Common wisdom among domestic violence advocates is that domestic violence is so prevalent that everyone in the world knows of at least one person who has experienced this form of abuse. In recognition of this pervasive problem, October has been designated Domestic Violence Awareness Month (DVAM). According to the National Resource Center on Domestic Violence in Pennsylvania, “DVAM is a time for collective action, a time for communities to unite to mourn those who have died as a result of abuse, celebrate those who have survived, connect those who work to end violence, and raise public awareness about Domestic Violence.”

The Migrant Clinicians Network (MCN) is committed to ending Domestic Violence in all its forms among Migrant Farmworkers and all mobile populations. This includes emotional abuse, physical abuse, and sexual abuse. MCN addresses these three forms of abuse in a series of innovative programs that reach the underserved mobile population.

One of MCN’s most successful current programs is Familias con Voz Primary Prevention Program which gives families opportunities to prevent Domestic Violence in their own communities. Advocates in the Familias con Voz Program have provided education to their peers through:

- Presentations on the dynamics of domestic violence, including myths and realities about domestic violence, power and control, and safety planning. Presentations have taken place at WIC clinics, churches, schools, and health fairs.
- The Men’s Pulga Project, through which advocates have begun providing family violence education at the grassroots level by visiting local flea markets and speaking with men about family violence issues.
- Families Program, a primary prevention program designed by Women’s Crisis Support—Defensa de Mujeres in Watsonville, California.

This program has inspired women and men in several communities around the nation to initiate similar programs.

Please join MCN in conveying the truth about domestic violence by educating yourself and others on domestic violence issues and resources. Please remember that screening for domestic violence is a practical way clinicians can prevent and intervene in situations of domestic violence. Furthermore, clinicians can grant the underserved mobile population a voice to end domestic violence if they view the it as preventable. Please visit the MCN website at www.migrantclinician.org for a complete list of domestic violence resources and a free downloadable copy of MCN’s Addressing Domestic Violence in a Clinical Setting. If you have any questions or comments related to Domestic Violence, please feel free to contact Cesar J. Alvarado, MCN Membership Coordinator and Family Violence Program Assistant or Stephanie Freedman, MCN Programs Director, at the number and/or e-mail addresses below.

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Please Join MCN in Ending Domestic Violence in Our Communities
Evidence-Based Changes to TB Treatment Recommendations

Migrant health care providers fighting tuberculosis now have access to new guidelines to help them make evidence-based treatment decisions. Since 1971, the American Thoracic Society (ATS) and the US Centers for Disease Control and Prevention (CDC) have published joint guidelines for the treatment of tuberculosis; their previous version appeared in 1994. The new guidelines, published earlier this year (Am J Respir Crit Care Med 2003; 167: 603-62; and MMWR June 20, 2003; Vol. 52: No. RR-11), were co-sponsored by the Infectious Diseases Society of America (IDSA).

During 2002, a total of 15,078 TB cases were reported to the CDC, representing a 5.7% decline from 2001, a 43.5% decline from the 1992 peak of the TB resurgence, and the lowest recorded TB rate in the United States since reporting began in 1953. Overall national declines in TB incidence mask substantial disparities between rates in the majority of U.S. residents and rates in foreign-born persons and U.S.-born non-Hispanic blacks, which now account for approximately three fourths of all TB cases. The ratio of foreign-born to U.S.-born rates doubled, from 4.2 in 1992 to 8.4 in 2002. In 2002 for the first time, TB cases among foreign-born persons accounted for the majority (51%) of all TB cases in the United States. The number of states with >50% of cases among foreign-born persons increased from four in 1992 to 22 in 2002. The most common birth countries for foreign-born persons with TB in 2002 were Mexico (24.8%), the Philippines (11.3%), Vietnam (8.6%), India (7.6%), China (4.5%), Haiti (3.4%) and South Korea (2.7%). The majority of TB cases in foreign-born persons are the result of progression to disease among persons infected before immigrating to the United States. U.S.-born non-Hispanic blacks comprised the largest number of TB cases among both U.S.-born and foreign-born populations, representing 46.7% of TB cases in U.S.-born persons and approximately one fourth of all cases.

