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Training Frontline Staff

Training Frontline Staff is intended to help mental health authorities, agency administrators, and program leaders think through and develop training to teach the principles, processes, and skills necessary to deliver effective Medication Treatment, Evaluation, and Management (MedTEAM) services. This booklet includes information about developing the following types of training:

- New documentation practices;
- Ongoing training on medications; and
- Integrating outcome measures into clinical assessments.

MedTEAM

For references, see the booklet, *The Evidence*.

This KIT is part of a series of Evidence-Based Practices KITs created by the Center for Mental Health Services, Substance Abuse and Mental Health Services Administration, U.S. Department of Health and Human Services.

This booklet is part of the MedTEAM KIT that includes a DVD, CD-ROM, and seven booklets:

How to Use the Evidence-Based Practices KITs

Getting Started with Evidence-Based Practices

Building Your Program

Training Frontline Staff

Evaluating Your Program

The Evidence

Using Multimedia to Introduce Your EBP

EVIDENCE-BASED
PRACTICES

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Knowledge Informing Transformation

What's in *Training Frontline Staff*

MedTEAM

EVIDENCE-BASED
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Training Frontline Staff

How To Use This Booklet

Training Frontline Staff helps mental health authorities, agency administrators, and program leaders think through and develop training to teach staff the principles, processes, and skills necessary to deliver effective Medication Treatment, Evaluation, and Management (MedTEAM) services.

Review this booklet along with the *Introductory Video* (English and Spanish versions) and *Practice Demonstration Video* on the DVD in this KIT.

To make the content easy to manage, we divided the booklet into three modules:

The Three Modules in Training Frontline Staff

1 New documentation practices

2 Ongoing training on medications

3 Integrating outcome measures into clinical assessments

Since being part of a team is an essential part of MedTEAM, we recommend that you conduct group training rather than simply giving MedTEAM staff materials to read on their own.

We have found that practitioners prefer to read training materials and then discuss them with colleagues as a group. Working through training materials as a group creates an opportunity to discuss and master the practice principles and skills that are essential to effective MedTEAM practice.

Prepare program-specific information

As outlined in this booklet, prepare to give MedTEAM staff information about MedTEAM policies and procedures. These include the following:

- Assessment forms and procedures;

- Treatment forms and procedures;

- Criteria upon which the program's fidelity to the MedTEAM model will be assessed; and

- Outcomes that will be monitored.

You will find sample forms in *Building Your Program* and *Evaluating Your Program* in this KIT.

Prepare agency-specific information

You should also develop a plan to train MedTEAM staff about other policies and procedures that may be relevant to the agency in which MedTEAM operates. Depending on state, local, and agency policies, a number of considerations can affect availability of medications, procedures for prescribing them, and documentation of consumer education and adverse events. Some common examples include the following:

- **Medication procurement:** MedTEAM staff should be aware of policies related to accessing medications such as formulary restrictions and lack of or restricted insurance coverage.

- **Prior approval:** MedTEAM staff should be aware of procedures and documentation requirements related to obtaining prior approval for medications and medication visits.

- **Informed consent:** MedTEAM staff should receive training on how to share information about the risks and benefits of specific medications, ascertain consumers' understanding of key information, and document their consent for treatment. Training should also include privacy and confidentiality policies related to sharing information with third parties such as treatment providers in outside agencies, general medical providers, and families or other supporters.

- **Incident reporting:** MedTEAM staff must know how to report adverse events, including to the U.S. Food and Drug Administration (FDA) or drug manufacturer when necessary. Training should also include information about what to do if staff know about illegal activity, threats of harm to self or others, and suspected abuse and neglect.

Visit an existing team

After staff members participate in MedTEAM trainings, we suggest that they observe an experienced, high-fidelity MedTEAM program. If MedTEAM staff are familiar with the MedTEAM model before their visit, the visit will be more productive. Rather than having to take time to explain the basics, the host program will be able to show the new MedTEAM staff how to apply the basics in a real-world setting.

Recruit a consultant

Ensuring that staff follow the MedTEAM evidence-based model can be challenging. It entails facilitating a team development process, applying what MedTEAM staff members have just learned about MedTEAM in their own clinical work with consumers, and offering ongoing feedback through clinical supervision.

It is very easy to stray from the MedTEAM model and do something similar to but not quite the same as MedTEAM. Sometimes this happens because MedTEAM staff believe they are diligently following the MedTEAM model, but they miss some of the more subtle aspects of it. In other cases, MedTEAM starts well, but as more consumers are admitted to the program and pressure mounts, MedTEAM staff reverts to older, more familiar ways of working.

To ensure that your MedTEAM staff follows the MedTEAM model, work with an experienced consultant throughout the first year of operation. A consultant can provide ongoing telephone and in-person support to help you with your challenging leadership role.

Cross-train

It is important that staff throughout your agency develops a basic understanding of MedTEAM. Cross-training will ensure that other staff members support the work that the MedTEAM staff undertakes.

As discussed in *Building Your Program*, we also recommend that you use these materials to train members of your MedTEAM advisory committee. The more information that advisory group members have about MedTEAM, the better they will be able to support MedTEAM and its mission.

Training is also an opportunity for MedTEAM staff and advisory group members to become familiar with one another. Make sure that the advisory group members and MedTEAM staff introduce themselves and that they are familiar with one another's roles.

To help you conduct MedTEAM training, we include these multimedia materials in the MedTEAM KIT:

- Introductory PowerPoint presentation;
- Sample brochure; and
- *Introductory Video*.

Once trained, you or your MedTEAM staff will be able to use these materials to present routine, inservice seminars to ensure that all staff members within the agency are familiar with MedTEAM.

Training Frontline Staff

Module 1: New Documentation Practices

One of the core elements of MedTEAM is ensuring that documentation gives MedTEAM staff members the information they need for medication decisions at the time of the medication visits. Typically, as agencies put MedTEAM into practice, documentation forms and procedures for collecting core information change. This module describes the benefits of providing documentation training, who should attend, and the types of information that support MedTEAM staff in mastering new documentation practices.

Effective medication treatment depends on two types of information:

- Information about consumers; and
- Information about medications.

This module focuses on collecting and documenting consumer information. It assumes that you have updated your documentation and developed procedures outlining when, how, and by whom the information will be collected.

For more information including sample documentation forms, see *Building Your Program* in this KIT.

Why provide documentation training?

Documentation training is a vital element for effective medication treatment. MedTEAM staff must know about the elements of effective documentation and where information can be found in the medical record.

Changes in procedures will also change the types of tasks that staff complete. Staff must understand the rationale for these changes and new work expectations.

Who should attend?

Documentation training should involve everyone who documents medication information in the medical record. It is important to adequately inform everyone who will be affected by changes in documentation about the reasons for such changes.

Carefully consider the roles of each staff member when deciding who will attend this training. Documentation training is a good opportunity to ensure that all staff members are in agreement about the types of information that should be documented, the reasoning behind it, and how staff is expected to work together to accomplish this goal.

What information should be conveyed?

A basic principle of MedTEAM is that, if information about consumers is important enough to influence treatment decisions, then it is important enough to record. Training should emphasize that good documentation means capturing enough information from each medication visit so that another prescriber can read the medical record and understand the treatment decisions.

