

## APPENDIX A

### Representative Psychopharmacology Curricula From Various Programs

This appendix is divided into an introduction, a summary of findings, and a capsule description of each program surveyed. Most readers will probably only want to read the first two sections.

#### Introduction

In preparation for this model curriculum, a survey was proposed of existing psychopharmacology training programs throughout the United States. It was expected that the strengths and weaknesses of existing programs would provide the basis for the development of a new model psychopharmacology curriculum.

It was decided to collect survey data by telephone interview. A broad range of residency training programs were selected to represent differences in educational emphases and different types of residency locations (e.g., university, VA hospital, state hospital).

It must be recognized at the outset that the data gathered by telephone interview can only be considered descriptive. That is, there was no way of judging the quality of the psychopharmacology training program as a whole, or the quality of any of its components. For example, all psychiatric residency programs interviewed have lectures and seminars in psychopharmacology for residents. It was impossible to determine by telephone, however, whether or not any lecture or seminar series adequately conveyed basic and comprehensive psychopharmacologic information, whether it had any impact on clinical and therapeutic skills of the resident, or whether it was simply a dry, boring, and rather useless recital of pharmacologic facts, with little clinical relevance.

The data must also be reviewed in the context of individual philosophies of each psychiatric residency program. Thus, training in a more biologically-oriented residency program may stress education in basic neurobiology, pharmacodynamics, and pharmacokinetics, with very little reference to the relationship of psychopharmacology and psychotherapy. A more psychoanalytically oriented program, on the other hand, may choose to emphasize the 'art of prescribing' and the dynamic meaning of drug taking for psychiatric patients, with a less rigorous review of biological psychiatry.

These survey data do not indicate the number of residents that attend various psychopharmacologic education programs. Although basic lectures and seminars are usually attended by all residents of a given year, some of the more advanced programs certainly are attended by fewer residents, although the percentage within any training program is not known. Therefore, an overall qualitative appraisal of psychopharmacology teaching in the surveyed residency programs can only be estimated.

#### Summary of Findings

Bearing in mind the caveats that limit the interpretation of these survey data, the following generalizations are apparent: Although there is variability in psychopharmacology training among the programs, there is considerable similarity and overlap in general teaching styles. In particular, programs are similar in the following ways:

1. Almost all programs offer an introductory lecture series or crash course in psychopharmacology for beginning residents. It is likely that much of what is learned in this early time is more or less permanently imprinted on the resident, including misinformation.
2. A considerable amount of psychopharmacology teaching, as one would expect, occurs on inpatient and outpatient units in relationship to direct patient care. This is usually on an individual supervisory basis.
3. Seminars and formal lectures provide a major portion of psychopharmacology teaching, although their clinical usefulness is unknown.
4. Peer supervision is a relatively under-utilized form of psychopharmacology teaching in the programs that have been surveyed.

5. No programs specifically include a formal evaluation of psychopharmacology education. Many of the programs participate in the national multiple-choice testing of resident knowledge in different years.

### **Survey Interviews**

#### **Site A**

In the PGY II year, there are eight introductory lectures in psychopharmacology. Most psychopharmacology is taught in the context of supervised patient care. In the PGY III year, eighteen one-hour lectures in psychobiology and psychopharmacology are offered. In the PGY IV year, there is a journal club which includes psychopharmacology as 50% of the reading.

#### **Site B**

In the PGY III year, a "crash" course in basic psychopharmacology is presented during the first four weeks of the residency. From September to December of the first year, there is a four-month course lasting one hour weekly which is devoted exclusively to psychopharmacology, including ECT. During a six-month rotation on the Acute Psychiatric Service (emergency room), there is also a one and one-half hour talk.

In the PGY III year, residents rotate through a Psychopharmacology Clinic, and have a two-hour conference weekly. There is individual supervision for all psychopharmacology cases, with emphasis on new patient evaluations and continuing psychopharmacology treatment. The weekly Psychopharmacology Conference lasts one and one-half hours, and the rotation lasts for six months. During the conference, the residents formally present cases to senior faculty and visiting lecturers. Residents on the Consultation-Liaison Service also focus on the interaction of psychopharmacological and medical drugs on an individual case basis. There are no formal lectures in psychopharmacology in the Consultation-Liaison Program. During this year there is also a psychopharmacology elective available which consists of one-half day per week of extra work in the Psychopharmacology Clinic.

