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Occupational Health Nursing Sessions

THE ILLINOIS DRUG ABUSE PROGRAM AND INDUSTRY

By BARBARA EVANS
Nursing Administrator, Illinois Drug Abuse Program

Before explaining the relationships the Illinois Drug Abuse Program is developing with industry, I would like to tell you about the program. In 1966 the State Legislature established the Illinois Narcotics Advisory Council to recommend solutions to a growing drug abuse problem. After two years of study, the Council recommended that a pilot program for drug abuse treatment and research be established. With one patient, one bottle of methadone and one office, the Illinois Drug Abuse Program began on January 1, 1968. Dr. Jerome H. Jaffe, the Council's chief consultant, served as the first executive director.

IDAP is a state-wide program operated by the Illinois Department of Mental Health in cooperation with the University of Chicago Department of Psychiatry. It offers all accepted methods of treatment for drug abuse and is doing research on additional methods of treatment.

Word of the program spread quickly among people seeking help and IDAP has, of necessity, expanded rapidly. Shortly after opening in 1968, an apartment near the University of Chicago was obtained where the first clinic was located, the Drexel Research Clinic.

Beginning with methadone, a synthetic narcotic with a duration of action of 24 to 36 hours, IDAP started treating more people in need of help. Methadone in prescribed doses controls withdrawal symptoms and does not make the patient "high". Patients who require methadone take the medication daily, mixed with an orange drink.

Methadone medication alone is not considered treatment by the program. It is only a tool that enables us to treat some patients. The most important treatment is therapeutic, in group therapy sessions, individual counseling, vocational rehabilitation, and so forth.

IDAP had plans to open a hospital detoxification unit at Billings Hospital in June of 1968 but the waiting list of people who had applied for treatment grew steadily in the first few months of operation. As many people as possible were placed on methadone until they were able to be admitted to the detoxification unit. We discovered that patients who received methadone and treatment prior to entering the hospital were usually more successful in their attempts to remain drug free than were those who were admitted directly to the hospital. It was also noted at this time that some type of "aftercare" treatment was needed to assist patients in remaining drug free.

In January, 1969, Safari House opened to provide aftercare for patients detoxified at the hospital unit. Safari offered both residential and outpatient services. It has now expanded to a 24-hour multimodality clinic offering residential and outpatient care with methadone, abstinence and detoxification programs. With over 250 patients, Safari House has become the core of IDAP's mid-Southern Chicago region.

The hospital unit was closed after one year of operation and a residential clinic was opened on the grounds of the Tinley Park Mental Health Center. The Tinley Park clinic decreased the incidence of "hospitalities" among patients by providing treatment in a familial atmosphere. The clinic now has 80 residents and is frequently used for training new staff members.

The Gateway House Foundation opened a therapeutic community program in July, 1968. Gateway House is a long-term abstinent residential facility and the most rigid of any of the treatment modalities. The treat-

ment approach at Gateway is based on three phases. In phase I the patient lives and works in one of the three Gateway Houses. Working means being assigned to a specific job function within the house. Patients begin with the most menial work, such as washing dishes, and as they prove themselves responsible, move up to positions of greater importance. A phase II patient continues to live in but works or attends school in the community. A patient lives and works in the community and visits Gateway periodically during the third phase. Every patient knows he has the support of the entire Gateway House family while adjusting to life in and out of the therapeutic setting.

In 1970, IDAP began to approach the problem of drug abuse among the youth. Previously the program had concentrated on treatment for chronic heroin addicts. Pflash Tyre Co., a treatment center for young nonopiate abusers was opened on the north side of Chicago. Pflash began as an outpatient clinic but moved to a larger facility in 1971 and now offers limited residential treatment as well. Also, on the grounds of the Tinley Park Mental Health Center, we have Crossroads, a totally residential clinic for young polydrug users. Crossroads plans include expansion to provide outpatient and aftercare services in the near future.

