critically evaluate the literature and to use this information to determine treatment approach					
	Below Expected	**Expected**	**Above Expected**	**N/A**	**√ (see comments)**
Interpersonal and Communication Skills					
17. Ability to write a comprehensive, organized medical note					
18. Ability to be socioculturally sensitive					
19. Ability to communicate effectively & work with a multidisciplinary treatment team					
20. Ability to involve family members, diagnose and understand family systems where appropriate					
21. Ability to teach psychiatry to students					
22. Ability to present a case clearly					
Professionalism					
23. Ability to exhibit professional and ethical behavior					
24. Interest and enthusiasm					
25. Ability to manage countertransference					
26. Capacity to learn and grow from supervision					
Systems-Based Practice					
27. Has knowledge of resources available both publicly and privately for treatment of psychiatric/behavioral problems					
28. Demonstrates knowledge of managed behavioral health systems and is able to interact appropriately to assist patient care					
29. Awareness and Responsiveness - Demonstrates awareness and responsiveness to the larger context and system of health care (e.g. outpatient services, partial hospitals, substance abuse programs, nursing homes, etc.) and understands how to use these as part of an individualized treatment plan.					
30. Has a working knowledge of the diverse systems involved in treating patients from culturally diverse backgrounds					

Resident's Strengths:

Weaknesses

Specific comments (please include question number):

Is there anything that should be known by the Evaluation Committee that would prevent this resident from being promoted to the next level? If yes, please describe (use back if necessary):

☐ **I have met with the resident to provide feedback mid-way through the rotation**

☐ **I have met with the resident to discuss the content of this evaluation**

Signature: _____ **Date: _____**

Evaluation Form for Outpatient Supervisor

RESIDENT'S NAME: _____

SUPERVISOR'S NAME: _____

Date Supervision Began: _____

Frequency: _____

Location: _____

PGY: _____

Dear Supervisor:

This form will serve as the basis of discussion for the semiannual evaluation conference for each psychiatry resident. Please complete and return this form in the next 2 weeks so that it will be available for the Resident Evaluation Committee at the time of the conference. We do not want these forms to replace face-to-face feedback so please discuss your evaluation with the resident. If you are not in contact with the resident or your contact has been too short for an evaluation, please indicate so below.

Comparing this resident to a Stanford resident at this PGY level, do you consider that the resident passed this rotation overall (please check): YES___ NO___

SUPERVISION SESSIONS

A. Number of cases the resident is currently seeing under your supervision: _____

B. Data sources (circle those applicable): *Verbal reports, written reports, interview notes, audiotapes, videotapes, direct observation*

C. What therapeutic orientation are you teaching the resident? (check all that apply):
   1. Supportive _____
   2. Psychodynamic _____
   3. Cognitive-Behavioral _____
   4. Brief _____
   5. Integrating psychotherapy and pharmacotherapy _____
   6. Biologic _____
   7. Other _____

Please rate the resident, compared to expectations for residents at this level, on the following aspects of supervision by checking the appropriate box. For comments, please check the box and elaborate on page 3, making reference to the specific item number addressed.

	Below Expected	Expected	Above Expected	N/A	√ (See comments)
Patient Care					
1. Demonstrates the ability to carry out the techniques of a recognized psychotherapeutic approach					
2. Can formulate a differential diagnosis and treatment plan					
3. Is familiar with DSM descriptions of disorders seen during supervision					
4. Ability to develop reasonable treatment strategies and goals					
5. Understands when and how to refer to consultants or other psychiatric resources					
6. Ability to monitor the patient's condition and modify the psychotherapeutic or psychopharmacologic approach when necessary					
Medical Knowledge					
7. Understands factors influencing psychological development from infancy to adulthood					
8. Can relate findings to biological, psychological, and social issues associated with etiology and treatment					
9. Knowledge of indications for dosing, side effects and drug interactions of : Antipsychotics, Antidepressants, Anxiolytics, Mood stabilizers, etc.					
10. Ability to recognize potential synergies and/or antagonisms in combining psychotherapy and psychopharmacology					
Practice-Based Learning and Improvement					
11. Able to appraise critically clinically relevant professional and scientific literature					
12. Applies principles of evidence-based medicine to current caseload					
Interpersonal and Communication Skills					
13. Demonstrates ability to establish rapport with patients					
14. Demonstrates an awareness of and sensitivity to cues coming from the patient and demonstrates an ability to respond appropriately to them					
15. Ability to be socio-culturally sensitive					
16. Ability to provide reassurance to reduce symptoms, improve morale and adaptation, and to prevent relapse					
17. Ability to provide education and advice about the patient's psychiatric condition and treatment					
18. Ability to involve family members, diagnose and understand family systems where appropriate					

	Below Expected	Expected	Above Expected	N/A	√ (See comments)
19. Ability to confront in a collaborative manner behaviors that are dangerous or damaging to the patient.					
20. Ability to present a case clearly					
Professionalism					
21. Sensitive to ethical issues in psychiatric practice					
22. Interest and enthusiasm					
23. Has a strong sense of responsibility for patients					
24. Ability to manage countertransference					
25. Capacity to learn and grow from supervision					
Systems-Based Practice					
26. Demonstrates awareness and responsiveness to the larger context and system of health care.					

Resident's Strengths:

Resident's Weaknesses:

Specific comments (please include question number):

Is there anything that should be known by the Evaluation Committee that would prevent this resident from being promoted to the next level? If yes, please describe (use back if necessary):

☐ **I have met with the resident to discuss this evaluation**

Signature: _____ Date: _____

FACULTY: _____ **LOCATION:** _____ **DATE:** _____

FACULTY TEACHING EVALUATION

Introduction

Students are among those who are best qualified to judge a faculty member's teaching effectiveness and to offer suggestions that will help improve his/her performance and promote the highest quality teaching standards. This information is also considered critical in decisions regarding faculty reappointment and promotion. The information provided will not identify ant student individually.