Primary care providers in Migrant/Community Health Centers are frequently the primary providers of health care for a majority of the individuals described above and therefore it is incumbent upon these providers to have a good working knowledge of the diagnosis and treatment of tuberculosis. The purpose of this article is to briefly present the changes in the new recommendations and update migrant clinicians on the diagnosis and treatment of tuberculosis.

The recommendations have changed little since 1994, since there have been disappointingly few new trials of TB treatments, and no new drugs. However, to help health care providers make informed treatment decisions, the recommended treatment regimens are, for the first time, graded according to the strength of the recommendations and the quality of evidence. Also, the new guidelines shift responsibility for treatment compliance from the patient to the health care provider, advising that directly observed therapy, short course (DOTS) should be at the center of each treatment strategy.

What Else is New in This Document?

- Emphasis is placed on the importance of obtaining sputum cultures at the time of completion of the initial phase of treatment in order to identify patients at increased risk of relapse.
- Extended treatment is recommended for patients with drug-susceptible pulmonary TB who have cavitations noted on the initial chest film and who have positive sputum cultures at the time 2 months of treatment is completed.
- The roles of rifabutin, rifapentine, and the fluoroquinolones are discussed and a regimen with rifapentine in a once-a-week continuation phase for selected patients is described.
- Practical aspects of therapy, including drug administration, use of fixed-dose combination preparations, monitoring and management of adverse effects, and drug interactions are discussed.
- Treatment completion is defined by number of doses ingested, as well as the duration of treatment administration.
- Special treatment situations, including HIV, TB in children, extrapulmonary TB, culture negative TB, pregnancy and breastfeeding, hepatic disease and renal disease are discussed in detail.
- The management of TB caused by drug-resistant organisms is updated.
- These recommendations are compared with those of the WHO and the IUATLD and the DOTS strategy is described.
- The current status of research to improve treatment is reviewed.

Highlights of the Report

The new recommendations now say that extended treatment (2 months initial phase/7 months continuation phase prolonged to 7 months for a total of 9 months) is recommended for patients with drug susceptible pulmonary TB who have cavitations noted on initial CXR and who have positive sputum culture at the time 2 months of treatment is completed. Additional factors to be considered in deciding to prolong treatment in patients with either cavitations or a positive culture at 2 months (but not both) might include:
- being more than 10% underweight at diagnosis,
- having HIV infection, or
- having extensive involvement on chest radiograph.

The reason for this change in recommendations was based on USPHS Study 22, in which nearly 21% of patients who had both cavitations on initial CXR and a positive culture at

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2 months relapsed. Patients who had only one of these factors had a relapse rate of 5-6%, compared with 2% for patients who had neither risk factor.

There have also been some minor changes in laboratory and clinical monitoring of patients on TB therapy. For all adult patients, baseline Aspartate Aminotransferase (AST), Alanine Aminotransferase (ALT), bilirubin, Alkaline Phosphatase, serum creatinine, and platelet count should be obtained. Routine measurements of hepatic and renal function and platelet count are not necessary during treatment unless patients have baseline abnormalities or are at increased risk for hepatotoxicity (Hepatitis B and C; alcohol abuse).

The recommendations on monitoring of Ethambutol (EMB) have been modified. Since ocular toxicity is rare with recommended doses, routine screening is no longer recommended. The recommendation is still to monitor children, those on elevated doses, and those on EMB for more than 2 months. The patients should still be questioned regarding visual acuity changes.

Treatment of Active Tuberculosis:

Currently there are 10 drugs approved by the FDA for treatment of TB. Fluoroquinolones are not approved but frequently used.

First line drugs
- Isoniazid (INH)
- Rifampin (RIF)
- Pyrazinamide (PZA)

Second line drugs
- Cycloserine
- Ethionamide
- Levofloxacin*
- Moxifloxacin*
- Catifloxin*
- P-Aminosalicylic acid (PAS)
- Streptomycin
- Amikacin/kanamycin*
- Capreomycin

*Not FDA Approved

For uncomplicated tuberculosis sensitive to all first line medications, the regimen consists of 8 weeks of initial phase four drug regimen; INH, RIF, EMB, and PZA, followed by an 18 week regimen of INH and RIF to complete the continuation phase (total of 26 weeks of therapy). It is now acceptable to provide DOTs either 5 days/week (40 doses initial and 90 doses continuation phase) or 7 days/week (56 doses initial and 126 doses continuation phase). The initial phase may be given daily throughout. Daily for two weeks then twice weekly for 6 wks or 3 times weekly throughout.