Presently, IDAP has 27 facilities throughout the state and over 2500 persons in treatment. There are two ways patients enter the program. The first is voluntary; a person requests treatment himself. The second is through a referral from a court. Illinois has a law that allows drug abusers who are accepted by the program to enter treatment rather than jail. We also have priority admissions—those who may enter the program directly and not be put on the waiting list. All Vietnam veterans with a drug abuse problem are admitted as priority cases. Medical conditions such as severe liver damage, lung disease, or pregnancy are also priorities.

The intake admission process consists of a basic questionnaire, psychological testing, a complete history and physical exam including CBC, blood chemistries, chest x-ray, TB skin testing, tetanus innoculation, routine urinalysis and urine testing for drug content. Following the intake process, the patient is referred to the appropriate unit or if necessary assigned to a "holding unit" until regular treatment space is available. Many court referrals may have the stipulation that they must enter a 24-hour facility during the initial period of treatment and they are assigned accordingly.

The Illinois Drug Abuse Program is funded mainly through the Illinois Department of Mental Health. It also operated on a grant from the National Institute of Mental Health to the University of Chicago.

IDAP feels that a close working relationship with industry is necessary because jobs are such an important part of our rehabilitation process. The goal our patients are working towards is to live as normal a life as possible. This means working, supporting a family and being a contributing member of the community. It is extremely difficult to reach this goal if a patient cannot find employment.

We encourage patients to be honest when seeking employment, but it becomes very discouraging when they are turned away from job after job because they are ex-addicts, usually with a police record. Our vocational rehabilitation department is working very hard to place as many patients as possible in jobs or training programs, but again, it is an extremely difficult task. We hire many ex-addicts in our program, not only as counselors but as messengers, secretaries, and so forth, and have been very pleased with their performance of duties. Kemper Insurance Group has been working closely with us in attempting to educate industry as to the potential of ex-addicts as employable people.

If a company discovers an employee has a drug abuse problem, it is much better for the employee to enter a treatment program if he is willing, rather than automatically terminating him. To be able to offer this requires a policy statement from the company of which all employees are aware. The medical department or the department handling such problems must know what treatment facilities are available in their community so appropriate referrals may be made. IDAP has several patients who have received leaves of absence from their jobs during an initial or intensive treatment period and have often returned to their prior jobs as more effective, reliable employees.

The nurse in industry should learn as much as possible about drug abuse and its treatment in order to present a knowledgable report to the management. Without the support of management it would be difficult if not impossible to set up an education and prevention program. The nurse must avoid alarmist tactics and present the facts in a forthright and concise manner. Ideally the industrial nurse, depending on her working situation, should develop a rapport and trust among the employees so that they feel comfortable coming to her with their problems. And not only drug abuse problems, but any that might affect the employee's working efficiency.

The federal government is beginning an all out attack on drug abuse. Last July, Dr. Jerome H. Jaffe, former IDAP Executive Director, was appointed Director of the Special Action Office for Drug Abuse Prevention. Initially the government's efforts are directed towards the armed forces, but hopefully in the near future, drug abuse treatment will be available to anyone in need of treatment.

In almost four years of existence IDAP has collected a tremendous amount of data on drug abuse treatment. This data is currently being correlated and published to assist other treatment programs. Frequently other program planners utilize our training services for their staff.

Drug abuse is a growing problem in America. Treatment programs are being developed throughout the United States that require our support and understanding if they are to do the best possible job. Hopefully more people able to do so will recognize the need and provide the necessary funds and support to continue the work that has begun because drug abuse is a problem that touches all of our lives.

Hospital Safety Sessions

TESTING OF ELECTRICAL MEDICAL APPARATUS

Summary of a Panel Discussion

Alan Reed, manager of product engineering at the Daniel Woodhead Co., Northbrook, IL, was chairman of the panel, which included Seymour Ben-Zvi, from the Downstate Medical Center, State University of New York, Brooklyn, NY, and Robert Mosenkis, senior project engineer at the Emergency Care Research Institute (ECRI), Philadelphia, PA.