Numerical data will be summarized and given to individual faculty member, the course director and the department chair. Overall ratings of specific faculty members may also become part of an official record.
FOR EACH STATEMENT BELOW: Circle the number on the scale that best describes the faculty member with regard to his/her teaching.

In rating the faculty member's teaching, respond to each item carefully and thoughtfully, basing your decision on the characteristics described for each behavior. Avoid letting your response to some items influence your response to others. The contact time is the total number of hours (e.g. 1 hour/week x 4 weeks = 4 hours contact time).

Teaching situation (Circle all that apply):	**Contact time**:	**Student information** (circle all that apply):
Lecture Lab Small Group Discussion Clinical	1 hr 2-4 hrs 5-10 hrs >10 hrs	**Type**: Medical Graduate Other **Year**: 1 2 3 4 5 >5

1. Organization/Clarity Disorganized or unprepared, fails to communicate learning objectives, confuses students' understanding, fails to distinguish important from unimportant material.	BELOW EXPECTATIONS MEETS EXPECTATIONS EXCEEDS EXPECTATIONS 1 2 3 4 5 6 7 8 9 ☐ Not applicable or insufficient contact to judge	Sets clear goals and objectives, explains clearly, presents in an organized manner, emphasizes what is important
2. Instructional skills Emphasizes rote memorization with little or no concern to deep understanding, unable to gear instructions to a level appropriate for students, fails to understand student' questions, never provides positive reinforcement, uses teaching resources (e.g. computers, audiovisual aids) poorly.	BELOW EXPECTATIONS MEETS EXPECTATIONS EXCEEDS EXPECTATIONS 1 2 3 4 5 6 7 8 9 ☐ Not applicable or insufficient contact to judge	Promotes understanding and retention of information, encourages active participation, gives positive reinforcement for good performance, quickly grasps what students are asking and answers carefully and precisely, teaches "how to think" not just memorize, uses teaching resources (e.g. computers, audiovisual aids) effectively.
3. Enthusiasm/Stimulation Has no enthusiasm, reduces students' interest in course material, seems to have little or no interest in teaching, is boring and soporific.	BELOW EXPECTATIONS MEETS EXPECTATIONS EXCEEDS EXPECTATIONS 1 2 3 4 5 6 7 8 9 ☐ Not applicable or insufficient contact to judge	Stimulate interest to a high degree, is enthusiastic about the subject, seems to enjoy teaching, is dynamic and energetic
4. Rapport Shows no interest in students, treats students disrespectfully, fails to establish rapport, insensitive to needs of others, inaccessible to students	BELOW EXPECTATIONS MEETS EXPECTATIONS EXCEEDS EXPECTATIONS 1 2 3 4 5 6 7 8 9 ☐ Not applicable or insufficient contact to judge	Listens attentively, shows a personal interest in students, encourages a climate of mutual respect, corrects mistakes without belittling students, willingly remains accessible.

5. Supervision (Clinical, small group) Fails to communicate role expectations, provides little or no feedback, is ill prepared for formal teaching sessions, rarely, if ever, provides practice opportunities, never observes performance.	BELOW EXPECTATIONS / MEETS EXPECTATIONS / EXCEEDS EXPECTATIONS 1 2 3 4 5 6 7 8 9 ☐ Not applicable or insufficient contact to judge	Clearly communicates role expectations to students, provides frequent feedback with specific suggestions for improvement, offers special help when difficulties arise, guides skill development and provides specific practice opportunities, observes performance frequently
6. Professional Characteristics Appears arrogant, is unable to accept criticism or suggestions, blames others for his/her mistakes, fails to recognize own limitations, lacks introspection.	BELOW EXPECTATIONS / MEETS EXPECTATIONS / EXCEEDS EXPECTATIONS 1 2 3 4 5 6 7 8 9 ☐ Not applicable or insufficient contact to judge	Teaches and performs with high level of integrity, honesty and professionalism, recognizes own limitations, takes responsibility for own actions and procedures, is self-critical.
7. **Overall Teaching Effectiveness**	BELOW EXPECTATIONS / MEETS EXPECTATIONS / EXCEEDS EXPECTATIONS 1 2 3 4 5 6 7 8 9 ☐ Not applicable or insufficient contact to judge	This rating of overall teaching represents your assessment of the degree to which the faculty member possesses the knowledge, skills and attitudes necessary to be an effective teacher

NARRATIVE SECTION

DIRECTIONS

This section is designed to provide you with the opportunity to elaborate on the previous items and provide specific feedback.

A. **Summative comments**: These comments represent your overall assessment of the faculty member's teaching effectiveness. They may be quoted verbatim for decisions regarding reappointment and promotion.

B. **Formative Comments: These comments are meant for faculty only**.
What improvements could this teacher male to merit higher ratings? Please be as specific as possible and try to indicate how changes could be made in addition to what changes are necessary. All faculty want to teach effectively but need specific (and tactful) feedback in order to do so.