If PZA cannot be included in the initial 1 month phase, INH/RIF/EMB x 2 months must be given, followed by RIF/INH x 7 mos. If INH cannot be used, RIF/PZA/EMB must be used for all 6 months. If RIF cannot be used, INH/EMB must be used for 12-18 months with PZA for the first 2 months.

Interruption in Therapy:

Continuous treatment is more important in the initial phase of therapy. There is no evidence on which to base detailed recommendations for managing interruptions in treatment, and no recommendations will cover all of the situations that may arise. However, the CDC is now recommending a course of action outlined in the New York City Health Dept. Policy and

Overall national declines in TB incidence mask substantial disparities between rates in the majority of U.S. residents and rates in foreign-born persons, which now account for approximately three fourths of all TB cases.

Procedure manual: “If interruption occurs during the initial phase of treatment and the lapse is 14 days or more, treatment should be restarted from the beginning. If the lapse is less than 14 days, the treatment regimen should be continued — total number of doses remains the same”. If interruption occurs during the continuation phase after the patient has received more than 80% of total continuation phase doses by DOT, further treatment may not be needed if sputum smear was negative at the start of the continuation phase. If the patient was smear positive initially, recommendations state to continue to complete the number of doses, if patient received less than 80% of doses and lapse is 3 months or more, treatment should be restarted from the beginning.

If the lapse is less than 3 months, treatment should be continued to complete a full course. At the time the patient is returned to treatment sputum cultures should be obtained and repeat drug susceptibility testing performed. If cultures are still positive, the treatment regimen should be restarted. If sputum is negative the patient could be treated as having culture negative TB and given an additional 4 months of combination chemotherapy (INH/RIF).

Hepatotoxicity:

Nearly 20% of patients treated with 4-drug regimen will get asymptomatic elevation of AST. Drug-induced hepatotoxicity is when AST is 3 x > NL with symptoms or AST is 5 x > NL without symptoms. RIF/INH/PZA can all cause hepatotoxicity. If a patient has an abnormal liver function test (LFT), stop all three medications and obtain serologic testing for Hepatitis A/B/C. After normalization of the LFT, restart the medications one at a time while closely monitoring LFTs.

Those who prescribe INH for TB treatment need to be aware of the potential for its impact on liver function. The table below indicates hepatotoxicity findings among patients treated with INH.

<table>
<thead>
<tr>
<th>INH Hepatotoxicity (Percentage of patients treated)</th>
<th>10-20% Elevations of AST up to 5x Normal</th>
<th>0.6% Clinical Hepatitis (maybe less—in one study it was only 0.1%)</th>
<th>2.7% INH plus RIF</th>
<th>2% in persons 50-64 yrs. Old</th>
</tr>
</thead>
</table>

INH hepatotoxicity is increased with liver disease/alcoholism/postpartum (especially Hispanic women). Lupus-like syndrome is common with 20% developing a positive ANA. However, less than 1% develops clinical SLE.

Treatment of Latent Tuberculosis Infection:

Treatment of choice is still nine months of daily INH. Four months of daily Rifampin is also acceptable. Four months of INH/RIF has been shown to be cost saving compared to INH alone, especially in populations with a high prevalence of INH-resistant strains.

Until very recently (MMWR; Vol. 52/No. 31, Aug. 8, 2003) there was a third acceptable regimen of RIF/PZA for 2 months. Recent studies have revealed a 7.7% incidence of hepatotoxicity and high rates of hospitalization and death from liver injury associated with the use of RIF/PZA (RZ) in continued on page 8
TBNet is a comprehensive tracking and referral network that helps provide continuity of care for mobile populations with active tuberculosis or latent TB infection. We specialize in assisting patients who, during the course of their treatment, move within and outside Texas. Although designed with migrant farmworkers in mind, TBNet can be a useful tool in the treatment of other migrant populations such as prison parolees, homeless persons, and recent immigrants. And the service is provided at no cost to clinicians or patients.

