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GUEST EDITORIAL

On Not Being Part of the Problem

Neville A. Robinson,* M.B., B.S.

The problems presented by the clients of drug and alcohol detox and rehabilitation services will reflect patterns of use and abuse in the community as a whole. Alcohol is still by far the commonest substance of abuse by people of all ages, but there is a steady rise in the numbers of patients presenting themselves for treatment of abuse of benzodiazepines and oral narcotic analgesics such as codeine and oxycodone.

Some of these patients may already be in serious trouble with alcohol, others may be the victims of chronic pain syndromes, and still others may be chronically anxious and have become dependent on "therapeutic" dosages of tranquilizers. Yet others may be "chippers", often using an exotic variety of these drugs with dangerously addictive regularity to blur the edges of an existence that is unacceptable "straight".

Meperidine, anileridine, morphine and hydromorphone are less commonly involved in mixed drug abuse, but are of course seriously addictive. Surprisingly however, in view of their availability and widespread use, true physiological dependence on these more powerful prescription narcotics is seen relatively rarely in this area.

Some of these drugs are available on the street as a result of theft from pharmacies and warehouses, but all too often they are dispensed on legal prescription, albeit sometimes illegally obtained. The skill and ingenuity with which a practised drug abuser or dealer will approach a well-intentioned physician has to be experienced to be believed. Many of us working in groups are only too well aware of how new physicians, just starting to practise, are sought out by drug users in the hope of obtaining easy supplies of their favourite fix. Many of us working in the field of drug dependency are equally well aware that a determined drug user or dealer, set on maintaining his habit or lifestyle, may repeatedly convince a caring but unwary physician that he needs a legitimate and safe supply of his drug so that he may "withdraw" on the street. When it is remembered that a 4 mg Dilaudid® tablet sells for fifty dollars, and a 5 mg tablet of Valium® for two dollars on the street, it is not difficult to understand the motivation for such deceit.

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The prevention, recognition and management of drug and alcohol related illness is, in general, not well taught in our medical schools, and experience in our treatment centres suggests that it is often not well managed by the average community physician. We will be deceived sometimes, and we will all have some success in treating drug dependency in the office. Some of our chemically dependent patients show enormous courage and perseverance in grappling with their problems, and obviously need our support. But the first principle of therapeutics needs reiterating no less strongly in this field than in any other — *primum non nocere* — your well-intentioned prescription can so easily compound your patient's problem.

Be aware of double doctoring and the laws that control it. Be particularly aware of the new patient who knows what drug he needs, be niggardly in the amount you prescribe, and try to ensure your prescription cannot be altered. Take care of your prescription pads and control your samples of narcotics. Take the trouble to make inquiries about patients you suspect may have a problem. Call colleagues or local emergency rooms or detox staff for information. Be prepared to advise your colleagues, particularly those who deputize for you, if you are trying to manage an abusing patient from an office setting. Get to know the drug dependency treatment staff in your area — they can often be a fount of information.

Encourage your patients to consider withdrawing in a detox setting. The treatment staff have a wealth of experience, and they are often particularly effective in helping patients to cope with the physical and emotional pains of withdrawal in drug free ways. At the very least, try to get any patient that you are treating for a drug problem involved with a drug dependency counsellor. Your patient has a better chance of success if involved with more than one treatment resource. If you are in doubt, consult with a colleague or with drug dependency commission staff. It is worth

remembering that in this, as in other fields of practice, we are not necessarily experts and may need consultant advice.

Finally, of course, not being part of the problem means being very careful about personal drug and alcohol use. Never prescribe tranquilizers or narcotics for yourself without the knowledge and advice of a colleague. Those of us who use alcohol may care to try and assess how safe and sensible our drinking habits really are by completing the questionnaire at the end of this article. □

AM I A SENSIBLE DRINKER?

Please tick the letter that applies to you.

- | | |
|---|----------------|
| • Do I find it difficult to refuse alcohol? | Yes (B) No (A) |
| • Do I always offer alcohol when a friend calls? | Yes (B) No (A) |
| • Can I enjoy a day without alcohol? | Yes (A) No (B) |
| • Can I relax without alcohol? | Yes (A) No (B) |
| • Do I really know how much alcohol I drink each week? | Yes (A) No (B) |
| • Am I within sensible limits (see below)? | Yes (A) No (B) |
| • Do I drink alcohol before driving? | Yes (A) No (B) |
| • Is alcohol affecting my work? | Yes (B) No (A) |
| • Is alcohol spoiling my sport? | Yes (B) No (A) |
| • Do I know how many calories there are in the alcohol I drink? | Yes (A) No (B) |
| • Has my family ever made comments against my drinking? | Yes (B) No (A) |

Safe Drinking Levels:

Men—below 36 units a week* (1 unit = a half pint of ordinary beer, one glass of table wine, or one pub measure of spirits).
Women—below 22 units a week*

Add up your score by counting one point for each B answer.

Total Score:

0-3 Bs: You seem like a sensible drinker
4-9 Bs: Your drinking may be getting the better of you. Think about it: try a few changes and check yourself again in a couple of weeks.
10 or more Bs: You could be heading for a drink problem.