CLINICAL FACULTY EVALUATION FORM

1. Adjunct Clinical Faculty member being evaluated_____

2. Term Being Evaluated: From_____To_____, 200_____
(day/month) (day/month) (calendar year)

3. Your Affiliation: (check one)

_____Resident (specify **PGYI PGYII PGYIII PGYIV)**

_____Academic faculty member

_____Affiliated student (specify)_____

_____Other (specify)_____

4. Please specify your teaching/training association with this Adjunct Clinical Faculty member, e.g., group supervisor, class instructor:

_____

5. Please rank the Adjunct Clinical Faculty member in the following categories. **(all categories may not apply)**

1=unsatisfactory 2=fair 3=good 4=excellent 5=outstanding

_____ Teaching skills

_____ Clinical expertise/experience

_____ Availability

_____ Motivation

_____ Ethical standards

_____ Knowledge of subject area

_____ Ability to establish/maintain a relationship helpful to you

_____ Research skills

_____ General professional competency

6. Add any comments you feel will help the Department to determine further retention of this ACF member:

Date:_____ Signature:_____

Print name neatly:_____

ROTATION EVALUATION by RESIDENTS

Rotation Name:_____ Dates of Rotation: _____

Resident (optional):_____ PGY Level: _____

5 = excellent 4 = very good 3 = good 2 = fair 1 = poor

Education

_____ Amount and quality of supervision

_____ Quality of rounds

_____ Flexibility of service, within reasonable limits, to allow residents to pursue identified professional interests

_____ Overall learning value of the experience

Functional

_____ Smooth running of the rotation

_____ Interference with departmental teaching functions

_____ Contribution of structure of the service of patient care and resident education

_____ Attitude and performance of non-medical personnel

_____ Encouragement of interactions with allied professional consultative services

_____ Variety of patients

Experiential

_____ Satisfaction with resident's duties and/or role

_____ Support and encouragement of residents on the service

Comments:

_____

_____

_____

COURSE EVALUATION

Course Title: _____

Quarter & Year: _____

Course Director: _____

Overall Course:

Please rate this course as a whole on the following dimensions (circle one number for each item):

Highly impractical	1	2	3	4	5	6	7	Highly practical
Not useful	1	2	3	4	5	6	7	Highly useful
Low quality	1	2	3	4	5	6	7	High quality
Low enjoyment	1	2	3	4	5	6	7	Highly enjoyable

By Lecturer:

Please use the same 1-7 scale as above to evaluate each lecturer (1= least; 7=most)

Lecturer / Topic (# lectures given)	**Organization/ Clarity** *(mark 1-7)*	**Promotes Understanding & Retention** *(mark 1-7)*	**Enthusiastic/ Stimulates Interest** *(mark 1-7)*	**Lecture Content** *(mark 1-7)*	**Sensitivity & Responsiveness Toward Students** *(mark 1-7)*	**Overall Teaching Effectiveness** *(mark 1-7)*

Briefly state what you found most useful in course:

Briefly state what you found least useful:

Please state your suggestions to improve the course & increase student improvement:

APPENDIX E

AN INVESTIGATIVE PSYCHIATRY CURRICULUM FOR RESIDENTS

Although not formally a part of a psychopharmacology curriculum, this outline for an optional model investigative psychiatry (or psychopharmacology) curriculum has been included, because it can enhance the core psychopharmacology curriculum and can be given in parallel with it. This material was developed by Professors Daniel Stern and Ira Glick at the Cornell University Medical College in the 1980s. This type of course is still relevant 30 years later. Keep in mind that the teaching of research on a "how-to" basis does not replace the hands-on experience carried out under the supervision of a good psychopharmacology research mentor.

The Investigative Psychiatry Curriculum can be divided into three main types of learning experiences:

A. General academic exercises relevant to the Investigative Psychiatry Curriculum. These include Grand Rounds, Journal Club, and special "A Research in Progress" rounds (see Below).

B. Core courses:

Core Course I: Research methods and principles:

This course can be a weekly, hour-long, 16-week seminar taught in the spring of the PGY 2 year. It can be open to fellows and psychology interns, as well as PGY 2 residents. The format consists of eight seminars covering the process of arriving at the question to be asked; the need for, value of, and types of hypotheses; research design (i.e., common basic designs and their variants); the nature and types of variables; methods of observation and data collection; analysis of data, basic statistical procedures used in clinical behavioral sciences; and appropriate use of the computer as a tool. These eight seminars can alternate with eight presentations by invited members of the faculty. Presenting to the trainees one of their own papers already published in a referred journal.

Prior to the presentation, the trainees should have a week to study the paper. The trainees and instructors will then utilize the time by asking the author questions about the many decisions made about any and all aspects of that research (the central question, methods, reliability, etc). We expect that this kind of dialogue about an actual piece of investigation with the person who conceived and

conducted it will serve several purposes. Used in alternation with the seminars, it will enliven and bring greater meaning to the lectures and vice versa. It will acquaint the residents at an early stage with the ongoing research interest of their own faculty. Finally, it will combine a teaching exercise in learning the basics of principles and methods of research with a good introduction to research evaluation.

A list of topics for the eight seminars and for the eight paper presentations follows:

Week 1: Arriving at a question to be investigated.

Week 3: Hypotheses: the need for them and the various types.

Week 5: Research design: types of general design and their variants; advantages and disadvantages of different designs.

Week 7: The nature of independent and dependent variables, with particular reference to demographic issues in subject selection.

Week 9: Methods of observation and data collection in psychiatric investigation.

Weeks 11-13: Analysis of data; basic statistic procedures used in psychiatric research, their rationale and appropriate use.

Week 15: The computer as an analytical tool: appropriate and inappropriate.

Core Course II: Conceptualizing, operationalizing, and conducting an actual Investigative Project: This 12-week seminar at the beginning of the PGY 3 year can focus on the translation of an idea or question into an operational research design. This seminar can be conducted in a format in which the residents do, in fact, have to complete a scholarly paper by the time of graduation at the end of the PGY 4 year. For the purposes of this program, this training requirement is used as a springboard to create a learning experience in the translation of clinical questions into workable research designs. Each student should struggle with the process of going from idea to finished research design and method, which must remain as true as possible to the original question. At each meeting, a different resident can present his proposal. The instructors, along with a statistician and the group, should attempt to achieve three goals at each presentation: to help the resident get his/her proposal into shape as a realistic and viable proposal, given the fact that they have only limited time over the following year and a half to complete the project; to continue the

education of principles and methods in investigative psychiatry begun in the PGY 3 year course; and to further the trainees' acquaintance with statistical and computer knowledge in a situation where these tools are of immediate importance to them.