So, how does TBNet work? We provide a central storehouse of patient medical information that is kept confidential. Our toll-free phone number is operated by expert, bilingual, culturally-competent staff who offer resource and referral information for patients and clinicians. An innovative component of the TBNet system is the portable record that is supplied to patients. About the size of a credit card, this bilingual record contains tuberculosis treatment information including clinics and caregivers patients have seen, smear and culture results, and a weekly drug-o-gram.

Who does TBNet benefit?
TBNet helps clinicians by letting them know the treatment outcomes of mobile patients after they have left their care, and helping to ensure that patients continue/complete care. TBNet helps patients by empowering them to take an active role in treatment and providing information and referrals to patients who do not know of resources in a new area.

If you work with a mobile population and think TBNet could be useful to you or your clinic, contact Jeanne Laswell or Lindsey Stuart. We provide many resources and technical assistance as well as a free systems manual detailing how to implement TBNet.

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From the Desk of the Medical Director
Isn’t it funny how some research outcome based interventions take forever to be used in clinical practice while some tried and true clinical interventions take a long time to be justified by good research? An article in the September issue of Pediatrics (“Safety-net Antibiotic Application in Acute Otitis Media”, September, 2003 Pediatrics) confirms what many well-seasoned providers have been doing for a number of years. The study confirms that providing pain relief and a “safety-net” antibiotic prescription (SNAP) to be filled only if symptoms do not resolve after 48 hours of observation can indeed reduce the use of antibiotics for acute otitis media (AOM). An interesting finding was that many parents were willing to treat otitis media with pain management alone and would be willing to consider that strategy in the future.
Medical and Nursing Environmental Education and Practice Guidelines Launched

Pesticide Initiative Creates Standards for Front-Line Health Care Providers

Shelley Davis and Amy K. Liebman

In a step to prepare the nation’s primary health care providers to recognize and effectively treat pesticide-related illness, The National Environmental Education & Training Foundation (NEETF) has released national pesticide competency and practice skills guidelines for physicians and nurses—part of the U.S. Environmental Protection Agency’s (EPA) National Strategies for Health Care Providers: Pesticides Initiative.

The two companion documents, National Pesticide Competency Guidelines for Medical & Nursing Education and National Pesticide Practice Skills Guidelines for Medical & Nursing Practice, were developed specifically for front-line health care professionals. The Initiative was undertaken to fill a gap in health professional education and address the public health risks posed by the widespread use of pesticides in the United States. These guidelines are particularly relevant to the migrant clinician as farmworkers are especially at high risk since they often work and live in areas where pesticide exposures can be significant.

The U.S. Bureau of Labor Statistics has found that farmworkers experience the highest rate of chemical-related illness of any occupational group: 5.5 cases per 1,000 workers. (52 Fed. Reg. 16,050, 16,059, 1987). The EPA estimates that agricultural workers suffer 10,000 to 20,000 acute pesticide poisonings each year. (Blondell1 1997). California is one of the few states with a well established program to collect and investigate pesticide incident reports. In 2000, the California Department of Pesticide Regulation (DPR), found 893 incidents to be possibly, probably or definitely related to pesticide exposure (DPR 2000). Of these confirmed cases, 417 (47 percent) involved agricultural workers. In the ten-year period from 1991 to 2000, even as the total number of all cases that could possibly, probably, or definitely be traced to pesticide exposure gradually declined, the percentage of such cases involving agricultural workers rose. (DPR 2000.) In the period of 1998 – 2000, the DPR for the first time identified the source of the exposure in its published reports. For that period, it found that 51 percent of the agricultural exposures (681 cases) occurred when pesticides drifted from the target onto nearby workers and 25 percent (336 cases) were due to dermal contact with pesticide residues on the crop (Reeves, et al. 2002: 17, Figure 3.1). However, DPR found no regulatory violations in 286 (42 percent) of the 681 drift cases or in 189 (56 percent) of the 336 residue cases, indicating that in many instances the law is too weak or the incident investigations are inadequate (Reeves, et al. 2002: 5).