*These levels are higher than the levels of 21 and 14 currently recommended by the medical Royal Colleges.

ADDITIONAL INSTRUCTIONS FOR AUTHORS

During a recent meeting of the Editorial Board, there was discussion concerning some material submitted to the *Bulletin* for publication. It was recommended that the senior author should accept responsibility by attaching a signed covering letter to the manuscript:

- 1) warranting that this manuscript has not been published previously and that none of this material is currently under consideration for publication elsewhere;
- 2) stating that the sources of all quotations have been cited and that, for extended quotations, written consent has been obtained from the copyright owner(s); and
- 3) indicating the contribution made by each of the co-authors (for multi-author papers).

The Challenge of Alcohol and Drug Dependence for the Primary Care Physician*

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Patients with alcohol or drug dependence probably constitute 10% of the primary care physician's practice. In hospitals the proportion is higher. While the medical complications of chemical dependence are usually well managed, the primary illness is often missed. Guidelines are presented to aid the physician in making an early diagnosis, presenting the information to the patient, motivating the patient to accept treatment, and managing unstable sobriety.

In treating the primary disorder of chemical dependence, the primary care physician is challenged in three ways:

1. Control of treatment is shared with other professionals.
2. Prescribing habits are changed to include non-chemical symptom relievers.
3. Our view of the end point of treatment is changed to include the concept of recovery.

Guidelines are presented which will help the primary care physician meet these challenges.

Why should the primary care physician be concerned about the challenge of chemical dependence? After all, bad habits are not diseases. During Prohibition, when John Stewart was Dean of Dalhousie's medical school, alcohol and drug dependence were considered to be moral and legal rather than medical problems. In medical training at the University of Alberta in the 1950s, we had one hour in the curriculum on alcoholism and none on drug addiction.

The pressure from these common, pervasive, and potentially lethal problems of chemical dependency has begun to claim the attention of medicine. In 1956 the American Medical Association took the unusual step of declaring alcoholism a disease. The *Diagnostic and Statistical Manual of Mental Disorders (DSM-III)* devotes an entire section to the criteria for diagnosing Substance Use Disorders.¹ In assessing recent surveys

in the United States Kamerow and his colleagues concluded that 7.2% of the adult population meet criteria for an alcohol or drug use disorder.² The data suggested that 60% of these individuals sought help from non-psychiatric physicians.

A survey conducted in the Family Medicine Clinic of the University of Nevada and in a family practitioner's office, showed 11% of the patients in each setting scoring 10 or more on the Michigan Alcoholism Screening Test. Estimates of the prevalence of alcoholism in patients in general hospital settings range from 15 to 25%. Despite these high prevalence figures, a teaching hospital study showed that a majority of physicians did not take adequate histories of alcohol use, did not identify alcoholism as a medical problem even in the presence of known dependence, and did not involve themselves in treatment, treatment recommendations, or referrals for treatment of the alcoholism.³

The available evidence suggests strongly that medical education has not prepared physicians adequately for the diagnosis and treatment of the chemical dependencies. This paper outlines some of the issues which challenge the primary care physician.

ETIOLOGY

Chemical dependency is not caused by drugs alone. In addition to pharmacological factors, there are biological, psychological, and sociocultural factors involved in these disorders. The severity of physical reactions during major withdrawal and intoxication has distracted attention from the fact that psychological dependence is far more important than physical dependence. In the early stages of addiction all the evidence points to reactions in the brain, not the body. Drug actions at cellular and synaptic levels exercise subtle early effects on thinking and feeling.

DIAGNOSIS

Common characteristics of all chemical dependencies are described by Blaine and Julius as follows:⁴

1. **The drug is used to obtain a pleasurable effect.** Usually this is quick and dependable as with nicotine, alcohol, and abused prescription or street drugs.
2. **Use of the drug develops compulsive characteristics.** There is evidence of continued use in the face of adverse consequences as drug taking takes on a life of its own.

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3. **Loss of control occurs.** The person takes more of the drug than had been intended or they use it when they have decided against any use.
4. **The person relates to the drug as a friend.** Alcohol and other drugs are more reliable and predictable than people. When the drug is given up the process is painful and the loss is followed by grief.
5. **Biological changes occur.** Alterations in biogenic amines in the brain are accompanied by altered mood, thinking, and behavior. A biologic memory is established which may be a factor in relapse.
6. **Antisocial behavior appears.** Inhibitions and judgment decrease while impulses increase. Deception and manipulation may occur in efforts to conceal the extent of usage while ensuring continued supplies.

Early diagnosis is made difficult by the combination of denial and the social stigma of chemical dependence. William Osler called syphilis the great imitator in the 19th century. Chemical dependency is the current great imitator. This means that in the early stages of the illness both the patient and the physician will always think of some other disorder first. Therefore, if there is a diagnostic dilemma presented by a patient or a medical problem that is not responding to treatment, it is wise to add chemical dependency to the differential.

Every system in the body can be affected by chemical dependence. Having a good textbook for reference in the office will assist diagnostic thinking.⁵ Trauma, skin problems, and upper gastrointestinal problems with a palpable liver lead a long list of conditions commonly associated with chemical dependence. Social problems with family, friends, or the law are often associated with chemical dependence and should be inquired about.