Start your documentation training by articulating the mental health system's or agency's goal for implementing MedTEAM. Provide reasons for putting the evidence-based practice in place. Consider using the *Introductory Video* on the DVD in this KIT to give an overview of MedTEAM. If staff members believe that MedTEAM can help them improve medication treatment, they will be much more inclined to welcome these changes.

Introduce new procedures

Some of the procedures for MedTEAM may be new for your agency. For example, while some agencies rely solely on prescribers to provide medication treatment, MedTEAM has found that it is more effective to manage medications using a team approach. It is important to discuss these changes with your MedTEAM staff. Explain the rationale for using a team approach, involving consumers, and requiring supervision.

Introduce new staff roles

Training should also address the responsibilities of each MedTEAM staff member in medication management. A MedTEAM staff member can fill out certain sections of your MedTEAM documentation forms, such as weight, scale scores, and recent medication history before consumers see the prescriber. The shared responsibility model for medication management can generate valuable information for the prescriber to address problem areas in more depth while seeing consumers, instead of just eliciting basic information during the meeting.

During the training, share information about staff roles and responsibilities. Providing background and rationale for MedTEAM is likely to increase staff support for these changes. For more information about establishing staffing criteria, see *Building Your Program* in this KIT.

Review new forms and instructions

One way of ensuring that documents are done correctly, by the designated people, is to incorporate instructions into the actual document. For example, for each data element, you can list the job title of the responsible person (case manager, nurse, prescriber, etc.). In addition, in paper documents, you can place the form on the front of each page while keeping instructions for filling out the form on the back of the page. In electronic medical records, you can include information icons that contain instructions on each item when users click on the icon.

Use your new documentation training as a venue to review and refine your new forms and instructions for completing them. Refining the forms and procedures as a group can increase staff's commitment to implementing MedTEAM.

How should training be structured?

The training can be easy and straightforward. Convene two to four sessions of group training.

One option is to structure your training around reviewing the MedTEAM fidelity scales as a way of describing the evidence-based model. Present the results of your agency's baseline fidelity assessment and generate discussions for how to introduce changes in response to those results.

A second option is to conduct a hands-on training whereby MedTEAM staff complete exercises to become familiar with new forms (paper or electronic) and procedures. Such training helps orient staff about who collects what information and where it is documented.

A helpful training exercise that you may use is to have trainees fill out the new MedTEAM form as they think it should be filled out. Then review the forms for discrepancies and discuss the differences as a group.

Another option is to structure your documentation training around reviewing and discussing case examples. On the next few pages are some examples that you may use to show staff how MedTEAM documentation practices can improve medication management.

Case Example 1: Clinic Self-Assessment

The Southside clinic conducted its first MedTEAM fidelity assessment using the organizational and prescriber fidelity scales. After the assessment, the MedTEAM staff and advisory committee met to discuss the results.

The assessment showed areas where the clinic was already providing services that were consistent with the evidence-based model. For example, current medications were consistently documented and medication doses were often within the recommended range.

The assessment also indicated areas where medication management could be improved. For example, the medical record review showed poor documentation during intake or admissions. Many sections of the forms or, at times, the entire form were incomplete.

MedTEAM staff and advisory committee members discussed the assessment results. Staff pointed out that the current forms are very long and detailed, with most sections requiring them to enter free text. Furthermore, the time allotted for initial visits is insufficient to obtain and record all the information.

The assessment also showed that information about past medication and family history was frequently missing from the medical records. While the forms have sections for this information, little to no information was provided in these sections.

Discussion

How can the clinic use the information from the MedTEAM fidelity assessment to improve medication management?

While there is no single correct answer to this question, here are a few ideas.

The MedTEAM advisory committee commends staff members on the areas in which they are doing well and focuses on improving the clinic's documentation forms. The MedTEAM staff and advisory committee examine the forms and realize that much of the information requested can be gathered using checklists.

They also conclude that the form gathers some information that is not very useful and does not relate to the consumers they serve. The medical records director and chief medical officer agree to streamline the form and bring it back to the committee.

After discussing the fidelity assessment results, the MedTEAM staff and advisory committee have a picture of the quality of the medication management provided at their clinic. They prioritize changes to the documentation and place a new emphasis on gathering past medication and family histories.

Case Example 2: Medication Visit upon Intake (or Admissions)

Dr. Roberts works in a busy community mental health agency. Typical consumer visits are 30 minutes for intake visits and 15 minutes for followup visits.

Today, Dr. Roberts has an intake visit with a new consumer, Manuel. Based on the medical records Dr. Roberts received from Manuel's previous mental health provider, he has a history of paranoid schizophrenia.

Manuel's prior records include information about the last 10 years of his care. Dr. Roberts is able to quickly find his diagnoses from a discharge summary of Manuel's last hospitalization.

This summary also provides a rough estimate of the number of lifetime hospitalizations, summary of course of illness, and age of the onset of Manuel's illness. Dr. Roberts lacks information about the number of hospitalizations in the last year or past 5 years, which could give a better picture of the impact of Manuel's disease on his recent functioning.

The past medication history gives Dr. Roberts minimal information. The history contains only the names of medications Manuel has taken. While this is helpful, vital elements are lacking, including highest dose, duration of treatment with each medication, and responses to each medication.

This poor documentation of past medical history leaves Dr. Roberts uncertain about how to proceed with Manuel's treatment. Unfortunately, due to his current symptomatology, Manuel cannot reliably help fill in these gaps. Dr. Roberts does not know if any or all of these medication trials were adequate in terms of dose or duration, so she may inadvertently use a medication that previously gave Manuel little help, or she may overlook a medication that did not receive an adequate trial in the past.

Discussion

How does the information that Dr. Roberts has compare with the information that MedTEAM recommends collecting and documenting? How could Dr. Roberts ensure that she has access to needed information?

While there is no single correct answer to this question, here are a few ideas.

Using standardized documentation forms that capture needed information would have given Dr. Roberts a sound basis for making medication decisions at this intake visit.

MedTEAM recommends collecting and documenting this information

- Diagnoses
- Symptoms and severity
- Illness history (including age of onset, hospitalizations, and suicide attempts)
- Past medication history (dose, duration, interactions, tolerability, and response)
- Current medications (dose, duration, interactions, tolerability, and response)
- Assessment of the effectiveness of current medications and any plans for future medication changes
- Current medication adherence
- Current side effects and treatments for them
- Current consumer functioning
- Consumer preferences and goals
- Contact information for previous providers

Although this information may be available, the inability to access it when needed makes it difficult for Dr. Roberts to provide effective medication treatment.

To ensure that Dr. Roberts has the needed information at the time of the medication visits, MedTEAM staff could do the following:

- Review the documentation before the appointment date;

- Ask consumers for contact information for their current pharmacy and follow up on missing information;

- Ask consumers for contact information for their past providers and follow up on missing information; and

- Ask consumer to bring in current medication bottles and a list of current medications (both psychiatric and nonpsychiatric).

Case Example 3: Treatment-Refractory Consumers

Chris is reviewing a medical record to determine whether a consumer's schizophrenia is refractory to treatment. The agency has never required an annual update or review. Consequently, to conduct a comprehensive medication review, Chris reviews 5 years worth of Progress Notes.

Chris finds that the consumer has been treated with the following medications:

- Haloperidol—20 mg/day for 2 years;
- Risperidone—6 mg/day for 7 months; and
- Quetiapine—800 mg/day for the last 4 months.

The consumer continues to be symptomatic despite adhering to medication as verified by pill counts.