In discussing what is being done in hospitals about electrical safety, the approach used by the Downstate Medical Center, a teaching hospital, was cited. This institution is unique in that it usually receives medical cases that are of "advance interest" in medicine. General cases are usually referred to another hospital. For example, the hospital does approximately three open-heart operations a week.

In this hospital there are three areas of testing medical instrumentation. The first is a pre-operation check of equipment. Technicians go through the operating rooms daily, checking all the instrumentation that will be used the next day. The technicians also make spot checks to be sure that all things are operational, a procedure that has resulted in finding some hazards.

The institution also has an initial checkout program. Hospital authorities realized that some equipment, even though it was new, could possibly be defective. So, they initiated a program in which all incoming instrumentation was confiscated and reviewed *before* being put to use. When the program began, it was found that 40 per cent of the new instruments were defective, based on performance criteria and anticipated use on patients. Also, a substantial number of instruments were considered hazardous—although this figure did not approach the 40 per cent mark.

This program covered anesthesia machines and other mechanical instruments, as well as electrical instruments. And it primarily involved the external testing of these machines.

Besides these checkout programs, the hospital also has a preventive maintenance program, as well as a maintenance program which includes the repair of broken equipment. In the preventive maintenance program, instruments are called in periodically and checked for performance and safety.

The Emergency Care Research Institute (ECRI) is an organization that tests medical-electronic instruments. If the ECRI determines that equipment has a defect, it communicates with the manufacturer. The institute has found that most hazards relate to poor quality control in manufacturing, not to poor equipment design. The ECRI, which functions as a clearinghouse for hazards, gets in touch with the manufacturer and asks him what he proposes to do about eliminating the hazard. This organization tries to work *with* the manufacturer and explore the problem with him.

Then, this information is published so that readers can be alerted to the situation and will know what is being done to remedy it. The ECRI acts somewhat as a link between the consumer (hospital) and the manufacturer of instruments to circulate information on hazardous materials and investigate all aspects of the particular problem.

Instrumentation problems—There are all kinds of subtle problems relating to electrical medical instrumentation. The leakage current hazard, for example, accounts for only a small percentage of the over-all problem. In fact, the major portion of the leakage current problem could be eliminated through the use of good grounding systems.

In its surveys of hospitals, the ECRI has found that 98 to 99 per cent of the electrical problems could be taken care of by good grounding, checking equipment periodically and training personnel to be aware of the electrical hazards of defective equipment.

However, it was noted that in some hospitals a more serious condition was created when the hospital installed what they thought was an adequate grounding system. In actuality, this made the situation more hazardous. The intent of the code was to create a safe environment for the patient, so that staff personnel would not fibrillate the patient while in the operating room. The standard says that any conductive surfaces that are in reach of the patient—or someone touching the patient—must be grounded.

Isolated power centers do not guarantee the measure of safety that is required in Article 517 of the National Electrical Code, Mosenkis commented. Specifically, the article says that the potential differences of five millivolts should not exist under any condition of probable fault. (It should also be remembered that one definition of a "probable fault" is the loss of ground.) The isolated power centers, as marketed today, do not monitor the ground continuity and therefore do not note if the ground is being lost. Therefore, these systems do not provide the required measure of safety and are not cost-effective.

Before the proposed Article 517 was adopted, the use of isolated power systems was the only system that was spelled out in it. This resulted in the erroneous inference that they were mandatory. In fact, the code put the burden on the hospital to go to the local authorities for approval of another system, something few hospitals could do. Therefore, this reference to the isolated power was deleted from the final edition of the code. Instead, the continuous power supply system was retained as a permissive use.

The booklet, *Safe Use of Electricity in Hospitals*, that was published in 1971 by the National Fire Protection Association (NFPA) also mentioned the isolated power system. However, it stressed that this mention was not meant to be a recommended or standardized system. Also, the booklet is not a code by a guide that was published in conjunction with Article 517.