Simple screens can be added to every history. The CAGE, developed by John Ewing, consists of four questions:⁶

1. Have you ever tried to *cut down* on your use of alcohol (or other drugs)?
2. Do you get *annoyed* when someone asks you about your use of alcohol (or other drugs)?
3. Do you feel *guilty* about your use of alcohol (or other drugs)?
4. Do you ever take an *eye-opener* in the morning?

Positive responses to two or more of these questions are enough to initiate a more extensive diagnostic investigation. Even simpler is the FOY:

1. Is anyone in your *family* concerned about your use of alcohol (or other drugs)?
2. Is any *other person* concerned about your use of alcohol (or other drugs)?
3. Are *you* concerned about your use of alcohol (or other drugs)?

A positive answer to any question is enough to trigger investigation. These screens are sensitive but not specific. They are not sufficient to make the diagnosis without more evidence.

Routine lab tests can also serve as a useful screen. An elevated mean corpuscular volume (MCV) is a common response to high alcohol intake, as are elevated liver enzymes. The SGGT is the most sensitive to alcohol and should be included in all hospital blood chemistry panels. Do not hesitate to ask for specific tests. Urine drug screens can be very useful in diagnostic assessment. Blood levels of specific drugs provide quantitative data, but are more expensive. Breath testing is both inexpensive and convenient. It should be routinely done in emergency room and ambulatory settings.

Diagnostic criteria for chemical dependency are satisfied if a pattern of use exists and if three or more problems are associated with that usage. In the new DSM-III-R the diagnostic term "abuse" is replaced with "dependence".

APPROACH TO THE PATIENT

Whenever an early diagnosis is made, the patient will be unaware of the problem. He will resist recognition of the problem and any recommendations for change in behavior. The common expectation is that the physician will fix any problems so the patient can continue using his or her drug of choice. Such faith in the physician's power is touching, but it represents a belief in magic.

Guidelines for approaching the patient are as follows:

1. **Collect the data from a variety of sources and establish rapport with the patient.** Remember you are delivering bad news and this is best done in the context of a caring relationship.
2. **Provide privacy and time to review the basis for the diagnosis.** Avoid telephones, hallways, or waiting rooms, even if the patient requests the information there. Make an appointment and give the patient time to process the information. Include significant others, if necessary.
3. **Do not open with a conclusion.** Review the data and obtain patient agreement on what is known. The strength of available evidence is the best way to break through denial. Build a case which supports the diagnosis.
4. **The immediate goal is to separate the patient from the drug.** This may be for either diagnostic or therapeutic purposes. If the patient disagrees, then referral to a treatment program is indicated. The physician's willingness to do this will often motivate the patient to work with the physician.

The physician's attitude and tone of voice are important. The patient is often hurt, bewildered, resistant and experiencing multiple negative emotions. In this circumstance the following are useful:

1. An *anxious tone of voice* has been found more effective in communicating concern that either a matter of fact or an irritated tone.
2. A *non judgmental* attitude helps the patient who expects to be judged, condemned and rejected, not only by the physician, but by others.
3. *Optimism* that chemical dependence can be treated and that the patient can recover to a better state of health helps counter feelings of hopelessness. Relapses do not mean failure and should be seen as indicators for increasing the intensity of treatment.
4. *Curiosity and empathy* are useful in dealing with self-destructive, demanding, manipulative, and angry behavior by the patient. Inquiring about the benefit of these behaviors and how they help the patient may stimulate interest in his or her condition and how it can be changed.

If the physician's approach to the patient fails, then an intervention should be considered. Alcohol and drug abuse treatment programs have staff who are experienced in doing interventions. They welcome requests for help or referrals from physicians.

An intervention is an organized meeting with the chemically dependent individual. It includes family members, friends, colleagues, and occasionally employer, minister, and/or physician. The group doing the intervention meets beforehand to eliminate blaming and emotional retaliation. Treatment resources are identified beforehand, so immediate admission is possible. Excuses involving children, bills, covering the practice, etc. are anticipated. The goal of every intervention is to get the identified patient into treatment. Effectiveness is enhanced by the presence of a treating physician. Even when the patient does not enter treatment (10 to 25%), the family is helped and subsequent problems are dealt with more effectively.

TREATMENT

The first step in treatment is detoxification. In the early stages of chemical dependence detoxification is a medically simple process. Details can be found in any good text.⁵ In addition to medical management, the physician has a key role to play in motivating the patient to continue in abstinent treatment as the best way to achieve long term sobriety and recovery. The three months following detoxification are a time of great vulnerability or unstable sobriety. The physician can motivate the patient before, during and

after detoxification in the following ways:

1. *Use and teach problem solving* skills to connect problems the patient is experiencing with their primary disease of chemical dependence. The solution to most problems is to get into treatment for the chemical dependence.
2. *Education* which focuses repetitively on the facts about chemical dependence, its treatability, and the possibility of long term recovery. Retention is impaired during detoxification, so use repetition and the KISS principle (Keep it simple). The AA (Alcoholics Anonymous) aphorisms are useful: Stop drinking. Attend meetings. Stay in treatment. Get a sponsor. Do the step work. Take it easy. One day at a time. Don't get HALT (hungry, angry, lonely, or tired).
3. *Provide an experience of care* where the patient is not rejected, blamed, or condemned, but where continued chemical use is not allowed or supported. Use the chronic disease model and encourage the patient to learn how to manage his or her own recovery using all the help available.
4. *Apply caring pressure to assure compliance* with treatment. The vehicle for this pressure is the loss of health, family, friends, job, or even freedom, already or soon to be experienced by the patient. Pressure can be lifesaving and is quite safe if there is no irritation, anger, or punitive intent. If in doubt, check with an experienced colleague.
5. *Use recovering role models* who have been through what the patient is experiencing themselves. Recovering counselors working in a treatment program are very effective in this role. Do not hesitate to ask recovering patients in your own practice, or call AA or NA (Narcotics Anonymous) for volunteers to make a 12 step visit. These visits are useful not only to the patient but also to those making the visit.

Remember that detoxification creates several voids in the patient's life. *The physiological or chemical void* is the easiest to manage through decreasing substitution therapy or symptom relief with long acting oral medications. Detoxification should be completed as soon as possible. *The psychological void* is the most difficult to manage. Reaction to the loss of an old chemical friend may include grief, loneliness, depression, hopelessness, irritability, and/or anger. The patient may become preoccupied with thoughts of alcohol or drugs. Activities and people need to be used judiciously to replace what has been lost. *The social void*, resulting from the loss of an enabling support system which facilitated chemical dependence, is replaced by the ward staff and recovering patients. The problems here, unless the patient is lured into leaving against medical advice by family or friends,

occur following detoxification. Family therapy and 12 step program involvement help the patient learn to develop an abstinent support system to replace the old enabling one.

Physician support is very important during detoxification. Frequent contact is useful. Follow the principle that people are the best replacement for chemicals. Hospital and office staff may need training in providing abstinent support and in recognizing enabling behavior.

MANAGING UNSTABLE SOBRIETY

The weeks and months following detoxification are a period of great vulnerability for the patient, with a high probability of relapse. This period of unstable sobriety is characterized by physiological and psychological discomfort as a new abstinent homeostasis is established. The patient may feel worse than before detoxification. Sleep disturbances, irritability, depression, and difficulty in interpersonal relationships may persist tenaciously.

This often lengthy secondary abstinence syndrome may lead the patient to think, "I'm really different from other people. I can't function without the help of a chemical. Let me go back to my old friend." The recovering community is aware of this problem and has colorful terms for it, such as "white knuckle sobriety", "dry drunk", or "thinking with a wet brain".

Management of unstable sobriety involves two basic principles of treatment. The first is to use a multimodality approach. If outpatient treatment does not work, then move to residential or inpatient. If more support is needed to prevent relapse or help the patient progress in recovery, increase the frequency of visits, add group and family therapy, increase the frequency of 12 step meetings, consider disulfiram (Antabuse®) for alcohol dependence or naltrexone (Trexan®) for opiate dependence, etc. Any measure which helps stabilize the patient in recovery, with the possible exception of dependence producing medication, may be considered.

The second principle of treatment is that it must be community based. Sobriety is never securely stabilized in an artificial setting such as a hospital or therapeutic community. Stable recovery has to be achieved in the real world with real relationships. Physician support throughout this period may be critical and should never end with discharge from an inpatient setting.

Unstable sobriety may last from 6 to 24 months. During this time the physician should monitor the following:

1. *Drug seeking behavior* is characterized by requests for prescriptions and getting into situations where alcohol or drugs are easily available.
2. *Defensive behavior* includes denial of problems,

criticism or blaming of others, and manipulation. As defensiveness decreases, the patient finds it easier to admit the facts of his or her chemical dependence and to work the first three steps of the 12 step programs.

3. *Discomfort decreases* both physiologically and psychologically. The patient begins to believe "I can manage life without chemicals." Complaints diminish while attention and concentration improve.
4. *Responsible behavior increases*, appointments are kept, bills are paid, and attendance at group therapy and 12 step meetings occurs without complaint. The patient begins to believe it will be possible to control his or her life with help.
5. *Communication improves* and the patient is able to discuss both addiction and personal problems with others.
6. *Acceptance of AA and NA meetings* develops and those meetings which help the most are chosen for regular attendance. This behavior exemplifies the response to the question, "How long do I have to go to AA meetings?", which is, "Until you want to." This acceptance is accompanied by several other important behaviors:
 - (a) ability to recognize and avoid "slippery places" where slips are more likely to occur.
 - (b) ability to develop and maintain an abstinent support system.
 - (c) getting a sponsor and systematically working the 12 steps.
 - (d) describing and showing signs of a "spiritual awakening" where he experiences something other than himself or herself and external reality. This subjective experience of a "higher power" or spiritual "presence" in the person's life is a source of support, hope, and patience in enduring discomfort without the use of chemicals.