Based on the evidence, Chris determines that the illness is treatment-refractory because two or more antipsychotic trials of adequate dose and duration have failed to relieve the symptoms. He finds that the consumer has not been given a trial of clozapine, even though current evidence supports a trial of clozapine for treatment-refractory schizophrenia.

Discussion

How does Chris' comprehensive medication review support effective medication management? How could MedTEAM facilitate this process?

While there is no single correct answer to this question, here are a few ideas.

In this case, the treating prescriber had been seeing the consumer for only 4 months and knew that the consumer had taken multiple medications, but information about what had worked and to what degree was not readily accessible. Chris'

comprehensive medication review provided clear evidence on which to base a diagnosis of treatment-refractory illness. Armed with this information, the treating prescriber and the consumer agree on a trial of clozapine, which dramatically improves the consumer's psychotic symptoms and quality of life.

Treatment-refractory illness can be difficult to determine if a comprehensive medication summary is unavailable. It often takes searching much of the medical record and then using clinical judgment to make this assessment.

MedTEAM facilitates this process by clearly documenting the following information for each medication prescribed in the past:

- Dose;
- Duration;
- Response;
- Rationale for medication changes;
- Desired outcomes; and
- Rating method.

The rating method establishes a plan to guide decisions. For example, the plan may be to increase medication dose or change medications if symptoms are not improved by a specific time period. Access to this type of clear information would have saved Chris a good deal of time. Chris would not have had to read through 5 years of Progress Notes.

MedTEAM also recommends conducting an annual update or review. By completing an annual review using MedTEAM documentation forms, MedTEAM staff would have been able to diagnose the illness as treatment-refractory earlier.

Case Example 4: Integration of Psychiatric and Medical Care

Jamie is reviewing medical records using the MedTEAM Fidelity Scales. As she reviews the record of a consumer who was diagnosed with schizoaffective disorder, she notes that he is being treated with an atypical antipsychotic (olanzapine) and a mood stabilizer (divalproex sodium). He has taken this regimen for 8 months with good results.

Jamie notes that the prescriber is monitoring side effects, such as tardive dyskinesia; extrapyramidal symptoms; and elevated blood glucose, lipids, and weight. She finds that the consumer's weight is taken at each visit. Two brief rating scales, the Abnormal Involuntary Movement Scale (AIMS) to monitor tardive dyskinesia and the Simpson-Angus Scale (SAS) to monitor extrapyramidal symptoms, were conducted when the olanzapine was started and then every 6 months after that.

The consumer's blood glucose and lipids were taken when the olanzapine was started. He has gained 12 pounds since starting the current medication regimen and the blood glucose and lipids were slightly elevated at baseline but were not measured again until 8 months later. These recent laboratory values show that his fasting blood glucose is elevated to 134 mg/dL, low-density lipoprotein (LDL) cholesterol has elevated to 190 mg/dL, and high-density lipoprotein (HDL) cholesterol has decreased to 32 mg/dL. The consumer was switched to olanzapine because he experienced extrapyramidal symptoms on risperidone. He showed no signs of tardive dyskinesia at baseline initiation of olanzapine, but did have some extrapyramidal symptoms, specifically, hand tremor. The consumer had been prescribed benztropine 3 months before starting olanzapine and has been on it for 11 months.

Two months ago, the prescriber performed another AIMS and SAS. No side effects of tardive dyskinesia or extrapyramidal symptoms were present. The prescriber informed the consumer of the ongoing risks of obesity and weight gain and their relationship to long-term risks of cardiovascular disease and diabetes mellitus if the current treatment continues. The prescriber noted that the consumer said he wanted to stay on olanzapine because, "This is the best medication I have ever been on. This is the first time in a long time that I have not been bothered by the voices."

Discussion

Which side effects did the prescriber effectively monitor and treat? Which side effects could have been monitored and treated more effectively? How could a team approach help in this process?

While there is no single correct answer to these questions, here are a few ideas.

Jamie found that weight, tardive dyskinesia, and extrapyramidal symptoms were being monitored regularly. She found that blood glucose and lipids were not being followed regularly—just once at baseline and then 8 months later. The consumer is still being prescribed benztropine for extrapyramidal symptoms, which are no longer present.

Jamie's review highlights a common problem in mental health systems that are not integrated with other medical care. Often basic monitoring is performed, sometimes only initially, but then medical issues are not properly addressed because they are not psychiatric symptoms per se.

One way that MedTEAM helps with this process is to develop a relationship with the consumer's primary care provider to ensure the MedTEAM staff know the following:

- Medications prescribed;

- Symptoms and side effects that are being monitored; and

- Interventions that are provided.

If prescribers are uncomfortable prescribing nonpsychiatric medications or taking the lead on interventions involving nonpsychiatric medical issues, then they must ensure that the consumer is treated and regularly monitored by another provider who can address these issues and remain informed of the consumer's progress. With the consumer's agreement, the prescriber can also keep nonpsychiatric providers informed of the care that they are providing.

For a more in-depth discussion on collaborating with nonpsychiatric providers to ensure routine physical health monitoring, particularly for consumers taking second-generation antipsychotic medications, see Treatment Guidelines referenced in Module 2 of this booklet and *The Evidence* in this KIT.

Case Example 5: Access to Hospital Records

Working in a walk-in clinic, Dr. Murphy saw Gerald who missed his last two appointments with his treating prescriber. During this time, Gerald ran out of his medication and subsequently was admitted to the hospital.

Gerald tells Dr. Murphy that they changed his medications in the hospital, but he cannot remember the names of the new medications.

Discussion

What would you do if you were Dr. Murphy?

While there is no single correct answer to this question, here are a few ideas.

The timely receipt of consumer-related information from other treatment facilities is a particularly vexing problem. Prescribers often face this situation and commonly ask the consumer to wait as they (or another staff member) call the hospital to request a fax copy of the consumer's discharge summary.

In MedTEAM, agencies develop a systematic plan to prevent this situation from occurring. For example, agency and hospital administrators collaborate to develop access to shared electronic medical records.

If Dr. Murphy had access to a shared electronic medical record, she could quickly see what Gerald is taking and avoid delays waiting for faxed copies of medical records.

Developing clear procedures for sharing medical records between facilities allows prescribers to be more efficient and more confident in situations such as Gerald's.

Case Example 6: Treatment Team Meetings

Treatment team meetings occur weekly at the Maple Oaks Mental Health Center. Members of the treatment team are able to share information about consumers they have seen over the past week.

Today, Roxanne, the team's supported employment specialist, shares some very important information about Catherine, a consumer who has schizophrenia. Catherine has been employed at a local craft store for 3 years. She is very hard working and has been one of the store's most dependable employees.

However, over the past week or so, Catherine has not been performing as well at work. She has reported to work late a few times and always seems to be tired. Both problems are unusual for Catherine and they seem to be frustrating her a great deal.

Catherine's prescriber, Dr. Ruiz, informs the team that Catherine has recently started a new antipsychotic medication. Dr. Ruiz called Catherine a few days after she started the medication and Catherine stated everything was going well at the time.

Dr. Ruiz also asked Catherine to call if she had any questions or if she experienced any side effects, but Dr. Ruiz had not received any calls from Catherine.

Discussion

How can treatment team meetings help improve the care that consumers like Catherine receive?

While there is no single correct answer to this question, here are a few ideas.

Dr. Ruiz might not have heard anything about Catherine's side effects until their next appointment in 2 weeks, if she had not learned it from Roxanne.