Finally, in electrical equipment the more probable fault is a broken ground, a condition that the isolated power system will not detect. Since this condition is more likely to occur than other hazards, it is more dangerous. This is especially true because a broken ground will not call attention to itself as a short circuit will.

Today, the most practical alternative to automatic instrument checking is to have periodic inspection of equipment and to create an awareness in personnel of potential electrical hazards. This awareness can be further encouraged if there is an immediate response when someone points out a needed correction. If a call that tells of an unsafe condition (such as a fraying cord) gets an immediate response, the importance of reporting such hazards will impress the staff member. Then, he or she will be more likely to notice such things in the future.

Finally, a good grounding system should be installed—by someone who knows what he is doing. And personnel should keep away from exposed metal and metal surfaces, covering such surfaces when possible.

Personnel training—The human factor is especially significant in equipment safety. People need to know how to operate equipment properly. One problem peculiar to hospitals is that because so many people use the equipment, they probably won't know the individual idiosyncrasies of each piece of equipment. Also, equipment must be designed to be used and operated by people who will not necessarily be interested in its mechanics. For example, machines must be operated by nurses who are mainly interested in helping sick or injured people—and may actually be afraid of operating machines.

Also, a physician may not have the technical training for some medical instrumentation. Because his background is primarily one in biology, physiology and anatomy, he may not have the basic background to under-

stand how some medical instruments function. And today there is so much instrumentation that it would be impossible for a doctor to have a working knowledge of most medical instruments. Today's medicine requires a team approach, and therefore, the equipment should meet the physician's expectation of performance.

In this area of safety, education of personnel can be a problem, particularly in places with a large turnover of personnel. There is also the problem of rotating personnel, or even the case of the doctor who may be involved in several different hospitals. In this instance, he can hardly be expected to know everything about the equipment. Therefore, manufacturers have to design instruments to be used by people with no technical training, who are in a rush or in an emergency situation, and who don't have time to stop and think how to operate a specific piece of equipment—or to consider its hazards.

Users of electrical medical equipment can contribute somewhat to the creating of standards. In many areas better design standards are needed. Therefore, interested parties should get involved in creating these standards. They shouldn't just wait for someone else to do it, hopefully coming up with the "right" thing. In the preliminary writings of the codes, room was left for suggestions on the codes' contents.

Hospital surveys—A hospital that is considering a survey should look for certain characteristics in the surveying organization. For example, the organization should be able to provide enough technical know-how to carry out continuing surveys on its own. Also, the hospital should consider the following: Will the organization train the hospital personnel? What is the organization's track record? Do they just tell you, the hospital, what is wrong, or do they include suggestions on what should be done to correct the situation? Also, are the suggestions expensive? Are they practical? What are the qualifications of the individual(s) performing the survey? What is their background and training? These individuals should be prepared to cope with the things experienced in a hospital.

A good electrical survey team looks for good, safe performance of the equipment. A lot of damage is done to patients by equipment that does not perform effectively, as well as that is downright dangerous. For example, beds, whether they are electrically operated or not, should be grounded properly if there are metal components. Also, there may be electrical hazards in older electric beds as the leakage current problem may appear and intensify as the bed ages. Or, the grounding pin may break, causing an ungrounded bed.

THE LIFE SAFETY CODE 101 AND ITS RELATIONSHIP TO THE ACCREDITATION OF HOSPITALS

Summary of a Panel Discussion

Moderated by George Pierce, director of safety, Little Company of Mary Hospital, Evergreen Park, IL. Panel members were Dr. John D. Porterfield, director of the Joint Commission on the Accreditation of Hospitals, Chicago, IL, and J. Armand Burgun of Rogers, Butler & Burgun Architects, New York, NY.

The panel discussion on Life Safety Code 101 touched on a number of topics, including items on specific fire safety standards.

The basic premise of the life safety code, at least in the institutional occupancy section, is that a hospital really cannot be evacuated. The "everybody out" theory is not applicable in this situation. Therefore, the first area of refuge for a patient is his own room—unless that room happens to be the room of fire origin. (In this latter instance, the patient must be removed, and the room closed off.)