Developing research strategies for addressing clinical questions:

In the early to middle part of the PGY 4 year (i.e., second trimester), by which time the residents will have had significant inpatient, outpatient, emergency room, and liaison psychiatry experience, they can participate in a 12-week course designed as a practice exercise in identifying real clinical problems, questions or issues on the clinical services to which they are or have been assigned, and developing investigative strategies for addressing these problems. The identification of the problems and the development of strategies will be a group process. While these research strategies are teaching exercises, some may spawn actual projects. We suggest targeting identified priority populations in formulating the clinical problems to be addressed.

Core Course III - Evaluation of resident research projects:

A 10-week seminar at the end of the PGY 4 year can be devoted to another approach to research evaluation. In this case, the seminar will be a follow-up to the seminar mentioned above (core course II), i.e., each resident will present the completed results of his/her research endeavor (now a year and a half later) to the same group with the same instructors. The critical evaluation of each will constitute the learning material.

Note, that the above four courses have continuity in that they have the same group members, meet with the same instructors and consider related subject matter from different vantage points over a three year span.

Other academic courses as they relate to Investigative Psychiatry: Michelle Pato, M.D., Professor of Psychiatry now at the University of Southern California School of Medicine, has in the last decade taught a similar series of courses, which have been very positively received by residents. She can be reached at 323-226-5588 for further information.

As described above, in each of the major academic courses a small number (approximately 10%)

of seminars will be separated from the ongoing course and refocused on the central issues of the evaluation and the utilization of investigative psychiatry as it relates to the specific course material.

APPENDIX F

GUIDELINES FOR PHARMACOTHERAPY FOLLOW UP VISITS AND QUALITY OF CARE

A Statement from the Psychopharmacology Management Task Force
A Joint Task Force of the MPS and MNA[1]
January 2000
Revised by Dr. James Ellison 5/21/10, Reviewed 2014

As our practices and clinics seek to use resources efficiently in a heavily managed treatment environment, we are witnessing a trend toward briefer and more limited interactions of patients with the clinicians who prescribe their psychiatric medications. Fifteen minute "med visits" have become the norm in both institutional and private practice settings, raising many clinicians' concerns about how to sustain the quality of care when visits are brief and in many cases infrequent as well. In light of these concerns, a Joint Task Force consisting of members of the Massachusetts Psychiatric Society and Nurses Association convened periodically from July through November 1999 to address the question of what constitutes a sufficient follow up visit for a patient receiving psychiatric medications.[1] This document summarizes the elements of such visits.

This Statement should not be construed as a standard of care. Standards of medical care are determined on the basis of all clinical information available for an individual patient and are subject to change as our knowledge and technologies evolve. The judgment of a prescribing clinician should always be the basis of clinical decision-making regarding pharmacotherapy.

Background: With each passing year, the practice of *pharmacotherapy*, which requires expertise in the prescribing and monitoring of medications for mental disorders, has become more complex. As more and more medications become available, the knowledge required for their optimal usage, side effect management, and prevention of adverse drug interactions increases in volume and complexity. Comparable advances are occurring in other specialties of medicine, and to the extent that patients have comorbid medical problems, the time required for the practitioner to think through the relevant medical issues has also increased. Furthermore, partially as an aspect of Managed Care**,** treatment has increasingly become fragmented as patients change providers, receive distinct portions of their care from providers who work in different locations, communicate with each other only to a limited extent, and participate in systems undergoing rapid changes in policies regarding the provision of care and the dispensing of medications. Communication has become further complicated as a consequence of HIPAA-mandated protections of patient confidentiality. More, rather than less, time is now required to obtain and process the information necessary to treat appropriately and avoid preventable errors.

During the past decade, as the average duration of psychiatric inpatient stays has dramatically diminished in length, the acuity of outpatient practices has greatly increased. This Task Force has been especially concerned about the care of the severely and persistently mentally ill, who are often treated in busy outpatient practices where the pharmacotherapy of many severely ill and complex patients is provided by a small number of dedicated and heavily utilized nurse clinical specialists or psychiatrists. The

1 Members of the Task Force were Beverly Anderson RN CS, Barbara Coffey MD, James Ellison MD MPH (Chair), Donald Goff MD, Richard Greenberg MD, Julianna Grecoe RN CS, Michael Hanau MD, and David Osser MD. Gene Fierman MD attended as well, offering advice and collaborative support. Lloyd Sederer MD made additional valuable suggestions.

responsibilities and tasks of the pharmacotherapy practitioner have increased at the same time that visit length has been reduced by direct or indirect pressures on the clinicians.

Reviewing the tasks that must be addressed during a psychopharmacology follow up visit, the MPS/MNA Task Force expressed concern about the hazards inherent in very brief psychopharmacology visits, and proposed that an average psychopharmacology visit should be recognized as requiring 30 minutes. In support of this principle, the Task Force submitted the following list of elements that can contribute to a pharmacotherapy follow-up visit of appropriate quality. Not all elements apply to every patient, every visit, or every clinical setting:

- Review records from the preceding visit to determine which aspects of the treatment plan have been completed and which remain to be carried out.

- Take an interval history. Note changes in behavior, mental status, functioning, laboratory findings, physical condition, and social factors since last visit or note. Address any monitoring issues raised in the previous note.

- Assess impact of interventions including medications (benefits and side effects) since last visit, and degree of progress toward treatment goals.