STABLE SOBRIETY

The long term goal of treatment for chemical dependence is the attainment of stable sobriety or recovery. This status is characterized by:

1. *An untroubled memory of chemical use.* As in successfully working through grief, the lost object becomes a comfortable part of one's life. When this has occurred it is possible to see, hear, smell, discuss, or dream about chemical use without triggering craving and drug seeking behavior.
2. *An ability to deal with life's vicissitudes without chemical support.* This means being able to work to deadlines without a cigarette, drink, pill, snort, or shot. When faced with embarrassment, failure, or success the person in stable sobriety can, as Kipling put it, "deal with

triumph and disaster, and treat those two imposters just the same." Interpersonal relationships are developed and maintained without the need for chemical support to enjoy intimacy or to endure anger, disgust or rejection.

Recovering people refer to stable sobriety as serene or peaceful sobriety. The physician should understand that these adjectives refer to the former patient's relationship to chemicals. They do not describe one's involvement with life.

Stable sobriety differs from most end points of medical care. When symptoms are relieved and the patients restored to their previous level of health, treatment ends. With chemical dependence this is not an adequate end point since it leaves the patient in unstable sobriety. Achieving stable sobriety means developing nonchemical stress management and coping skills which many normal people do not have. For many physicians this is an unusual goal. The evidence is that about 50% of us self prescribe drugs for symptom relief.⁷ Usually this is done with no negative sequelae, although it is very risky behavior, but it is something our chemically dependent patients cannot do if they are to attain stable sobriety.

CHALLENGES TO PRIMARY CARE

Chemical dependency poses a number of challenges for the primary care physician. These challenges require some changes from the thinking and skills used in the care of most medical illnesses:

1. We must look beyond the obvious medical complications and *treat the often hidden primary disorder of chemical dependency*. Otherwise we enable patients to continue their dependence on alcohol or other drugs.
2. We must *share control of the treatment of chemical dependence* with other professionals, often outside the medical health care system. Few cases respond to individual medical care alone. The skills required to help chemically dependent patients work slowly through to stable sobriety and the mastery of an abstinent lifestyle, are not medical, although some physicians have acquired them.
3. *Prescribing habits must be changed*. Use of the symptom relievers has led Gitlow and Peyser to state that "the prescription pad is one of the great hazards to sobriety."⁸ With chemical dependency a new sequence of thinking is needed. First, prescribe nonchemical symptom relievers such as exercise, stress management, self help books, nutrition, one or more of the psychotherapies, 12 step meetings, etc. Do not prescribe medication unless the patient's problems are so severe that they are interfering with the treatment of their chemical dependence. Usually this need is not clear until one

to three weeks after detoxification.

4. We must *change our view of the end point of treatment*. Ending alcohol or drug use is not enough. The real healing, which constitutes recovery from chemical dependence, includes the difficult, time consuming task of achieving stable sobriety and a new, healthy, abstinent lifestyle.

PRACTICAL GUIDELINES FOR PRIMARY CARE

John Stewart was a practical man whose own lifestyle could certainly be said to embody the principles of stable sobriety. The following guidelines have proven useful in managing patients with alcohol or other drug dependence:

1. **Think chemical dependency.** Destigmatize the addictive disorders in your own mind and become comfortable with the clues which lead to early diagnosis. The treatment of any medical or other complication of chemical dependence is not complete until we have also dealt with the underlying primary disorder. Careful prescribing also includes the recognition that the use of any scheduled drug, including alcohol, for symptom relief can be a trigger for relapse.
2. **Become familiar with the treatment resources in our own community.** Get to know the staff of each program and the approaches they use. Become a medical consultant to chemical dependency treatment programs if you are interested. Attend AA, NA, and Alanon meetings. The purpose of these activities is to make referrals of your chemically dependent patients more effective. Patient resistance makes these referrals difficult. The most effective measure is to take the patient directly to the program or have someone you know do this. If neither is possible, then make contact with the program in the patient's presence, arrange an immediate appointment, and have them talk to the person they will see. Your ability to educate the patient about what they will be experiencing and its importance to their health can be invaluable. Learn the language of recovery and view staff members of treatment programs as important members of the health care team.
3. **Offer patients the dignity of the disease concept without relieving them of responsibility for their behavior or for obtaining treatment.** Remind them that they have an unusual vulnerability and that one drink, pill, shot, or snort can lead to a relapse. This information is needed to counteract the vivid biologic memory in each patient's mind of the chemical relief which is so easily available. It is the patient's responsibility to remain sober, not

ours or anyone else's. Above all, educate the patient and his or her family that chemical dependency is treatable. Offer hope and optimism for eventual recovery.