Patients in a hospital are to be moved horizontally; they should seek refuge on the same floor. It is only in the extremest of circumstances that patients would be evacuated vertically. Even in high-rise office buildings, authorities are discovering that they should provide areas of refuge within the office building rather than evacuating it.

Part of this is done by the compartmentation of the building. The minimum compartmentation required for institutional occupancy is one-hour corridors that extend from slab to slab. The corridors must not have transfer grills, whether there are fusible links or not. All rooms, with certain exceptions, must open off of the corridor—even waiting rooms. There must be at least one smoke-stop partition on each floor.

A smoke-stop partition goes from wall-to-wall and floor to ceiling. It is not a pair of doors in a corridor. The only openings permitted in a smoke-stop partition are those for the corridor. If a duct penetrates the partition, there must be a detector and smoke damper in the duct.

In addition to compartmentation, the code requires a limitation of combustion, a fire-resistant construction and no combustibles.

Paint—The National Fire Protection Association (NFPA) manual indicates that paint in ordinary thickness on an interior finish will not have any significant effect on the flame spread rating. However, paint in unusual thickness can spread flames. Normal enamel or normal lead-and-oil paint would probably require an application of ten coats before there would be any appreciable difference in the flame spread rating. However, if a paint having some binders in it (especially those causing it to come out thicker and more mottled than ordinary paint) is used, there probably would be an appreciable flame spread rating difference in three coats because of the thicker base and additives.

Even with ten coats of lead-and-oil paint, the flame spread rating is well below the 25 mark required by the code for most walls. Also, when the rating is figured, the type of wall construction (such as wood or plaster) must also be considered.

Exit stairs—In the section of the code that discusses "other effective means of providing the interruption of exit stairs which continue beyond the floor of discharge," a physical barrier is intended. One reason cited for this regulation is that in some cases, such as when there are no lights or the area is smoky, a physical barrier is needed to keep persons from descending into a lower level.

Outside fire escapes are not considered exits for institutional occupancies. However, in some fires these fire escapes have been used.

The NFPA does not require a smoke-proof tower; an outside stair is approved for this purpose, but an outside fire escape is not.

Fire doors—In the code, section 10-224 indicates that self-closing fire doors in existing institutions must be activated by a local device that detects smoke or other products of combustion other than heat. There are many institutions that have fusible links controlling the fire doors. Also some state building codes allow fusible links. However, the intent of the code was not to allow these devices. The committee on the code does not feel that a smoke barrier held open by a fusible link is really a smoke barrier.

It should be noted that there are often differences between the local ordinances and the life safety code. In most cases, hospitals are required to comply with the local ordinance. However, the Joint Commission on the Accreditation of Hospitals expects the hospital to conform with the higher—or the one more rigid in its safety demands—of the codes.

Fire alarm systems—The use of audible fire alarms in drills was discussed. Problems cited included the danger of exciting both patients and staff. There is also the danger that if the alarms are not tested periodically, improper operation would not be discovered.

Carpeting—The main problem with carpeting is in obtaining an accurate flame spread rating that is, theoretically, no more than 75. However, there are problems involved in the testing of carpeting. The flame spread rating also involves how the carpet is put on the floor. For example, some carpeting may be laid over a foam mattress or other padding material. Thus, in these instances, the whole assembly would have to be tested in order to secure an accurate rating.

In general—The code is concerned with multiple fire deaths, (this is defined as the deaths of three or more people). So far, there has never been a multiple fire death loss in a hospital built in conformance with the NFPA code. However, many single fire deaths have occurred. Indications are that from 500 to 600 deaths a year are due to single fire deaths. Therefore, in the writing of the 1973 edition of the code, the NFPA is looking into single fire deaths.

The Veterans Administration has discovered that a significant reduction in single fire death losses has resulted when Nomex gowns, sheets and cubicle curtains are used.