- Assess current mental status, including risks for suicide or aggressive behavior. Sometimes physical assessment, such as vital signs and/or brief neurological examination (e.g. for parkinsonian side effects or tardive dyskinesia) is required.

- Reassess diagnosis, particularly if response to medication and other treatments is not satisfactory. In particular, consider possibly overlooked medical causes of the symptoms and the possibilities of covert and overt substance abuse or dependence. Note ongoing and new medical diagnoses and treatments.

- In some settings, rating scales to quantify some of the above observations are required.

- Update the treatment plan, applying evidence-based interventions whenever appropriate. Consultation with appropriate references, practice guidelines, Physicians' Desk Reference, or other decision support resources is often helpful.

- Discuss and explain the plan with the patient, obtaining informed consent is appropriate. The latter includes discussion of significant alternatives that might be considered and the risks and benefits of the recommended plan and the alternatives. Written consent form is now required in some settings for all psychiatric medications.

- Instruct the patient on procedures for changes in dosage (titrations, crossovers, add-ons), and procedures to follow in the event of adverse medication responses or symptom exacerbation. For many patients, this information should be provided in both verbal and written form.

- Write the prescription, taking into account appropriate regulatory recommendations.

- Schedule the subsequent visit, give the patient an appointment card, and assure that the scheduled appointment is recorded in whatever schedules are used to keep track of future appointments.

- Document the visit with a progress note that includes the data since last visit, the assessment and diagnoses, and the relevant part of a treatment plan.

- Arrange for needed tests, consultations, discussions with others, and record retrieval that are part of the treatment plan. This is an increasingly complex and time consuming aspect of the work of a pharmacotherapy follow-up visit, especially when the patient has complex medical as well as psychiatric problems. These activities, nevertheless, are essential for confirming the diagnostic impression, ruling out other conditions in the differential diagnosis, and assuring the most appropriate treatment choices.

- Communicate with other involved care providers such as individual psychotherapists, family or group psychotherapists, primary care providers, medical specialists, and care-providing family members, visiting nurses, or others offering the patient services relevant to mental health conditions. When relevant, meet and/or communicate with family members or a legal guardian regarding treatment.

- Complete ancillary paperwork not mentioned above including prior authorizations, lab test orders, consultation requests, monthly medication sheets, log book information, and prepare any necessary correspondence that has been authorized. Prior authorizations in particular have become a very time-consuming element of pharmacotherapy practice in light of the proliferation of medications and the complex, varying formulary requirements adopted by different insurers. Additional paperwork might include communications with diverse parties such as lawyers, disability payers, housing agencies; agencies that issue transportation passes; and other clinical programs that are considering accepting the patient for services.

- Remember that the care of the patient includes time-consuming activities that extend beyond the confines of the follow-up visit, including but not limited to the authorization of prescription refills not obtained during a session, responsibility for 24 hour availability for crisis consultation, arrangement of coverage during absences, seeking of consultation or supervision as appropriate, and attendance at continuing education activities to maintain current knowledge of pharmacotherapy. The importance of including time for the answering of routine phone calls is critical, because such calls serve to repeat or clarify aspects of the treatment plan, to request reordering of lost medications, or to provide information that the patient failed to remember during the visit. When such calls go unanswered, treatment plan adherence and the cost effectiveness of care are jeopardized.

APPENDIX G

PSYCHOPHARMACOLOGY ALGORITHMS

David Osser, Editor

Evidence-supported psychopharmacology algorithms and guidelines have an important role in promoting more efficient approaches to patient care and minimizing unproductive practice variations.

Below is a list of some of the major algorithm and guidelines projects and information about how to access their academic products. Current as of Nov. 14, 2014. They are not listed in order of importance but the editor of this list took the liberty of listing first the algorithm project of which he is the general editor.

- Psychopharmacology Algorithm Project at the Harvard South Shore Program (PAPHSS). Their current website is designed for access on mobile smartphones and tablets: www.psychopharm.mobi. Evidence-based algorithms for bipolar depression, bipolar mania, schizophrenia, psychotic depression, social anxiety disorder and PTSD are complete. All have been published in peer reviewed journals. Workgroups are active in preparing updates and new algorithms.
- The International Psychopharmacology Algorithm Project (IPAP); www.ipap.org. Presently includes algorithms for schizophrenia (endorsed by the World Health Organization), PTSD, GAD, and Substance Use Disorders.
- Texas Medication Algorithm Project (TMAP): no longer active, but their publications may be accessed at Texas Medication Algorithm Project.
- American Psychiatric Association (APA) Practice Guidelines; www.psych.org/psych_pract/treatg/pg/prac_guide.cfm. Schizophrenia, major depression, bipolar disorder, panic disorder, PTSD, eating disorders, and 7 others.
- British Association of Psychopharmacology (BAP) Consensus Statements. www.bap.org.uk
- German Algorithm Project for Depression. Correspond with Michael.Bauer@charite.de or Mazda.Adli@charite.de
- National Institute for Health and Clinical Excellence (NICE); www.nice.org.uk. Many disorders covered.
- Chinese Psychopharmacology Algorithm Project (CPAP); Depression, schizophrenia, bipolar disorder, ADHD. Correspond with Xin Yu, M.D. at yuxin@bjmu.edu.cn
- Canadian Network for Mood and Anxiety Treatments (CANMAT); correspond with Lakshmi Yatham, M.D. at l.yatham@ubc.ca.
- National Guideline Clearinghouse; www.guideline.gov. Lists over 1,000 guidelines that have been updated at least once on a range of medical problems.