#### **Site C**

In the PGY II year, at the beginning of the residency program, there is a required three-month Didactic Psychopharmacology program with twelve one and one-half hour formal lectures. This is accompanied by two or three months of "Somatic Therapy rounds" with the Chief Resident. During this time the Chief Resident collects psychopharmacology consultations of patients at the hospital, presents patients to the group of new residents, and discusses psychopharmacology treatment. Throughout this year, there is individual ongoing supervision of individual cases, including psychopharmacology teaching.

In the PGY III year, during the rotation in Child Psychiatry, there is one lecture on psychopharmacology. During the Consultation-Liaison rotation, there are lectures on psychiatric medications interacting with other medications and other lectures on polypharmacy. Six to eight lectures per year focus specifically on psychopharmacology.

In the PGY IV year, there is a weekly psychopharmacology research seminar, which is elected by about three residents. There is also a weekly psychopharmacology journal club which is elected by about three residents.

**General Comments.** Over the three years of the residency, there is a required reading seminar which focuses on major diagnoses and psychopharmacologic intervention. It is organized by diagnostic category. There are about 20 sessions, lasting one and one-half hours for each year of the program.

#### **Site D**

In the PGY II year, during the summer months of the first residency year, there is a didactic orientation which includes ten formal lectures, covering all psychopharmaceutical drug classes. Throughout the remainder of this year, very pragmatic lectures are held according to each psychiatric syndrome, and including their treatments. Approximately three sessions are devoted to

schizophrenia and three to affective disease, for example. Also, during the first year, residents rotate through a VA hospital and receive direct psychopharmacology supervision of individual cases.

In the PGY III year, the residents on the Consultation-Liaison rotation focus on drug interactions and the use of psychopharmaceuticals in medically ill patients. There are many lectures (15 to 20) during this year, and some of them include a major psychopharmacology component. During this year, residents also work in the outpatient department, which focuses primarily on psychotherapy, with little psychopharmacology input.

During the PGY IV year, there is no formal didactic psychopharmacology. Some residents elect to do research in psychopharmacology. Others elect rotations through the VA or Consultation services and get additional exposure.

#### **Site E**

In the PGY II year, eight one-hour sessions in psychopharmacology are included in a series of formal seminars that form the introduction to psychiatry. Psychopharmacology presentations are divided between case presentations, formal lectures, or assigned reading.

In the PGY III year, during the first half of this residency year, as part of the outpatient rotation, there is a series of reading seminars associated with each outpatient clinic. Eight to ten reading seminars are associated with each outpatient clinic. Thus, eight to ten reading seminars are in affective diseases, as associated with the Affective Anxiety Clinic; eight to ten seminars are associated with the Schizophrenia Clinic; and there are recently created seminars for the newly developed Anxiety Clinic. The seminars cover use of specific drugs for each syndrome. During the second half of this year on the Consultation service, there is one formal one-hour seminar on the psychopharmacologic treatment of the medically ill patient, focusing on side effects as well as therapeutic effects.

In the PGY IV year, there are three to four seminars or discussion groups on pediatric psychopharmacology.

Throughout the various years there may be an occasional visiting guest lecturer on psychopharmacology and one or two Grand Rounds per year focused on some aspect of psychopharmacology.

#### **Site F**

Specific information about the site's training in psychopharmacology was difficult to assess, due to a great variability in psychopharmacology teaching, depending on the location of the resident in different components of the program. There was considerable variability in terms of formal psychopharmacology teaching throughout the program. An outpatient psychopharmacology clinic is available, and psychopharmacologic treatment is an integral part of rotations through the various inpatient services in different hospitals associated with the department. The department also hosts an annual Memorial Psychopharmacology Lecture, a single lecture to which all residents are invited. A monthly evening seminar is held using to discuss psychopharmacology topics. This is not specifically designed for resident education, although advanced residents do attend.

In the PGY II year, no common psychopharmacology teaching occurs. Residents are taught at each clinical location. Six to seven teaching conferences per year occur at each center, which include psychopharmacology. There is a primary psychopharmacology teacher located at several of this program's sites. In each of these components, clinical case supervision and teaching to residents occurs on a case-by-case basis.