Now, Dr. Ruiz can schedule Catherine earlier to evaluate her tiredness. The tiredness might be a side effect of her new medication, but also could indicate the onset of a medical problem, such as diabetes or hypothyroidism. This shared information allows Dr. Ruiz to address the problem more quickly and help prevent Catherine from stopping her medication or losing her job.

Summary

Offering training on new documentation practices is the key to effectively implementing MedTEAM.

Tailor the content and structure of your training to best meet the individual needs in your agency.

Training Frontline Staff

Module 2: Ongoing Training on Medications

Effective medication treatment depends on keeping up with the latest scientific evidence and using it to inform medication decisions. However, the rapid pace of scientific discoveries makes this task particularly challenging. This module describes the benefits of offering ongoing training on medications, who should attend, and the types of information that support MedTEAM staff in keeping up with this large body of evidence.

One core element of MedTEAM is that the latest scientific evidence guides medication decisions. Since the evidence base for medications evolves quickly, it is impossible to provide a comprehensive and current summary of it in this KIT. Instead, this module gives you guidelines to help you develop your own treatment guidelines or algorithms for medication treatment that are based on the latest evidence.

This module also gives you suggestions for how to develop a systematic plan and ongoing training to help MedTEAM staff keep up with scientific breakthroughs in medication treatment and use that information to update treatment guidelines at least annually.

Develop treatment guidelines or algorithms

Practice guidelines are systematically developed statements designed to inform clinical decisions by summarizing scientific evidence about the types of medications that have worked best for specific groups of consumers. Algorithms are evidence-based or consensually agreed-upon stepwise instructions for patient care (Parks, 2007).

Two aspects of serious mental illnesses have led to developing a number of guidelines and algorithms that make recommendations for sequencing specific medications for long-term medication treatment.

- First, these illnesses are typically recurrent or chronic.

- Second, the first treatment typically does not work for the duration of the consumer's illness.

Therefore, most consumers will respond inadequately to at least one medication and need either a medication change or addition.

Is one guideline or algorithm recommended?

No guideline or algorithm has been found to be superior to others. However, some generally shared characteristics span many of the currently available guidelines. For example, in treating schizophrenia, the following three tenets are shared across numerous guidelines and algorithms:

- Antipsychotics are the core of medication treatment;

- Clozapine is recommended for those with a history of inadequate response to two or more other antipsychotics; and

- Combination antipsychotics are a last resort because they lack a strong evidence base.

Medication training for MedTEAM staff can begin with a review of treatment guidelines and algorithms. Reviewing existing treatment guidelines and algorithms annually is one way to keep up on the latest scientific evidence.

So long as core recommendations such as the tenets described for treating schizophrenia are followed, you may choose from the range of published guidelines and algorithms in developing your own and make local modifications in recommended medication sequences, as indicated.

The key is to start with medications that are effective, simple to use, and tolerable for the consumer. It is important to remember that decisions should be made together with consumers and based on the history, preferences, medication side effect profile, medical status, concomitant medications, and other variables that may apply to specific situations. No algorithm or guideline can account for every individual circumstance and provide a single concrete recommendation for each consumer. Thus, it is ultimately the prescribers' responsibility to integrate the best evidence from scientific research with their clinical expertise and the consumer's experience, and partner with the consumer in making medication decisions.

The following is a list of treatment guidelines and algorithms that were available at the time that this KIT was published. As a part of your training, review these materials or other more recent guidelines relevant to your population of focus to adopt one that follows the best expert consensus based on the latest research.

Examples of treatment algorithms and guidelines

American Psychiatric Association Schizophrenia Guidelines. (2004). Retrieved from
http://www.psych.org/psych_pract/treatg/pg/prac_guide.cfm

Canadian Psychiatric Association. (2005). Canadian clinical practice guidelines for the
treatment of schizophrenia. **Canadian Journal of Psychiatry, 50**(Suppl 1). Retrieved from
http://ww1.cpa-apc.org:8080/Publications/Clinical_Guidelines/schizophrenia/november2005/index.asp

International Psychopharmacology Algorithm Project. (2007). http://www.ipap.org

Lehman, A. F., Kreyenbuhl, J., Buchanan, R. W., Dickerson, F. B., Dixon, L. B., Goldberg,
R., et al. (2004). The Schizophrenia Patient Outcomes Research Team (PORT): Updated
treatment recommendations 2003. **Schizophrenia Bulletin, 30,** 193-217. Retrieved from
http://schizophreniabulletin.oxfordjournals.org/archive

McEvoy, J. P., Scheifler, P. I., & Frances, A. (Eds.). (1999). The Expert Consensus Guideline Series:
Treatment of schizophrenia 1999. *Journal of Clinical Psychiatry, 60*(Suppl 11), 4-80. Available from
http://www.psychguides.com

Mellman, T. A., Miller, A. L., Weissman, E. M., Crismon, M. L., Essock, S. M. & Marder, S. R. (2001).
Evidence-based pharmacologic treatment for people with severe mental illness: A focus on
guidelines and algorithms. *Psychiatric Services, 52,* 619-625.

Miller, A. L. (2004). PORT treatment recommendations. *Schizophrenia Research, 30,* 601-604.

Moore, T. A., Buchanan, R. W., Buckley P. F., Chiles, J. A., Conley, R. R., Crismon, M. L., et al. (2007).
The Texas medication algorithm project antipsychotic algorithm for schizophrenia: 2006 update.
Journal of Clinical Psychiatry, 68, 1751-1762.

Texas Department of State Health Services, Texas Medication Algorithm Project (TMAP) and Texas
Implementation of Medication Algorithms (TIMA). (2007). *Antipsychotic algorithm for the treatment
of schizophrenia.* (2007). Available from http://www.dshs.state.tx.us/mhprograms/TIMA.shtm

U.S. Department of Veterans Affairs & U.S.Department of Defense. (2004). *Management of
persons with psychoses.* Washington, DC: U.S. Department of Veteran Affairs. Available from
http://www.guideline.gov/browse/DisplayOrganization.aspx?org_id=954

What should be included in your guidelines?

Written guidelines or algorithms should specify what constitutes an adequate trial for each medication including the following:

- Duration of medication trial;

- Medication sequencing;

- Dosing recommendations; and

- How to assess outcomes.

For the prescriber trying to decide which drug to try next for symptomatic consumers, knowing which prior treatments have been true failures versus insufficient trials is obviously critical. However, evidence may differ on the length of time needed for an adequate medication trial.

For example, most guidelines available at the time of publication state that to determine if an antipsychotic medication is working well, a consumer must take the medication between 4 and 12 weeks. However, more recent meta-analyses of newer data suggest that the minimum may be closer to 2 weeks. For more information, see *The Evidence* in this KIT.

While the question of the duration that constitutes an adequate trial of antipsychotics is unresolved, the trend is definitely toward the conclusion that periods shorter than 12 weeks may be adequate, with the likely exception of clozapine.

When changing antipsychotic medications, a medication that the consumer has not tried before may be a better option than one that has been used for 2 weeks or more at an adequate dose without producing good results.

In addition to what constitutes an adequate medication trial, your treatment guidelines or algorithms should include a plan to identify and treat consumers with treatment-refractory disorders (that is, consumers whose symptoms have inadequately responded to medication).