APPENDIX H

PSYCHOPHARMACOLOGY AND THE INTERNET

Leslie Citrome, MD, MPH

New York Medical College

Valhalla, NY

Internet resources are now essential in order to keep up with the medical literature. Whether you are a clinician, researcher, or both, the internet provides a means of quickly accessing information when you need it and also provides a relatively painless method of receiving updates for topics you have a special interest in. As with all information you need to be mindful of the source. The National Library of Medicine's PubMed site is a gateway to highly credible peer-reviewed journal articles in contrast to a general internet search engine such as Google, Yahoo or Bing that will direct you to assorted blogs, press releases and other sources of information that you will need to vet for yourself.

The web is somewhat ephemeral. Although there are archives of web content available you can't always assume that what you find one day will be there the next. Even for journal articles this can be an issue as access rights (free vs. paid) can change depending on the publisher or your institution. Thus if you find something of interest, it would be a wise precaution to store a copy locally on your computer. Over time you will develop an electronic reference library that is portable, up-to-date, and customized to your needs.

Perhaps the most useful recent advance in how we can use the internet is the development of

"push" technology. In its simplest form this would consist of an email sent to you on a regular basis by an organization, publisher or "aggregator" containing a list of articles or news stories that contain certain text words of interest that you pre-specify when you subscribe (for example "antipsychotic" AND "schizophrenia" AND "adolescent" if your primary focus was with that population). You can also subscribe to receive tables of contents of journals (the tables of contents are free but the content may not be).

Details on leveraging your internet access can be found in:

1. Citrome L, Moss SV. How to efficiently maintain your own electronic resource library. J Clin Psychiatry. 2010 Feb;71(2):207-8.
2. Citrome L, Moss SV, Graf C. How to search and harvest the medical literature: let the citations come to you, and how to proceed when they do. Int J Clin Pract. 2009 Nov;63(11):1565-70.
3. Citrome L. Creating a more productive, clutter-free, paperless office: a primer on scanning, storage and searching of PDF documents on personal computers. Int J Clin Pract. 2008 Mar;62(3):363-6.
4. Citrome L. Beyond PubMed: Searching the "Grey Literature" for Clinical Trial Results. Innov Clin Neurosci. 2014 Jul;11(7-8):42-6.

If you or your library does not subscribe to J Clin Psychiatry or Int J Clin Pract, PDF copies of the papers are available from the author by email at citrome@cnsconsultant.com. Innov Clin Neurosci is an open-access journal. As a general rule, if you want to get ANY article it is almost always possible to email the corresponding author of that article and request a copy.

Websites I can't live without are:

1. The National Library of Medicine's PubMed (literature search), easily reachable via http://www.pubmed.com. You will want to subscribe to alerts and be able to save your searches by going to myNCBI http://www.ncbi.nlm.nih.gov/sites/myncbi/. You may also want to try out Google Scholar (not to be confused with the regular Google search engine) at http://googlescholar.com.
2. The Food & Drug Administration's website: http://www.fda.gov and specifically, http://www.accessdata.fda.gov/scripts/cder/drugsatfda

Perhaps the largest source of medical information, including CME and promotional, can be found at http://www.medscape.com

Other resources:

Publishing houses
BioMed Central (Springer) http://www.biomedcentral.com/

Informaworld (Taylor & Francis) http://www.informaworld.com/

LWWonline (Wolters Kluwer) http://www.lwwonline.com/

Nature.com (Nature Publishing Group) http://www.nature.com/

ScienceDirect (Elsevier) http://www.sciencedirect.com/

SpringerLink (Springer) http://springerlink.com/

Wiley Online Library (Wiley-Blackwell) http://onlinelibrary.wiley.com/

Aggregators
Amedeo Medical Literature Guide http://www.amedeo.com/

EBSCOhost http://www.ebscohost.com/

HighWire Press http://highwire.stanford.edu/

IngentaConnect http://www.ingentaconnect.com/

MD Consult http://www.mdconsult.com/

MDLinx http://www.mdlinx.com/

OvidSP http://www.ovid.com/

Newsletters

Journal Watch http://www.jwatch.org/

M.J. Powers http://alertpubs.com/

The Medical Letter http://themedicalletter.com/

Evidence based medicine resources

ACP Journal Club http://www.acpjc.org/

AHRQ (Agency for Healthcare Research and Quality) http://www.ahrq.gov/

Bandolier http://www.medicine.ox.ac.uk/bandolier/

BMJ Evidence Centre http://group.bmj.com/products/evidence-centre/evidence-updates

The Cochrane Collaboration http://www.cochrane.org/

Essential Evidence Plus http://www.essentialevidenceplus.com/

Faculty of 1000 Medicine http://www.f1000medicine.com/

McMaster Online Rating of Evidence http://hiru.mcmaster.ca/More/

APPENDIX I

GENEMEDRX DRUG INTERACTION SOFTWARE BY CLINICIANS, FOR CLINICIANS

GeneMedRx is a powerful, Internet based software tool, used to identify potential drug interactions based on individual patient regimens. GeneMedRx is the upgraded, pharmacogenetics-ready version of Mental Health Connections P450 Interactions program, in use by physicians and researchers since 1997.

Unlike other DDI programs, GeneMedRx uses an algorithm to predict and weight DDIs for drug combinations not reported in the literature. It is constantly updated to keep pace with the dozens of reports appearing each month.

- Easy to understand, color-coded interface accessible from any computer with Internet access. Detailed explanation of mechanisms and references readily available CD version available summer 2006.

- Program can be used to search for alternative drugs when interactions are detected and run what-if scenarios when contemplating adding or subtracting a drug.

- Points out the impact of genetic variation on medicines metabolized by cytochromes having polymorphic genes. These polymorphisms are present in more than 50% of patients and apply to one-third of the most commonly prescribed medicines.

- Contains 2000 drugs and metabolites including foods, herbals, OTCs, and recreational drugs.

- Evidence base directly accessible through 1500 notes and 4500 pub med links.