During the PGY III and PGY IV year, on each inpatient service, there is at least a single one hour per week seminar devoted to patient care, which includes psychopharmacology. One Grand Rounds per month for the entire department is devoted to psychopharmacology.

#### **Site G**

During the PGY II year, during the summer months, there are four psychopharmacology seminars on the basic use of drugs in psychiatry. Later in the first year, there are eight more detailed psychopharmacology lectures. Also, part of six seminars in psychopathology during the first year are devoted to psychopharmacology. Primary psychopharmacology teaching, however, is done on a case-by-case basis on the inpatient units.

During the PGY III year, there is a biweekly outpatient seminar for all residents, some of which are devoted to psychopharmacology setting with a senior psychopharmacology consultations,

supervised by a senior psychopharmacologist. Others are involved in outpatient psychopharmacology consultations supervised by their regular psychotherapy supervisors.

The PGY IV year is primarily elective. Some residents can get more psychopharmacology exposure by working on the inpatient or outpatient services. There is also a biweekly elective in an Affective Disorders clinic which includes psychopharmacology in its program.

#### **Site H**

This is one of the few programs that begins teaching psychopharmacology during the internship year, before the official residency begins. Psychopharmacology is taught in the Intensive Care Unit, with a focus on the pharmacokinetics of CNS-acting drugs. The amount of teaching and exposure, however, is quite variable among the interns.

During the PGY II year, there is a six-week, twice a week, one and one-half hour session. Each basic course in psychopharmacology consists of small group discussions with readings. Most other teaching involves individual patient work, including psychopharmacology teaching around individual cases.

During the PGY III year, for six to eight weeks, one and one-half hours per week, there is an outpatient biological psychiatry series which focuses on the long-term effects of psychopharmacologic drugs, with a particular emphasis on tardive dyskinesia. There is also continued informal psychopharmacology supervision of individual cases with special focus on the chronic patient and the rehabilitation of patients.

#### **Site I**

During the PGY II year, there is a 'mini-course' in psychopharmacology, consisting of a series of six lectures, providing an introduction to psychopharmacology, pharmacokinetics, classes of drugs, brain adaptation to drugs and tolerance, alpha-blockers, enzyme inhibitors, and anticonvulsants. On the inpatient wards, teaching focuses on psychopharmacologic treatment.

During the PGY III and PGY IV years, there is a journal club which meets one and one-half hours every two months, focusing on psychopharmacology and on research methodology, as well as on evaluation of clinical data.

There is also a continuing course entitled "Update Lectures on Psychopharmacology", which is an eight-week series of lectures focusing on new drug developments, that continues through all three years of the training program. A journal club is also open to residents of all years, as are the Grand Rounds. Residents are encouraged to attend weekly pharmacology seminars, as well as being encouraged to attend the Neurosciences Club and monthly toxicology conferences. Residents may also take a three to six month elective in psychopharmacology research.

#### **Site J**

During the PGY II year, there is a one-semester psychobiology and psychopharmacology weekly lecture series. During this year there is also a course run by a senior psychopharmacologist on the critical reading of the psychopharmacology literature and evaluation of research. This a weekly ten-session course. Most other teaching during the year is on an individual case basis.

During the PGY III year, there is an outpatient seminar run by a senior psychopharmacologist during which cases are presented and problems are discussed. It lasts two to three months and is attended by a psychopharmacology supervisor. Each PGY III resident has a psychopharmacology supervisor. During this year there is also a Psychopharmacology Update course which lasts six to eight sessions and focuses on new antidepressants, tardive dyskinesia, and new treatments in schizophrenia. During this second residency year, residents attend a psychopharmacology clinic two hours each week. In this clinic, the resident sees outpatients being treated by social workers and psychology interns, and provides necessary psychopharmacologic treatments. Each case is discussed with a supervisor with whom the resident may also discuss his or her own cases.

During the PGY Year IV year, there is no official psychopharmacology teaching. Those who work with psychopharmacologists in the department may do research work of their own, or may become involved in other teaching activities.