In your plan, specify criteria for identifying consumers whose disorders are treatment-refractory. Develop procedures to identify, track, and respond to the needs of this group of consumers. For example, schizophrenia in consumers who have taken two or more antipsychotic medications without improvement may be defined as treatment-refractory. A plan for identifying this group of consumers may include conducting a chart review every 6 months. To respond to the needs of this group of consumers, clozapine may be offered as long as no contraindications exist.

Keep up with scientific breakthroughs

Keeping abreast of the evidence base for medications is a challenge. Many prescribers rely on routine self-training to access new scientific evidence. However, routine self-training is complex. Many sources of information about medications exist including the following:

- Continuing Medical Education (CME) programs;

- Primary research literature;

- Research reviews and meta-analyses;

- Pharmaceutical representatives and programs; and

- Medication-related Web sites and newsletters.

Despite the challenge, prescribers are expected to keep up to date. Below are some tips for how you can help ensure that MedTEAM staff members have the latest and most accurate information that is available from medication research.

Pull information from multiple sources

The role of the pharmaceutical industry in educating prescribers is a subject of active discussion in the medical community. A variety of regulations and ethical guidelines exist, with others being considered at the time of this writing. Regardless of internal or external constraints, however, it is unreasonable to expect the pharmaceutical industry to supply all the necessary and sufficient information that prescribers need to know to stay current. This is especially true when generic drugs compete with brands still on patent and when non-drug alternative treatments exist. Rather than relying solely on information provided directly by the pharmaceutical industry, ensure that prescribers have easy access to information gathered from multiple sources such as those in the following table.

Examples of medication information sources		
Category	**Resource**	**Web site**
Drug Information	Epocrates Online – Free drug and clinical reference for the Web browser	http://www.epocrates.com/products/online/index.html
	Food and Drug Administration: Center for Drug Evaluation and Research	http://www.fda.gov/cder/drug/default.htm
	Food and Drug Administration: Drugs@FDA	http://www.accessdata.fda.gov/scripts/cder/drugsatfda
	MedlinePlus: Medicines	http://www.nlm.nih.gov/medlineplus/medicines.html
Drug Interactions	Indiana University, Division of Clinical Pharmacology: Drug Interaction Table (Cytochrome P450 System)	http://medicine.iupui.edu/clinpharm/ddis
Drugs in Pregnancy and Lactation	Briggs Update: Drugs in Pregnancy and Lactation	http://www.briggsdrugsinpregnancy.com
	Centre for Addiction and Mental Health (CAMH)	http://www.camh.net/Publications/Resources_for_Professionals/Pregnancy_Lactation/index.html
	Drugs in Pregnancy and Breastfeeding	http://www.perinatology.com/exposures/druglist.htm
	Organization of Teratology Information Specialists	http://www.otispregnancy.org
	Pregnancy-Related Issues in the Management of Addictions (PRIMA)	http://www.addictionpregnancy.ca/

Obtain Internet and library access

In treating individual consumers, specific questions often arise that are not addressed by summary tables such as those above. These questions may not even be covered in comprehensive psychopharmacology texts. MedTEAM staff members with Internet and library access can search for the most up-to-date evidence.

Considerable information is available through the Internet. A plethora of Web sites are devoted to specific mental illnesses and psychiatric issues.

Unfortunately, the quality of information varies hugely from source to source. Timeliness and reliability of information may be difficult to judge.

Other sources of information are medication newsletters that review and evaluate recent information about medication treatments in psychiatry. You can subscribe to these individually, but MedTEAM staff may want to agree on one or two with the greatest value and ask the MedTEAM leader to subscribe to them. The following table lists some examples of medication newsletters.

Medication newsletters	Web site
Biological Therapies in Psychiatry	http://www.btpnews.com
The Brown University Child and Adolescent Psychopharmacology Update	http://www.wiley.com/WileyCDA/WileyTitle/productCd-CPU.html
The Brown University Geriatric Psychopharmacology Update	http://www.wiley.com/WileyCDA/WileyTitle/productCd-GPU.html
The Brown University Psychopharmacology Update	http://www.wiley.com/WileyCDA/WileyTitle/productCd-PU.html
The Carlat Psychiatry Report	http://www.thecarlatreport.com
Child & Adolescent Psychiatry Alerts	http://www.alertpubs.com/child.htm
Current Psychiatry	http://www.currentpsychiatry.com
Journal Watch: Psychiatry	http://psychiatry.jwatch.org
Psychiatry Drug Alerts	http://www.alertpubs.com/Psych.htm
Psychiatry Weekly	http://www.psychiatryweekly.com
Psychopharm Review (formerly *International Drug Therapy Newsletter*)	http://www.lww.com/resources/cmeinfo/internationaldrugtherapy.html

Establish a team approach

Time and effort to access the most updated scientific information often competes with time devoted to consumer care. One approach to keeping up to date on medications is for MedTEAM staff to divide the work if the staff is of sufficient size. Develop procedures for how MedTEAM staff can work together to access information on scientific updates and expert recommendations.

The systematic plan should include procedures for updating treatment guidelines or algorithms annually including specifying who is involved in the update process.

Consider designating a staff member who may serve as a point person within your agency for medication updates. Have that person routinely update staff during treatment team meetings or other inservice sessions.

Some agencies may also further specify the roles so that one staff member serves as a point person for medications related to schizophrenia and another for mood disorders. Designated MedTEAM staff may participate in additional training activities.

Develop ongoing training

Your systematic plan for helping MedTEAM staff keep up with the evidence should include ongoing training on medications. This section provides information that may be incorporated into medication training for MedTEAM staff.

The Web sites in the previous tables are useful for finding answers to a variety of medication-related questions, but they are updated at variable intervals and, therefore, cannot possibly incorporate all of the most recent literature findings, or even the most recent meta-analytic studies. The rest of this section on medications is devoted to training on how to efficiently search the literature to find answers to medication questions.

Conduct literature reviews

Effectively answering drug information questions takes time, practice, and knowledge about where to look for information. Some drug information questions (for example, examining a medication's elimination half-life, determining whether a medication has been noted to cause a given side effect, or understanding the available dosage strengths) can readily be answered using tertiary literature sources such as drug references or textbooks. But more complex questions such as, Is medication A better than medication B?, often require reviewing the primary or secondary literature.

An excellent framework to use in developing and asking answerable clinical questions has been created by the Monash Institute of Health Services Research (2006). In this framework, every clinical question should be broken down into a PICO format.

P = Population (or consumer)

I   = Intervention or indicator

C = Comparison or control

O = Outcome

This framework allows users to clarify the question, identify the information necessary to answer the question, translate the question into searchable terms, and develop and refine the search strategy. The great advantage of this approach is that it can save users considerable time searching through extraneous and irrelevant literature.

Use search engines

Anyone connected to the Internet can access PubMed, a free Internet search engine for accessing citations and abstracts of life science and biomedical research articles.

To access PubMed, go to: **http://www.pubmed.gov**.

Some full-text articles may be available free of charge by the publisher through PubMed. If you are affiliated with a large hospital system, government agency, or university, you may have access to resources such as OVID or other searchable bibliographic databases or to medical journal subscriptions that are typically not free to the public. These resources provide more full text articles.

Good search strategies are essential to getting manageable, yet adequate, numbers of references. Searching clinical questions too broadly may generate thousands of articles and cause you to spend hours going through articles unrelated to the clinical question. Conversely, questions that are too narrow in scope can yield too few results, missing information that may be relevant to the clinical question.