Program Authors:

Jessica R. Oesterheld, M.D., Mental Health Connections Medical Director, is a frequent author and lecturer on metabolism based pharmacology. Her interest arose from clinical experience with adverse drug reactions caused by CYP based drug interactions.

Neil B. Sandson, M.D., is Director of the Division of Education and Residency Training at Sheppard Pratt Health System.

David N. Osser, M.D., is a clinical psychopharmacology consultant and a member of the International Psychopharmacology Algorithm Project.

Doctors who use GeneMedRx have enhanced understanding of metabolism based adverse drug interactions and are able to provide safer, more effective treatments for many of their patients.

www.genemedrx.com.

APPENDIX J

RECOMMENDED READING LIST FOR RESIDENTS

Thomas Raedler, M.D. editor

This first attempt at a list of recommended readings was put together with the help of many national and international experts in psychopharmacology and clinical psychiatry. The focus was on neurobiology and pharmacological treatment of psychiatric disorders. The main goal of this list was to compile a list of readings that are considered to be 'essential'. Many of these readings may be considered classic papers over time.

At the very least, it suggests papers on a particular issue. And we should add what we emphasize in our training program today is how to find and update our knowledge base, i.e., how to use PubMed, Google, etc. What is important in psychopharmacology training today is the evidence-base for current practice and how to stay current and be a personally sophisticated and critical reader (see the Peselow lecture on "Evaluating the Research Literature").

For obvious reasons, this list can only contain a fraction of the relevant literature. Many other relevant papers were not included in this list. This list should not replace the use of textbooks, nor should this list be used instead of independent studies of the relevant literature. This list of recommended readings should help residents identify manuscripts that they should be aware of.

We encourage readers to send us (c/o Thomas Raedler, Foothills Medical Centre, TRW Building, Suite 4D62, 3280 Hospital Drive NW, Calgary, AB, Canada, T2N 4Z6; Thomas.raedler@albertahealthservices.ca) their suggestions for what they recommend for their residents.

Bipolar disorder / mood stabilizers

- Goodwin FK, Fireman B, Simon GE, Hunkeler EM, Lee J, Revicki D. Suicide risk in bipolar disorder during treatment with lithium and divalproex. JAMA. 2003;290:1467-73.
- Perlis RH, Ostacher MJ, Patel JK, Marangell LB, Zhang H, Wisniewski SR, Ketter TA, Miklowitz DJ, Otto MW, Gyulai L, Reilly-Harrington NA, Nierenberg AA, Sachs GS, Thase ME.Predictors of recurrence in bipolar disorder: primary outcomes from the Systematic Treatment Enhancement Program for Bipolar Disorder (STEP-BD). Am J Psychiatry. 2006;163:217-24.

Child and Adolescent Psychiatry

- Correll CU, Manu P, Olshanskiy V, Napolitano B, Kane JM, Malhotra AK. Cardiometabolic risk of second-generation antipsychotic medications during first-time use in children and adolescents. JAMA. 2009;302:1765-73.
- March J, Silva S, Petrycki S, Curry J, Wells K, Fairbank J, Burns B, Domino M, McNulty S, Vitiello B, Severe J; Treatment for Adolescents With Depression Study (TADS) Team. Fluoxetine, cognitive-behavioral therapy, and their combination for adolescents with depression: Treatment for Adolescents With Depression Study (TADS) randomized controlled trial. JAMA. 204; 292:807-20.

- Walkup JT, Albano AM, Piacentini J, Birmaher B, Compton SN, Sherrill JT, Ginsburg GS, Rynn MA, McCracken J, Waslick B, Iyengar S, March JS, Kendall PC. Cognitive behavioral therapy, sertraline, or a combination in childhood anxiety. N Engl J Med. 2008; 359:2753-66.

General psychiatry

- Hyman SE. Can neuroscience be integrated into the DSM-V? Nat Rev Neurosci 2007;8:725-732.
- Insel TR, Scolnick EM. Cure therapeutics and strategic prevention: raising the bar for mental health research. Mol Psychiatry. 2006;11:11-7.
- Moller HJ, Seemuller F, Schennach-Wolff R, Stubner E, Ruther E and R Grohmann. History, background, concepts and current use of comedication and polypharmacy in psychiatry. Intern. J. of Neuropsychopharmacology. 2014; 17(7):983-996.

Geriatric Psychiatry

- Jeste DV, Blazer D, Casey D, Meeks T, Salzman C, Schneider L, Tariot P, Yaffe K. ACNP White Paper: update on use of antipsychotic drugs in elderly persons with dementia. Neuropsychopharmacology. 2008; 33:957-70.

Major depression / antidepressants

- Blier, P. Rational site-directed pharmacotherapy for major depressive disorder. Intern. J. of Neuropsychopharmacology. 2014; 17(3): 997-1008.
- Fournier JC, DeRubeis RJ, Hollon SD, Dimidjian S, Amsterdam JD, Shelton RC, Fawcett J. Antidepressant drug effects and depression severity: a patient-level meta-analysis. JAMA. 2010;303:47-53.
- Krishnan V, Nestler EJ. The Molecular Biology of Depression. Nature 2008;456:894-902
- Ressler KJ, Mayberg HS. Targeting abnormal neural circuits in mood and anxiety disorders: from the laboratory to the clinic. Nat Neurosci. 2007;10:1116-24.
- Rosenthal NE. Diagnosis and treatment of seasonal affective disorder. JAMA. 1993;270:2717-20.
- Rush AJ, Trivedi MH, Wisniewski SR, Nierenberg AA, Stewart JW, Warden D, Niederehe G, Thase ME, Lavori PW, Lebowitz BD, McGrath PJ, Rosenbaum JF, Sackeim HA, Kupfer DJ, Luther J, Fava M. Acute and longer-term outcomes in depressed outpatients requiring one or several treatment steps: a STAR*D report. Am J Psychiatry 2006; 163:1905–1917
- Sahay A and Hen R. Adult hippocampal neurogenesis in depression. Nature Neuroscience 2007;10: 1110-1115
- Zarate CA Jr, Singh JB, Carlson PJ, Brutsche NE, Ameli R, Luckenbaugh DA, Charney DS, Manji HK. A randomized trial of an N-methyl-D-aspartate antagonist in treatment-resistant major depression. Arch Gen Psychiatry. 2006;63:856-64.