Epidemiological studies show that occupational exposure to pesticides results in an increased risk of chronic health problems such as cancer, adverse reproductive outcomes, and Parkinson’s Disease. For example, a study of cancer among members and retirees of the United Farm Workers of America (UFW) analyzed data from the California Cancer Registry for a 10-year period and found that UFW farm workers had elevated rates of certain cancers, as compared to all Latinos living in California. Increased risk was reported for leukemia (Odds Ratio (OR): 1.59, i.e., a 59 percent increased risk); stomach cancer (OR: 1.69); uterine/cervix cancer (OR: 1.63); uterine corpus cancer: (OR: 1.68), and brain cancer (OR: 1.57). “Occupational exposure, particularly to pesticides, may explain the elevated risk of leukemia and brain cancer,” the study authors observed, because both of these cancers are highly associated with occupational exposure to pesticides (Mills 2001: 600 and passim).

Birth defects have also been associate with occupational exposure to pesticides. A Minnesota study of 210,000 live births showed that the birth defect rate for all birth anomalies was significantly higher in children born to pesticide applicators than to children born in urban areas of the state. Applicators’ children in the western agricultural area of the state had a birth defect rate of 30.0 per 1,000 live births, whereas children born in the Twin Cities had a rate of 18.3 per 1,000 live births (Garry, et al. 1996).

Children face particular risks from pesticides as their developmental patterns, behavior and physiology make them more susceptible and more exposed to toxins than adults (Landrigan, 2001; Faustman et. al., continued on page 6

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Children are more exposed to pesticides than are adults because pound for pound, children eat more food, drink more water and breathe more air than adults. Additionally, children crawl and play on the ground, increasing their exposure to contaminants in dust, soil and carpets. They also engage in hand-to-mouth activity, increasing their ingestion of any toxic chemicals in dust or soil. Lastly, children’s developing bodies are less able than adults to metabolize and excrete certain pollutants.

In the agricultural setting, children may be exposed to pesticides in a number of ways: through prenatal exposure, in the fields where their parents work, contact with pesticide residues on parents’ clothing, living next to areas being treated, and working in the fields themselves.

According to James R. Roberts, MD, Assistant Professor of Pediatrics, Medical University of South Carolina, and a co-author of the guidelines, “Environmental health risks are a leading cause of illness due, in part, to the widespread use of pesticides, yet most physicians today receive minimal training in environmental health as part of their education and ongoing practice.” This national trend is reflected in the findings of a MCN needs assessment conducted in 2000 that found that most migrant clinicians have limited education and training in occupational and environmental health: In fact, 83% of the respondents said they had had either one or zero training courses pertaining to environmental or occupational health.

Addressing many of these training deficiencies, the NEETF practice guidelines set forth six essential practice skills. They are:
1. Taking an Environmental History
2. Awareness of Individual and Community Pesticide Risk Factors
3. Knowledge of Key Health Principles
4. Clinical Management of Pesticide Exposure
5. Reporting Pesticide Exposures and Supporting Surveillance Efforts
6. Providing Prevention Guidance and Education to Patients.

Taken together, the competencies cover the basic background information necessary to address pesticide issues, the clinical skills needed to recognize and manage acute or chronic pesticide-related health problems, and the knowledge required to cooperate with surveillance efforts and foster prevention activities. In each section, the knowledge needed for the practice skill is fully described and a helpful list of resources is provided. The guidelines are not intended to be a reference manual and do not replace other resources.

**Resources**


National Pesticide Information Center (NPIC): 1-800-858-7378 is a toll free hotline with science-based pesticide information. It also has a list of state and regional poison control centers. Hours of operation are Monday through Friday 9:30 a.m. - 7:30 p.m. Eastern Standard Time. Their web site address is [http://npic.orst.edu/](http://npic.orst.edu/)

The Pesticide Action Network Pesticide Data Base provides complete pesticide toxicity and regulatory information. The PAN data base may be accessed at the following address: [http://www.pesticideinfo.org/index.html](http://www.pesticideinfo.org/index.html)

The Pesticide Action Network of North American (PANNA) is launching its Pesticide Poisoning Diagnostic Tool. This new internet tool is designed to help healthcare professionals and others recognize, diagnose and report pesticide-related illnesses. The database currently provides symptoms, first aid and treatment-related information for about 1900 pesticides. Most importantly, the tool allows users to search for possible pesticide poisoning agents by entering a variety of relevant information that may be available to them. One can search by chemical or product name, pesticide use type, geographic location, and crop or application site. In addition, a health care provider (or other users) can conduct a search by entering observed symptoms. This online resource also provides reporting information (legal requirements, reporting instructions and official reporting contacts) for all 50 states. County-level information is provided for California and Florida. For more information contact Margaret Reeves at mreeves@panna.org.