Practice the PICO approach to avoid these pitfalls. The following case examples and exercises can be used to train MedTEAM staff on how to create efficient search strategies.

Manuel, a 27-year-old consumer, comes into the clinic for his monthly appointment. He has continuing symptoms of paranoia and complains of daily auditory and visual hallucinations.

The provider wishes to change Manuel's antipsychotic medicine, but Manuel is reluctant. He feels that the olanzapine has been the best antipsychotic to date for his symptoms. He is currently on olanzapine 20 mg daily.

Manuel asks the provider, "Why can't we just increase the dose?"

Exercise

- Use the PICO framework to develop a clinical question to inform medication decisions for Manuel.

- Use an available search engine to access research articles related to your clinical question.

- Examine the level of evidence in the studies that you found.

  ❑ Did these studies look at a large number of consumers?

  ❑ What types of studies are they (for example, randomized control trials, case studies, etc.)?

  ❑ Which populations were included in the studies?

  ❑ Based on the research that you found, what would you say to Manuel?

While there is no single correct answer to this question, here is one approach to answering these questions.

The PICO framework could be developed as follows:

P = symptomatic consumers with schizophrenia

I = high-dose olanzapine

C = no drug treatment or olanzapine at recommended doses

O = further reduction of symptoms

Search the literature by using PubMed and the PICO framework to develop usable search terms. For instance, if we typed in *symptomatic consumers with schizophrenia*, we would generate no results from this search.

On the other hand, just using *schizophrenia* and *olanzapine* would likely yield thousands of results because it would yield any schizophrenia-related article that mentions olanzapine in the text.

Start with a combination of terms such as *symptomatic*, *schizophrenia*, *high dose*, and *olanzapine*. Searching the literature is an iterative process. Examine your search results and use them to guide further searches, if needed.

Alternative terms may be more productive. *Symptomatic* may only yield limited results. You could try alternative search terms such as *positive symptoms*, *hallucinations*, *psychosis*, or other related terms.

The same could be true for *high dose*. This term may be represented in the literature more often as *super-therapeutic* or *maximal dose*. You may even try searching using just the term *dose* if the alternatives do not yield results. When results are limited, the comparison does not necessarily have to be put in as an additional search term.

Searching terms such as *no treatment* or *treatment-as-usual* may not have much of an effect on the search. Typically, the comparison is useful if you would like to restrict your search. For instance, if you were interested only in studies examining high-dose olanzapine versus clozapine, then using the comparison search term *clozapine* would be highly valuable.

In most PICOs, we are searching for the outcome, but including the outcome term may also restrict search results in undesirable ways. If you get inconsistent results for the use of high-dose olanzapine in schizophrenia, for example, searching terms such as *symptom improvement* or *symptom reduction* may limit the results to only positive studies, omitting negative studies.

PubMed and OVID offer other ways to limit searches. If the original search terms yield too many results, use PubMed or OVID to further restrict the search to studies only in humans, or studies in English, or studies available only in full text.

There are also many subheading categories that you can use if a term is "mapped." When mapping search terms, you can limit the search to certain subcategories, or if your search yields too few results, you can "explode" the term to capture related terms.

In Manuel's case, evidence is limited for benefits of olanzapine doses higher than 20 mg/day. Some data indicate that olanzapine doses greater than 20 mg may benefit consumers who only partially respond to an adequate trial of olanzapine 20 mg (Volavka et al., 2002; Lindenmayer et al., 2001).

The Clinical Antipsychotic Trials of Intervention Effectiveness (CATIE) study also used doses up to 30 mg/day (Lieberman et al., 2005) and a randomized controlled trial of consumers with treatment-resistant schizophrenia compared high dose olanzapine (up to 45 mg/day) to clozapine (Meltzer et al., 2008).

After reviewing these studies, you may inform Manuel that evidence shows that higher doses of olanzapine have helped some consumers, but the evidence is not so strong that he can feel assured that a dose increase will be effective.

Sharing information about the most updated research evidence with consumers is key to the shared decisionmaking process. Partner with the consumer to integrate the best evidence from systematic research, your clinical expertise, and the consumer's experience when making medication decisions.

Case Example 2

Tami, a consumer with a long history of schizophrenia, has taken four antipsychotic medications without improvement. Her prescriber wanted to try clozapine, but Tami does not wish to have her blood drawn. Therefore, Tami does not consent to clozapine treatment.

The prescriber understands that polypharmacy is viewed as a last resort, but wonders if any new studies show its value in this situation.

Exercise

- Use the PICO framework to develop a clinical question to inform medication decisions for Tami.

- Use an available search engine to access research articles related to your clinical question.

- Examine the level of evidence in the studies that you found.

  - ❏ Did these studies look at a large number of consumers?

  - ❏ What types of studies are they (for example, randomized control trials, case studies, etc.)?

  - ❏ Which populations were included in the studies?

  - ❏ Based on the research that you found, what would you say to Tami?

While there is no single correct answer to this question, here is one approach to answering these questions.

The PICO framework could be developed as follows:

  P = consumers with treatment-resistant schizophrenia

  I = antipsychotic polypharmacy

  C = clozapine or single antipsychotic use

  O = reduction of symptoms

Search the literature by using PubMed and the PICO framework to develop usable search terms. Possible search terms include *treatment resistant, schizophrenia, antipsychotic,* or *polypharmacy.* Alternative terms may include *antipsychotic augmentation, clozapine,* or *monotherapy.*

Do not use outcome terms for your initial search. If this search yields a large number of results, then it could be further limited with an outcome search term such as *symptom reduction.*

To date, very limited data support using polypharmacy. A few studies examined augmenting clozapine with other agents (Stahl & Grady, 2004). However, the results have been mixed. Only one trial examining polypharmacy did not include clozapine. The findings suggest no difference between using two typical antipsychotics versus using monotherapy with an alternative typical antipsychotic.

After reviewing these studies, tell Tami your findings and use them as a basis of discussion to make a shared decision about her medication treatment.

Dr. Jones is having a discussion with the case manager on his team, Robin, who is concerned about the pronounced negative symptoms of a consumer named Julio.

Julio has been on haloperidol decanoate for 4 years with good results in the reduction of positive symptoms. Julio's negative symptoms (primarily asociality and poor hygiene) have always been pronounced. None of the three first-generation antipsychotics he has tried have helped in this area.

Robin recently heard that atypical antipsychotics were much better than typical antipsychotics for negative symptoms and cognition. Dr. Jones has heard variable comments on this issue from colleagues and at lectures but has not researched this issue himself. The conversation sparked his interest and he wants to examine the literature more closely to arrive at his own conclusion.

Exercise

- Use the PICO framework to develop a clinical question to inform medication decisions for Julio.

- Use an available search engine to access research articles related to your clinical question.

- Examine the level of evidence in the studies that you found.

  ❑ Did these studies look at a large number of consumers?

  ❑ What types of studies are they (for example, randomized control trials, case studies, etc.)?

  ❑ Which populations were included in the studies?

  ❑ Based on the research that you found, what would you say to Robin and Julio?

While there is no single correct answer to this question, here is one approach to answering these questions.

The PICO framework could be developed as follows:

P = consumers with schizophrenia experiencing negative symptoms

I = atypical (second generation) antipsychotic

C = typical (first generation) antipsychotics

O = improvement in negative symptoms

Search the literature by using PubMed and the PICO framework to develop usable search terms. Possible search terms include *schizophrenia, negative symptoms, asociality, atypical antipsychotic,* or *second-generation antipsychotic, typical antipsychotic,* or *first-generation antipsychotic*.