Schizophrenia / antipsychotics

- Fleischhacker W.W. & H Uchida. Critical review of antipsychotic polypharmacy in the treatment of schizophrenia. Intern. J. of Neuropsychopharmacology. 2014; 17(7):1083-1093.

- Honer WG, Thornton AE, Chen EY, Chan RC, Wong JO, Bergmann A, Falkai P, Pomarol-Clotet E, McKenna PJ, Stip E, Williams R, MacEwan GW, Wasan K, Procyshyn R. Clozapine and Risperidone Enhancement (CARE) Study Group. Clozapine alone versus clozapine and risperidone with refractory schizophrenia. N Engl J Med. 2006;354:472-82.
- Kahn RS, Fleischhacker WW, Boter H, Davidson M, Vergouwe Y, Keet IP, Gheorghe MD, Rybakowski JK, Galderisi S, Libiger J, Hummer M, Dollfus S, López-Ibor JJ, Hranov LG, Gaebel W, Peuskens J, Lindefors N, Riecher-Rössler A, Grobbee DE. EUFEST study group. Effectiveness of antipsychotic drugs in first-episode schizophrenia and schizophreniform disorder: an open randomised clinical trial. Lancet. 2008;371:1085-97.
- Kane J, Honigfeld G, Singer J, Meltzer H. Clozapine for the treatment-resistant schizophrenic. A double-blind comparison with chlorpromazine. Arch Gen Psychiatry. 1988;45:789-96.
- Kapur S. Psychosis as a state of aberrant salience: a framework linking biology, phenomenology, and pharmacology in schizophrenia. Am J Psychiatry. 2003;160:13-23.
- Leucht S, Corves C, Arbter D, Engel RR, Li C, Davis JM. Second-generation versus first-generation antipsychotic drugs for schizophrenia: a meta-analysis. Lancet. 2009;373:31-41.
- Lewis DA, Hashimoto T, Volk DW. Cortical inhibitory neurons and schizophrenia Nature Reviews Neuroscience 2005; 6,312-324.
- Lieberman JA, Stroup TS, McEvoy JP, et al. Effectiveness of antispcyhotic drugs in patients with chronic schizophrenia. N Engl J Med 2005;353:1209-1223.
- Kraemer C, Glick ID, Klein DF: Clinical trials design lessons from the CATIE study. American J Psychiatry, 166:1222-1228, 2009.
- John M. Davis; Nancy Chen; Ira D. Glick. A Meta-analysis of the Efficacy of Second-Generation Antipsychotics. Arch Gen Psychiatry, Jun 2003;60:553-564.
- McGorry PD, Yung AR, Phillips LJ, Yuen HP, Francey S, Cosgrave EM, Germano D, Bravin J, McDonald T, Blair A, Adlard S, Jackson H. Randomized controlled trial of interventions designed to reduce the risk of progression to first-episode psychosis in a clinical sample with subthreshold symptoms. Arch Gen Psychiatry. 2002;59:921-8.
- Meltzer HY, Alphs L, Green AI, Altamura AC, Anand R, Bertoldi A, Bourgeois M, Chouinard G, Islam MZ, Kane J, Krishnan R, Lindenmayer JP, Potkin S. International Suicide Prevention Trial Study Group. Clozapine treatment for suicidality in schizophrenia: International Suicide Prevention Trial (InterSePT). Arch Gen Psychiatry. 2003;60:82-91.
- Tiihonen J, Lönnqvist J, Wahlbeck K, Klaukka T, Niskanen L, Tanskanen A, Haukka J. 11-year follow-up of mortality in patients with schizophrenia: a population-based cohort study (FIN11 study). Lancet. 2009;374:620-7.
- *Glick ID, Correll CU, Altamura AC, Marder SR, Csernansky JG, Weiden PJ, Leucht S, and Davis JM.* Mid-Term and Long-Term Efficacy and Effectiveness of Antipsychotic Medications for Schizophrenia: A Data-Driven, Personalized Clinical Approach. Journal of Clinical Psychiatry, Dec. 2011.

Substance-abuse

- Anton RF et al. Combined pharmacotherapies and behavioral interventions for alcohol dependence. The COMBINE Study: a randomized controlled trial. JAMA 2006;295:2003-2017.
- Kalivas PW, Volkow ND. The neural basis of addiction: a pathology of motivation and choice. Am J Psychiatry 2005;162:1403-1413.

Suicide

- Mann JJ, Apter A, Bertolote J, Beautrais A, Currier D, Haas A, Hegerl U, Lonnqvist J, Malone K, Marusic A, Mehlum L, Patton G, Phillips M, Rutz W, Rihmer Z, Schmidtke A, Shaffer D, Silverman M, Takahashi Y, Varnik A, Wasserman D, Yip P, Hendin H. Suicide prevention strategies: a systematic review. JAMA. 2005; 294:2064-74.
- Maris RW. Suicide. Lancet. 2002;360:319-26.

Women's Health

- ACOG Committee on Practice Bulletins--Obstetrics. ACOG Practice Bulletin: Use of psychiatric medications during pregnancy and lactation. Obstet Gynecol. 2008;111:1001-20.