According to the code, a fire-resistant building is not synomous with a fire-safe building. In a fire-resistant building, the structural elements are protected against collapse during a fire of a specified hourly duration.

The code also provides that every patient room must have a window that is capable of being operated without the use of tools.

There have been some one-story hospitals and nursing homes constructed out of non-fire-resistant, one-hour protective materials. However, only one-story buildings are permitted this in the standard. Also, the regulations permit certain auxiliary structures, such as chapels, to be built of other materials, such as heavy timber, if they are separated from the hospital by two-hour partitions.

In the case of a hospital doing a major rebuilding of its facilities, the accreditation commission requires that any major changes in the hospital's services, either quantitatively or qualitatively, shall be reported to the commission. Then, a decision will be made on whether a re-examination of the facility should be made.

Safety system—The life safety committee recognizes the merits of early warning detection and automatic extinguishing devices as essential parts of the life safety system. It has directed the sectional committee on institutional occupancy to study the methodology, alternatives and technical aspects of incorporating provisions for such devices into the 1973 edition of the life safety code.

The committee is considering including two alternatives. One would be compartmentation the way it's currently written, and another would be to keep the requirements for fire-resistant construction, but dropping the compartmentation requirements of the one-hour corridors and smoke-stop partitions in buildings that have more than 100 per cent early warning systems and a 100 per cent supervised automatic sprinkler system. These alternatives, though, are still in the planning phase.

Air-conditioned operating rooms—The state of Michigan believes that under the new OSHAct, it must require air-conditioned operating suites. Consequently, as of January 1st, any hospital that does not have an air-conditioned operating suite (as is the case in about 75 per cent of the state's hospitals) will receive a conditional license to operate.

However, the NFPA understands that this inclusion is purely an environmental factor. The air-conditioning unit is supposed to maintain a certain humidity to reduce the possibility of explosion.

Making recommendations for changes—The commission is working to establish a series of external standing advisory committees with experts in a particular area serving on the related committee. At present, there are only a handful of committees, but more are in the formative process. The list of committees will obviously include a standing advisory committee on each of the various aspects of the environmental services chapter, including safety and fire safety and at least a subcommittee on electrical safety.

The committees will be asked to review the codes dealing with their particular interest at least every two years. They also will inform the commission of problems as they turn up. Every proposal that comes in, whether from an individual or an organization, will be reviewed by the standards committee, and a recommendation will go to the board.

Accreditation surveys—The decision for hospital accreditation is based on information gathered by the survey team as well as data from the examinee. This latter data are examined prior to the visit of the survey team and evaluated. Then, deviations from the standards are flagged so that the surveyor can examine them further.

There are several ways to appeal a comment or report of the survey team when a member of that team is erroneous in his interpretation of the rules. The first way is to challenge the person when he makes such a comment, after reviewing the report when it comes back into the office. Secondly, at the end of the survey team's visit, the team will assemble with the appropriate hospital heads, going over, informally, what will be reported. At this point the hospital could challenge the surveyor on specific points. This challenge also is noted in the report for final review.

Thirdly, if the hospital's accreditation is affirmed, the hospital can include a comment or question any point that it feels is erroneous in the space provided on the critique letter. If there is an adverse decision on the accreditation, the hospital can then seek an audience with the central office personnel and thrash the problem out there. This session would occur before the adverse recommendation would go before the board's accreditation committee.

Finally, the hospital can make a final appeal that would go directly to the full board for a decision.

OSHA and hospitals—The state of New York is surveying every hospital in that state to see if they are conforming to the code for existing hospitals. If they are not, the state says that the hospitals will receive only provisional operating certificates until they comply with the code. Also, the state is sending the information on these hospitals to the local fire marshall and fire department.

The joint commission will require a self-survey on the hospital's "anniversary date" for that hospital to keep its two-year accreditation (the maximum interval), beginning with hospitals surveyed since July 1, 1971. The commission hasn't decided what the provision will be for those other hospitals surveyed, but it probably will include a requirement to notify the commission of the state of response to the recommendations made a year ago.