Do not use outcome terms for your initial search. If this search yields a large number of results, then it could be further limited with an outcome search term such as *improvement*.

This case was included to show the decreased utility of a very broad search. Even though a proper PICO framework is developed, the topic areas are very broad, so a literature search in PubMed or OVID generates a very large literature result.

In cases like these, limit the search to systematic reviews, meta-analyses, or those articles available in full-text format only. Alternatively, refine the PICO framework to examine the specific atypical antipsychotic or a specific negative symptom.

This example highlights why it can be difficult to develop a PICO framework and how your PICO framework can be refined if the desired results are not produced. The more specific the inquiry; the fewer results you will receive.

In this case, newer studies such as CATIE have questioned the superiority of atypical antipsychotics versus typical antipsychotics in terms of reducing negative symptoms (Weiden, 2007). The literature to date tends to be inconsistent as to whether atypical antipsychotics really do improve negative symptoms.

Many studies show improvement of only certain symptoms and no improvement on others. These conflicting results show the importance of carefully evaluating the literature and the design of the studies to see if study results can be applied to the case you are reviewing.

After reviewing the studies, tell Robin and Julio of your findings and use them as a basis of discussion to make a shared decision about his medication treatment.

Case Example 4

Anna, a 26-year-old consumer with schizophrenia, has recently become pregnant. She is currently on aripiprazole for her symptoms.

She is concerned that continuing the antipsychotic may harm her baby. She wants to know exactly what can happen to her child and if she can use aripiprazole during any part of her pregnancy.

Her prescriber reads the drug information reference and sees that aripiprazole is listed as *Pregnancy Risk Factor C*.

Exercise

- Use the PICO framework to develop a clinical question to inform medication decisions for Anna.
- Use an available search engine to access research articles related to your clinical question.
- Examine the level of evidence in the studies that you found.
  - ❑ Did these studies look at a large number of consumers?
  - ❑ What types of studies are they (for example, randomized control trials, case studies, etc.)?
  - ❑ Which populations were included in the studies?
  - ❑ Based on the research that you found, what would you say to Anna?

While there is no single correct answer to this question, here is one approach to answering these questions.

The PICO framework could be developed as follows:

P = pregnant consumer with schizophrenia

I = aripiprazole

C = no medication

O = risk and benefits with aripiprazole in pregnancy

Search the literature by using PubMed and the PICO framework to develop usable search terms. Possible search terms include *pregnancy, schizophrenia,* and *aripiprazole*.

Since the topic is relatively specific, start your search with these terms only. If your search is more general, like *atypical antipsychotic*, then other search terms may be needed.

This example allows us to briefly discuss specific populations in literature searches. This can be a pitfall because very specific populations may have limited research data pertaining to them. For instance, it may be impossible to find an article about tardive dyskinesia in African American females with schizophrenia and mental retardation. However, if a less specific population is defined, such as tardive dyskinesia in African Americans, then the literature search may produce results that can apply to the more specific population.

In the case of Anna's pregnancy, much of the relevant information is in the tertiary literature, drug references, or package insert for aripiprazole. Aripiprazole is listed as *Pregnancy Risk Factor C*. That means that in animal studies, aripiprazole demonstrated developmental toxicity, including possible teratogenic effects in rats and rabbits.

Pregnant animals treated with very high doses of aripiprazole were found to have slightly prolonged gestation, decreased fetal weight, undescended testes, delayed skeletal ossification, fetal mortality, skeletal abnormalities, still births, and abortions. Some maternal toxicity was seen at 30 mg/kg; however, no evidence suggested that these developmental effects were secondary to maternal toxicity.

No adequate and well-controlled studies in pregnant women exist. It is not known whether aripiprazole can cause fetal harm when administered to a pregnant woman or whether it can affect reproductive capacity. The effect of aripiprazole on labor and delivery in humans is also unknown.

Aripiprazole was excreted in milk of rats during lactation. It is not known whether aripiprazole or its metabolites are excreted in human milk.

According to this research, aripiprazole should be used during pregnancy only if the potential benefit outweighs the potential risk to the fetus. It is also recommended that women receiving aripiprazole not breast feed.

After reviewing the studies, tell Anna of your findings and use them as a basis of discussion to make a shared decision about her medication treatment.

Summary

Use the information in this module to develop a systematic plan to help MedTEAM staff keep up with the evidence related to medications.

Offer ongoing training and develop treatment guidelines or algorithms to guide medication treatment to support prescribers in their effort to integrate the latest scientific evidence during the shared decisionmaking process.

EVIDENCE-BASED
PRACTICES
KiT

Knowledge Informing Transformation

Training Frontline Staff

Module 3: Integrating Outcome Measures into Clinical Assessments

A core element of MedTEAM is using quantitative outcome measures to help prescribers and consumers evaluate whether medications are having the desired effect. This module provides information to help you identify outcome measures and develop a plan for collecting them and training MedTEAM staff to integrate these measures into clinical assessments.

Measuring outcomes is at the heart of medication management for serious mental illnesses, just as accurately measuring blood pressure and glucose is at the heart of medication management of hypertension and diabetes. However, staff who are accustomed to conducting these assessments without quantitative measures may resist the idea of integrating outcome measures into clinical assessments.

A number of reasons support using quantitative outcome measures. First, routinely using medication-related outcome measures helps prescribers and consumers evaluate whether medications are having the desired effect. It can be difficult to determine whether improvements have been made between visits when using global terms such as *somewhat psychotic* or other subjective terms.

Second, outcome measures offer a common language to promote a clearer description of consumers' symptoms and conditions. In contrast, it is difficult, if not impossible, for another prescriber to interpret symptom levels when global or subjective terms are used.

Identify outcome measures

Prescribers may assume that objective scales with demonstrated reliability across raters will be too lengthy to use in busy clinic settings. However, brief scales have been developed for schizophrenia, bipolar disorder, and major depressive disorder. For example, measuring positive symptoms in schizophrenia is highly relevant for managing antipsychotic medications. Although negative symptoms can affect medication-related behaviors such as adherence, the evidence that negative symptoms can be positively affected by medications is less robust.

Brief scales to measure positive and negative symptoms of schizophrenia have been developed for the Texas Medication Algorithm Project (TMAP). They are available in the *Clinician's Procedural Manual for Schizophrenia Treatment* at **http://www.dshs.state.tx.us/mhprograms/TIMA.shtm**.

Brief scales developed through TMAP to measure depressive and bipolar disorder symptoms are available from the same Web site in the *Major Depressive Disorder* and *Bipolar Disorder Clinician's Procedural Manuals*, respectively.

The following resources include additional psychiatric rating scales for you to review and consider, including scales to assess common symptoms such as anxiety, depression, and insomnia:

- *Rating Scales in Mental Health* (2nd ed.) (Sajatovic & Ramirez, 2003); and

- *Handbook of Psychiatric Measures* (2nd ed.) (Rush, First, & Blacker, 2008).

Monitor side effects

In recent years, concern has grown about the potential of the newer antipsychotic medications to cause serious medical problems including weight gain, diabetes, hyperlipidemia, hyperprolactinemia, and cataracts. Marder et al., (2002) reported on recommendations for monitoring side effects that were developed at a consensus conference of psychiatrists and experts in obesity, disease prevention, diabetes, cardiology, endocrinology, and ophthalmology.