### **Site K**

During the PGY II year, there is a four-session practical psychopharmacology course that occurs in mid-July. Starting in the fall, there is also a nine-month course on the psychoses, which is required for all residents. Psychopharmacology is woven into this course. There is also a course given at a second site for half of the residents, which focuses on basic pharmacology, pharmacokinetics, and practical psychopharmacology. The other half of the residents are at another site, where they attend a weekly seminar where they read articles on psychopharmacology, and attend a clinical practicum. The residents switch seminars at mid-year. Primary psychopharmacology teaching also occurs on each inpatient unit.

During the PGY III year, there is a weekly case seminar in advanced psychopharmacology teaching for a three-month period. This is actually a mixture of journal club reading and case consultations. For the second three months, there is seminar focusing on alcohol and substance abuse, and integrated into this course is the use of psychopharmacologic agents. During this year there is also a medication clinic at the VA hospital at which two-thirds of the residents attend. The other third of the residents attend an affective disorders clinic in which psychopharmacologic treatment is supervised. The residents rotate through the clinics.

### **Site L**

During the PGY II year there is a six-month weekly course which provides an introduction to psychopharmacology. It focuses on basic knowledge. Half of the interns (PGY I) attend this review. When they get to their PGY II year, they are also required to attend the review again. In addition, during this PGY II year, there is a nine-month weekly one-hour seminar on "the problem patient." Since all these patients are quite ill, they are invariably taking psychotropic drugs, and problems in psychopharmacology are specifically identified and discussed. During this year, specific patients are discussed with individual inpatient supervisors and discussions include the use of psychotropic drugs.

During the the PGY III and IV year, there are no specific lectures or seminars in psychopharmacology. There is a six-month seminar during PGY III on the foundations of neurosciences and general psychiatry, but this is not specifically devoted to psychopharmacology.

At Site L, there are no specific medication clinics, but each PGY II resident spends one hour a week in an aftercare clinic. Ninety percent of the patients in this clinic are taking some psychotropic drug, and so supervision is provided on the use of these drugs.

### **Site M**

During the internship (PGY I year), four to six months are spent on an inpatient service in which time is spent reading, and supervision time is devoted to the use of psychotropic drugs. There is also a weekly one and one-half hour seminar on patient care, the content of 50 percent of which is devoted to psychopharmacology.

During the PGY II year, there is a core curriculum consisting of individual patient teaching, where 50 to 80 percent of patients receive psychotropic drugs. There is a formal didactic psychopharmacology program lasting for two and one-half months, with twelve one and one-half hour sessions. There is also a neuroscience course lasting five months and containing approximately 25% psychopharmacology topics. Six months of the PGY II year is spent on an adult inpatient unit, and six months on an adult outpatient unit. Individual teaching is done on these units in psychopharmacology.

Half of the PGY III year is spent in a pediatric outpatient service, and half in an adult outpatient service. Teaching tends to be on an individual case basis, although there is a core curriculum with five didactic sessions in child psychopharmacology.

During the PGY IV year, there is a core curriculum which comprises a second course of ten sessions in advanced psychopharmacology. Six months of this year are spent in an elective in either research or patient care, and six months is spent on a Consultation-Liaison Service which includes several lectures in psychopharmacology.

### **Site N**

During the PGY II year, rapid orientation in the use of major psychotropic drugs, consisting of five one-hour sessions during the first few weeks of residency occurs. Psychopharmacology rounds, lasting

one hour each month, occur as part of a weekly professor's rounds. Six specific psychopharmacology seminars also occur during this year. Individual supervision includes psychopharmacology issues.

During the PGY III year, one afternoon per week, residents work in a psychopharmacology clinic. As part of this experience, every other week they have a seminar in psychopharmacology with a prepared curriculum. In addition, they have a seminar in psychopharmacology with a prepared curriculum. In addition, they have active supervision of cases as related to this clinic.

During the PGY IV year, there has been an advanced seminar, but this has not been particularly successful and is being reconsidered.

#### **Site O**

During the PGY I (Internship) year, starting in January, the residents have a one-day psychiatric rotation, including an introduction to psychopharmacology for use in crises and in hospital emergency rooms. For the remaining 26 weeks of the PGY I year, the interns get 'survival skills' training which consists of psychopharmacologic topics related to psychiatric practice in the emergency room and hospital wards. This training addresses major drug categories, interactions with major psychotropic drug categories and interactions with non-psychiatric medications.