4. **Provide nonchemical substitutes for alcohol and other drugs.** Prescribe aerobic exercise for 30 to 60 minutes 3 to 5 times a week. Emphasize the importance of an abstinent social support system, which is always present in the 12 step programs, but can also include family, friends, colleagues, and church. Religious and spiritual activity may provide an experience of forgiveness and relief from guilt. Become familiar with stress management techniques which can be used to relieve or avoid symptoms which usually require chemical relief. Prescribe disulfiram (Antabuse®) or naltrexone (Trexan®) to assist sobriety. These valuable drugs provide time for treatment to be effective and for unstable sobriety to heal. Gitlow and Peyser⁸ have an excellent appendix on disulfiram for any physician who is uncomfortable or unfamiliar with prescribing that useful aid to sobriety.
5. **Help repair the medical and social damage associated with chemical dependence.** Restore function as much as possible while avoiding dependence producing prescription drugs. Teach self care, as in other chronic diseases, and educate the patient in developing physical, mental, and spiritual fitness. Work at becoming a role model in these areas. Monitor the patient's progress using the criteria described in the section of this paper on unstable sobriety.
6. **Help the patient maintain sobriety through:**
 - (a) **Restoration of self esteem.** Show respect, describe real strengths which exist in the patient, provide feedback on progress, and reinforce successful living patterns.
 - (b) **Development of an abstinent social support system.** Be available for family and friends

for education about chemical dependency, enabling, and codependency. Train your office staff to support abstinence by noting patient behavior, observing the taking of disulfiram (Antabuse) or naltrexone (Trexan), and by taking breath or urine samples for early diagnosis of relapse.

CONCLUSION

The challenge in John Stewart's day was to control infection and to develop safe techniques for entering the human body. Today, in addition to mastering these techniques, we are challenged to manage chronic diseases, including alcohol and drug dependence. This challenge is a complex one. It is well worth the time and effort of the primary care physician. Meeting the challenge will contribute not only to the health of our patients, but also to the health of our communities. □

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Alcohol Withdrawal Syndromes and Their Management

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Alcohol withdrawal syndromes are commonly encountered in a wide variety of clinical and nonclinical settings. The specific syndromes and their presentations are described. General management issues including relevant biochemical abnormalities and pharmacologic options are reviewed.

The notorious unreliability of drinking histories of those abusing alcohol is well known to clinicians. Patients may be too acutely ill on presentation to hospital to give an accurate history; others deny or seriously underestimate their intake. The symptoms and signs of alcohol withdrawal need not occur only with acute abstinence, but also are seen when alcohol consumption is suddenly decreased but not discontinued, in the presence of intercurrent medical illness (usually infections), and with stable alcohol consumption. A history of delirium tremens is important to ascertain, but in the absence of this, previous withdrawal symptoms, such as morning shakiness and nausea relieved by alcohol, suggest physical dependence and thus risk of withdrawal reactions.

SYNDROMES

A number of specific alcohol withdrawal syndromes have been described:

1. The Common Abstinence Syndrome: A mild hyperadrenergic state characterized by anxiety, tremor of outstretched hands and protruded tongue, diaphoresis, tachycardia, systolic hypertension, nausea, vomiting, diarrhea and sleep disturbance.¹ This syndrome may develop within hours of the last drink (often after a night's sleep), usually peaks at 1-22 days and disappears in 3-4 days. It may progress to classical delirium tremens, but the risk of this progression is not known.

2. Alcohol Withdrawal Delirium/Delirium Tremens: This is a severe illness which is potentially fatal; it is not the syndrome usually referred to by the public as 'the D.T.s'. As well as the hyperadrenergic state seen in milder form in common alcohol abstinence syndrome, in alcohol withdrawal delirium there is a "delirium" present with confusion, disorientation, and vivid hallucinations and illusions. The prototypic case is relatively easy to diagnose. However, only about

fifty percent of cases of alcohol withdrawal delirium present the typical picture, often because there is a concomitant medical illness (which either precipitates the withdrawal syndrome or is secondary itself to alcoholism) or a variety of medications have been given for other illnesses. The death rate has declined from 15-20% nearly 20 years ago to about 1% primarily because of better supportive measures available in intensive care units.²

3. Alcoholic Hallucinosiis: This condition is what most lay people mean by 'the D.T.s' and is characterized by vivid, persistent, usually auditory, hallucinations occurring in clear consciousness. Characteristically the hallucinations are in the form of voices stating malicious or threatening things to the patient. The hallucinations usually begin within the first 48 hours of abstinence and thus they may become a part of an alcohol withdrawal delirium, obscuring their diagnosis until the patient has recovered from the delirium. Alcoholic hallucinosiis is usually transitory — a few hours or days — but in about 10% of patients it may last for weeks or months, becoming chronic in rare cases.³ The hallucinations may be viewed as threatening, in which case the patient may act in response, e.g., by becoming agitated or attempting to flee.

4. Alcohol Withdrawal Seizures "Rum Fits": These are brief, self-limited generalized (grand mal) seizures which do not represent a true convulsive disorder and occur usually within seven to forty-eight hours after drinking has stopped, with peak incidence at twenty-four hours. Fifty percent are single grand mal seizures and the vast majority of multiple seizures occur in a single short burst.² The timing of the seizure in relation to the cessation of drinking is crucial to ascertain. Although, usually self-limited and benign, "rum fits" are important for two reasons:

- in some studies, up to 40% of patients with rum fits have progressed to classical delirium tremens.¹
- because the alcoholic may have various CNS problems either associated with infection, trauma after multiple falls, subdural bleeding, neoplasia, fluid and electrolyte imbalances, or previous seizure disorder with noncompliance in taking medications, the occurrence of seizures signals the need for an appropriate medical, including neurologic, workup. If seizures occur after the onset of D.T.s, they are probably due to an organic cause other than alcohol withdrawal. Persistently focal seizures in an alcoholic are due to a subdural hematoma until proven otherwise.