At the time of publication, these were the most comprehensive guidelines for monitoring physical side effects of antipsychotics since the introduction of second-generation antipsychotics.

We recommend that you scan the current literature for similar compilations of critical side effects to monitor for your population of focus. Incorporate a process for regularly monitoring medication side effects into your MedTEAM training plans.

Train staff

Proper training is vital to obtaining reliable outcome measures that may be integrated into clinical assessments. Training should not be a one-time event. If MedTEAM staff work in isolation and are not periodically rechecked, they may "drift" to more idiosyncratic ways of interviewing and scoring. Thus, you should have a regular program to reassess MedTEAM staff who collect outcome measures and, when needed, retrain them.

If your agency adopts the Positive Symptom Rating Scale (PSRS) or Brief Negative Symptom Assessment (BNSA), consider using the *Practice Demonstration Video* contained in the DVD that accompanies this KIT. This video discusses the core principles described below and other issues specific to using these measures to inform clinical assessments. Video training components for other outcome measures are often available from the developers of the instruments.

Conduct checks on the outcome ratings of MedTEAM staff every 6 to 12 months. Assess the reliability of ratings by comparing MedTEAM staff ratings of a taped interview with ratings by expert or experienced raters. Scores within one point of the criterion rating by experienced raters are considered correct. To be judged *reliable*, a rater's scores should be correct at least 80 percent of the time, based on at least two interviews.

Core principles for training

When collecting outcome measures for clinical assessments, every MedTEAM staff member should keep in mind some general principles. Following these principles will help the rater produce more reliable and accurate ratings.

■ **Always use the anchor points, no matter how many times you have administered the rating scale.** Attending to the anchor points will make your ratings more consistent and increase the likelihood that your ratings will agree with those of other MedTEAM staff rating the same consumers.

■ **Finish the entire interview before deciding on final ratings.** While the questions are typically asked in sequential order, consumers may add information later in the interview that alters the rating. Use information from the entire interview to make your final decision on each item.

■ **Pay close attention to item definitions.** Item definitions may include examples of symptoms that are less familiar to you. Read definitions carefully.

■ **Pay close attention to the phrasing of anchor points.** Often anchor points will contain the word *or*. This word should alert you that only one of two statements must be true to assign a particular rating.

Many behavioral rating scales use anchor points to guide the rater. The purpose of anchor points is to have all raters use the same criteria in making ratings. Studies have shown that reliability or consistency of ratings falls markedly when raters use "clinical judgment" instead of anchor points to do ratings.

It is critical that ratings be done on the basis of concrete observations, guided by anchor points. The place for clinical judgment is in interpreting ratings, not in making the ratings. For example, thoughts rated as delusions might reflect different cultural beliefs, or affect rated as flat might be due to medication effects. The clinical note is the place to indicate possible explanations for observed ratings.

Cultural, ethnic, and racial considerations

A fairly extensive literature exists about pharmacokinetic and pharmacodynamic differences among racial or ethnic groups. Pharmacokinetics is the study of drug metabolism, which affects the amount of a drug in the system. Pharmacodynamics is the study of differences in drug effects that are independent of differences in drug metabolism.

Pharmacodynamic differences between groups can be in main effects of the drugs, but are often found in sensitivity to drug side effects. Related to pharmacokinetic and pharmacodynamic differences across individuals and groups is a growing literature on genetic determinants of drug effects, with many relevant genes being distributed differently in different populations.

The majority of the pharmacokinetic literature examines phenotypic Cytochrome P450 enzyme variants. These liver enzyme polymorphisms can often lead to clinically relevant differences in drug metabolism, producing variations in psychotropic efficacy and side effects.

The following analysis about schizophrenia illustrates the importance of considering culture, race, and ethnicity in managing psychotropic medications.

A good deal of research has found that symptoms of schizophrenia are very similar across cultures and across racial and ethnic groups. Cultural competency for this disorder is much more about recognizing when beliefs and behaviors are culturally appropriate and not symptoms of the disorder. Moreover, we must understand cultural determinants of social, family, and personal reactions to these symptoms.

With regard to antipsychotics, studies have not identified marked racial or ethnic differences in metabolism of antipsychotics (Arranz & de Leon, 2007). However, variations in drug metabolism are seen between racial or ethnic populations in other drugs that can affect the metabolism of antipsychotics. For example, 7 to 10 percent of Caucasians, versus 1 to 2 percent of Asians have polymorphisms at CYP2D6, which make them poor metabolizers of drugs that go through this pathway (Arranz & de Leon, 2007).

Fluoxetine is a strong inhibitor of CYP2D6, which is a major pathway for metabolism of aripiprazole and haloperidol. That is, a Caucasian is 4 to 5 times more likely than an Asian to be a poor metabolizer and 4 to 5 times more likely to have problems due to high levels of these antipsychotics when they are used in combination with fluoxetine.

Controlled studies of consumers of Asian descent have found that they often require lower doses of antipsychotics compared to Caucasian populations to produce the same antipsychotic effect (Ng et al., 2005; Lin & Finder, 1983).

The evidence supporting differences between other ethnic populations is not as strong. Some data suggest consumers of Hispanic or African American descent may require different antipsychotic doses than Caucasian populations, but reports are conflicting on this issue in metabolic genotyping studies (Frackiewicz, Herrera, Sramek, Collazo & Lawson, 2002; Arranz & de Leon, 2007).

Pharmacogenetics is the study of genes that relate directly to drug actions. Variations in these genes between populations can cause differences in drug effects in the populations.

Pharmacogenomics is a term sometimes used interchangeably with pharmacogenetics, but can also include the study of genes that relate to drug effects beyond the primary sites of drug actions.

Pharmacogenetic and pharmacogenomic research is difficult to conduct and replicate because of many factors. These factors include, but are not limited to, the following:

- Study design;
- Large number of subjects necessary to perform the studies;
- Clinical and environmental differences between sample populations; and
- Heterogeneity of contributing factors.

Much of the pharmacogenetic literature explores the short-term (weeks to months) changes in gene expression of receptors, transporters, and growth factors in response to psychotropic drugs.

An example of a replicable pharmacogenetic finding that affects clinical practice is the discovery that Asian consumers with HLA-B*1502 allele are at 10 times the risk of developing Stevens-Johnson syndrome or toxic epidermal necrolysis when exposed to the antiepileptic/mood stabilizer, carbamazepine, than Caucasian populations. (See carbamazepine package insert: **http://www.pharma.us.novartis.com/product/pi/pdf/ tegretol.pdf**.)

HLA-B*1502 allele genetic testing is now recommended in Asian consumers before initiating carbamazepine. (See carbamazepine package insert.)

As more genetic tests become available and further well-controlled studies in homogeneous populations are conducted, researchers will give providers a clearer sense of the magnitude of the effects of genetic differences on response to psychotropic medications and of the value of testing for gene variants.

Incorporate this evolving evidence into your training on clinical assessments to increase the validity of your outcome measure ratings for consumers of diverse backgrounds.

Summary

Implementing MedTEAM entails new documentation practices, keeping up with scientific breakthroughs on medications, and integrating outcome measures into clinical assessment.

Offer training on these topics to effectively implement MedTEAM.

A Life in the Community for Everyone

SAMHSA

Substance Abuse and Mental Health Services Administration
U.S. Department of Health and Human Services