The Migrant Clinicians Network is launching HEART (Health and Environment Analysis and Resource Tool) is an interactive web based geographic application to support field clinicians looking for information, tools, referrals and services for their migrant patients. While this tool was developed to assist clinicians in the recognition and management of environmental/occupational exposures and illness related to farm work, it is also a powerful tool to improve access to more general primary care. This exciting new tool will also be linked with the PANNA database to provide a more comprehensive service. To access this tool go to [gis.cdc.gov/mcnarcims](http://gis.cdc.gov/mcnarcims).

**Upcoming Training**

Farmworker Justice Fund Inc. has been organizing a series of seminars on the Recognition, Management and Reporting of Acute and Chronic Health Problems Related to Pesticide Exposure, which are co-sponsored by the National Center for Farmworker Health and the Migrant Clinicians Network. Upcoming sessions will be held in in Laredo, TX, Presidio, TX and Tucson, AZ (see [www.fwjustice.org](http://www.fwjustice.org) for further details).

PANNA will launch its Pesticide Poisoning Diagnostic Tool as both a special plenary presentation and a 1.5-hour workshop at the Northwest Regional Primary Care Association (NWRPCA) annual conference in Portland, Oregon (18-22 October 2003).
books such as the Recognition and Management of Pesticide Poisoning by Drs. J. Routt Reigart and James R. Roberts (EPA 1999).

The section on taking an environmental exposure history offers a good example of the information contained in the practice guidelines. First, it explains the purposes to be served by including an environmental exposure history in routine patient history questionnaires. They include increased awareness of pesticide risk factors, improved diagnosis, identification of potential workplace or environmental hazards and disease prevention. Next, it provides sample screening questions for adults and children, as well as a list of the issues to be addressed in a comprehensive occupational or environmental assessment. Clinicians are also urged to develop a network of local and state experts to whom they can turn for advice, assistance or referrals. A list of nationally available references and resources is also provided. Finally, it describes the kinds of information which can be found on a pesticide label.

**References**


Evidence-Based Changes to TB Treatment Recommendations

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the treatment of LTBI. On the basis of these findings, the American Thoracic Society (ATS) and CDC now recommend that this regimen should generally not be offered to persons with LTBI for either HIV-negative or HIV-infected persons. If a provider decides to use this regimen, the clinician should dispense no more than a 2-week supply, patients should be reassessed in person by a health-care provider and liver function tests must be monitored at baseline, 2, 4, and 6 weeks of treatment. The recommendations against the use of RZ for treatment of LTBI described do not apply to the appropriate use of rifampin and PZA in multidrug regimens for the treatment of persons with active TB disease.

Future Breakthroughs in Diagnosis and Treatment of Tuberculosis:

A new enzyme-linked immunospot assay, ELISPOT has recently been developed. ELISPOT detects T cells specific for Mycobacterium tuberculosis antigens that are absent from Mycobacterium bovis BCG and most environmental mycobacterium. “ELISOT offers a more accurate approach that Tuberculin Skin Test (TST) for identification of individuals who have latent TB infection and could improve TB control by more precise targeting of preventive treatment” concluded Ewer et al. (Lancet, 2003:361(9364):1168-1173).

There are no new medications specific for the treatment of tuberculosis and an effective vaccine still appears to be years away.

The Migrant Clinicians Network’s TBNet has been included in these National Guidelines as one of two (along with Cure TB, managed by the San Diego County, CA, Division of Tuberculosis Control) recognized formal patient-tracking systems in operation for patients moving across the United States-Mexico border. For information on TBNet contact Jeanne Laswell, RN at MCN (512) 327-2017 or go to our website www.migrantclinician.org.

References

5) MMWR (Aug. 8, 2003/Vol52/No.31 pg.735-739)