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MANAGEMENT

1. General Considerations

Many alcoholics, at some time, have been able to withdraw successfully from alcohol without medical assistance. However, some patients, because of the severity of their dependence on alcohol, the severity of their withdrawal syndrome and other factors such as intercurrent illness, require general medical and pharmacologic management.

Contrary to the popular myth that most alcoholics are dehydrated because alcohol is a diuretic, most are actually overhydrated. After the chronic ingestion of alcohol and the development of liver dysfunction there is retention of water and electrolytes resulting in isosmotic overhydration of the body. Some C.N.S. symptoms in alcoholic patients may, in part, be due to cerebral edema, thus intravenous fluid administration will only exacerbate the situation. The current recommendation is to give fluid and electrolyte replacement in accordance with what is estimated to be the daily requirement taking into account the increased losses that occur with agitation, fever, and perspiration.

Total body potassium is reduced in most alcoholics. One study noted that in 26 patients in whom classical delirium tremens developed, a continuing decrease in serum potassium from a normal level on admission led to hypokalemia (mean = 2.9 mmol/L) when delirium tremens started. At the end of the attack serum potassium rapidly returned to normal.⁴ The investigators speculated that the rapid decrease and rapid return to normal of serum potassium associated with delirium tremens may be the result of redistribution of potassium within the body, as the urinary excretion of potassium was the most likely explanation of this effect. Replacement of potassium is important but potassium replacement will not reverse alcohol withdrawal delirium.

Decreases in magnesium, another intracellular cation, may be responsible for increased irritability and seizures. Magnesium is not retained during chronic ethanol ingestion and is apparently depleted from the body by enhanced renal excretion. It is thought that lowered serum magnesium levels contribute to a lowered seizure threshold in alcoholics. Although there is no conclusive evidence that low magnesium levels play a role in the etiology of delirium tremens or that magnesium alters the course of the syndrome, the administration of intramuscular magnesium sulfate is recommended if deficiency is detected. The usual dose is 2 ml of 50% magnesium sulfate solution I.M.

A recently recognized metabolic problem in the alcoholic in withdrawal is hypophosphatemia. This situation seems to be secondary to poor diet, nausea and vomiting and the phosphate-wasting effects of alcohol itself. Symptoms associated with serum phosphate levels below 1 mg percent are bone pain,

stiffness, weakness, loss of appetite, and intention tremor. Acute respiratory failure, cardiomyopathy, and acute hemolysis have all been associated with low phosphate levels. The best method of supplementing phosphate is through the normal hospital diet. While the patient is being maintained on intravenous fluids, the monitoring and supplementation of this cation, if it is low, is indicated.⁵

Hypoglycemia is an ever-present danger in the alcoholic. Any unexplained decrease in consciousness in an alcoholic should be treated with a bolus of 50 ml of 50 percent glucose in water as long as thiamine has already been replenished and a baseline glucose has been drawn.

Most chronic alcoholic patients have vitamin deficiencies. Glucose infusions result in an increased consumption of vitamin cofactors, which may precipitate a severe acute avitaminosis in those already depleted. The judicious administration of thiamine and other B-complex vitamins should therefore precede infusions of glucose. (See Table I)

TABLE I
INITIAL LABORATORY EVALUATION OF
THE ALCOHOLIC PATIENT

Blood Alcohol
Serum electrolytes
Serum glucose
Serum Mg ⁺⁺ , Ca ⁺⁺ , & PO ₄ ⁻
Complete blood ² count (with differential and MCV)
Liver function tests (including SGOT, SGPT, bilirubin, γ GT, ammonia)
Serum albumin and total protein
Blood clotting studies (PT, PTT)
Serum BUN and creatinine
Serum cholesterol and HDL

2. Pharmacologic Considerations

Although the common abstinence syndrome and alcoholic hallucinosis have been successfully managed in nonmedical community-based detoxification centers without 'cross tolerant' (i.e., benzodiazepine) medication, nevertheless such is often helpful for the management of alcohol withdrawal syndromes. Sedating or calming the patient may be life saving in the treatment of alcoholic hallucinosis and 'rum fits' and in certain circumstances will be appropriate and necessary in the management of classical delirium tremens. Calming the patient should not imply the induction of unresponsiveness, rather, he should be "tranquilosedated" or showing signs of only minimal agitation and alternating between lethargy and light sleep. When oversedation is a problem, other factors including infection (especially pneumonia with hypoxemia) or hepatic encephalopathy may be contributing. At times, the patient's status is so critical that the therapeutic pathway is a tightrope between excessive agitation and somnolence, especially when there is acute hepatic decompensation.¹ At this point the patient is usually managed in an intensive care

setting. The monitoring of electrolytes, blood gases, EEG as well as careful titration of medication may be necessary to provide optimal care for complicated cases of alcohol withdrawal delirium.