During the PGY II year, once per week, the whole afternoon is devoted to the teaching of three separate courses, each lasting one hour and fifteen minutes. One of the courses is psychopharmacology, which includes formal presentation of basic and applied psychopharmacology principles, and also includes readings from the research literature. The residents also participate in three four-month rotations on each of the special inpatient units (acute care, schizophrenia, affective illness, borderline-character disorder). On each unit, psychopharmacology is taught as part of daily patient care.

During the PGY III year, the courses in psychopharmacology are extensions and continuations of those taught in the PGY II year. These are didactic aspects of psychiatric research (not specifically psychopharmacology). A course in the history of biologic psychiatry dating back to the Greeks and coming forward to the present is offered and covers all somatic interventions. Residents also rotate through a community psychiatry clinic (community mental health center) during which time they may be consulting and teaching psychopharmacology. The issues of psychopharmacology training for non-medical health care providers is stressed. The residents also have exposure to pediatric and adolescent psychopharmacology via a medication clinic in these areas, lasting six months of the PGY III year. For the six months, they rotate through a consultation-liaison service and deal with psychopharmacology in the context of medical practice.

#### **Site P**

During the PGY II year, first year residents learn psychopharmacology through individual patient care on individual services and through individual supervision. In addition, a specific one-hour weekly small group psychopharmacology supervisory seminar is held for first-year residents. Each psychopharmacology faculty member meets with three or four first-year residents for a period of three months and then rotates to the next group. The format for these discussions are reviews of individual case loads and psychopharmacology clinical practice with these patients, and discussion of simplistic or clinical psychopharmacology questions of the kind that might be too embarrassing to ask in a more formal setting. These supervisory sessions are required. First-year residents are also required to attend a weekly one-hour guest psychopharmacology lecture series. This lecture series consists of the following components: For the first four weeks during the summer months, a review of the basic categories of psychotropic drugs occurs. The second four weeks is entitled, "Psychopharmacology Approaches to the Difficult Patient," and stresses the use of psychopharmacology in the difficult differential diagnostic picture. The third four-to-six-week period, beginning at the end of the summer, is a course in basic neurobiology and pharmacokinetics. Thereafter, there is a ten-to-twelve-week module covering schizophrenia; a ten-to-twelve-week module covering affective illness; a two-to-four-week module covering anxiety, phobias, panic disorders, and borderlines; and then assorted lectures on pediatric, geriatric psychopharmacology, alcohol and substance abuse occur.

During the PGY III year, residents are also required to attend the weekly psychopharmacology lecture series. In addition, these residents, on a three-month rotation basis, consult to first-year residents on the use of psychotropic drugs on the inpatient services. They are accompanied by and

supervised by chief residents in psychopharmacology (PGY IV) during this period. The most interesting of difficult cases each week is selected and presented to a senior psychopharmacologist, who is chief of the psychopharmacology service, in a one-hour weekly formal psychopharmacology case presentation format. This case is transcribed and typed up with one copy placed in the patient's chart and copies made available for educational purposes to the residents. The second-year residents, on an elective basis, may also attend a one-hour weekly psychopharmacology literature seminar which is coordinated with the weekly guest lecture series. The readings for each of these seminars are selected by the chief residents and are selected to augment or amplify the basis for the guest lecture. Residents during this year also rotate through a Consultation-Liaison service in a general medical-surgical hospital and learn psychopharmacology in the context of medical illness, with particular emphasis on interactions between psychotropic and non-psychiatric medications. Residents may elect to have a child psychiatry experience in which pediatric psychopharmacology will be discussed on an individual case basis, but without any formal presentations. Residents also have a primary experience in emergency room, walk-in, and outpatient departments, as well as consultation to community mental health centers and nursing homes. Psychopharmacology is taught in an individual case-by-case basis in these settings.

During the PGY IV year, many residents become chief residents of some of the clinical services. Two are selected specifically to be chief residents in psychopharmacology. Their responsibilities include the organization and administration of the entire teaching program with specific emphasis on the patient consultation and psychopharmacology consultation seminar. These residents may participate in ongoing psychopharmacology research in the hospital.