Basic to treatment of the withdrawal state is the principle of cross-tolerance; the agent used should be cross-tolerant with alcohol to ameliorate withdrawal symptoms. Experience with the benzodiazepines suggest that they provide safe and effective therapy. The ideal agent for treatment of the acute alcohol withdrawal syndrome should have both anticonvulsant and sedative/anxiolytic effects of rapid onset and moderate duration. Additionally, it should not depress cardiac or respiratory function. All benzodiazepines to a greater or lesser extent fulfill these criteria. Traditionally, chlordiazepoxide (Librium®) has been used but for many reasons it may not be ideal: it is extensively metabolized in the liver which in many alcoholics is failing, it cannot be reliably given intramuscularly and there are reports that it may provoke aggression and hostility in susceptible patients. The biotransformation of chlordiazepoxide and diazepam (Valium®) and their active metabolite desmethyldiazepam may be impaired in patients with compromised liver function to such an extent that the drug's half-life may be increased six times.⁶ Newer benzodiazepines which do not have active metabolites such as lorazepam (Ativan®) and oxazepam (Serax®), have a simpler and more predictable metabolic pathway as they undergo only conjugation with glucuronic acid, a process that is not affected by cirrhosis, with insignificant accumulation in plasma during multiple-dose therapy. Recent reports suggest that they are as equally efficacious as chlordiazepoxide and as diazepam in reducing the symptoms of acute alcohol withdrawal.⁷ (See Figure 1)

Long-acting extensively metabolized benzodiazepines continue to be used in alcohol withdrawal therapy. The long half-life of these drugs ensures self-tapering, albeit at the risk of oversedation of the patient. Short half-life benzodiazepines minimize this risk but require ongoing clinical assessment and frequent dosing intervals.

A number of drug interactions have been documented between those benzodiazepines which undergo extensive hepatic metabolism for example diazepam, chlordiazepoxide and medication commonly prescribed to alcoholic patients. Disulfiram (Antabuse®) and ethanol appear to inhibit the metabolism of diazepam through inhibition of diazepam N-desmethylation.¹⁰ The metabolic disposition of oxazepam and lorazepam which are principally biotransformed by glucuronidation are not inhibited. Cimetidine (Tagamet®) inhibits microsomal metabolism, affecting the cytochrome P-450 system in particular, and can impair the metabolism of many drugs including disulfiram, isoniazid, propranolol, and diazepam. It has been shown that treatment with cimetidine can affect the breakdown of diazepam,

slowing its elimination, thus causing higher plasma levels and increased side effects.¹¹ Cimetidine does not alter the elimination of either lorazepam or oxazepam as their pathway of biotransformation is not affected.¹²

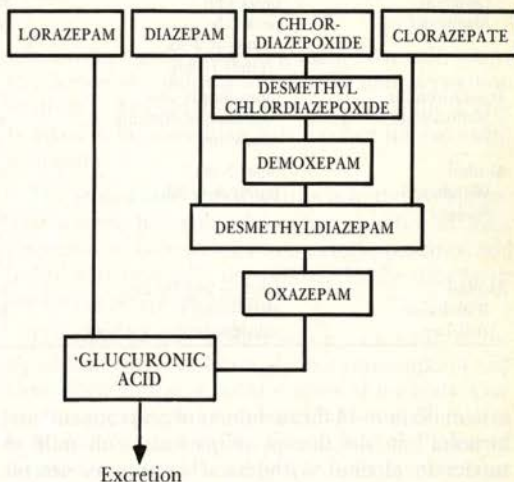


Fig. 1. Schematic view of the main metabolic pathways of various benzodiazepines. Ref. 8

Drug dosage must be individualized. It is difficult to predict sedative requirements exactly on the basis of the degree of tolerance to alcohol and other drugs. It is safer to start with a modest dose, e.g., lorazepam 2 mg q.8h orally, measure the patient's response, and dose further accordingly. Lorazepam has the advantage of multiple routes of administration: orally, sublingually, intramuscularly or intravenously. It is usually preferable to wait until early symptoms arise rather than to treat prophylactically but once symptoms appear, treatment should not be delayed as there appears to be an acceleration phenomenon in which drugs are progressively less effective in controlling withdrawal symptoms.¹ In the treatment of severe alcohol withdrawal delirium, extreme caution is necessary in using any neuroleptic or tranquillo-sedative. Haloperidol (Haldol®) in carefully titrated doses is less likely to lower the seizure threshold than chlormpromazine (Largactil®); one might begin with a dose of 2-4 mg I.M. q.2h-q.6h prn. An alternating dosage regime of benzodiazepine and haloperidol may be useful in these patients. Paraldehyde and chloral hydrate are rarely, if ever, indicated nowadays in the management of these syndromes. (See Table II)

Although the benzodiazepines remain a cornerstone in the pharmacologic management of alcohol withdrawal, newer agents which may have a greater specificity warrant investigation. Recently, the use of beta-blockers has been advocated, based on the observation that alcohol withdrawal syndromes are probably mediated in part by the autonomic nervous

TABLE II
ALCOHOL WITHDRAWAL SYNDROMES, THEIR TIME COURSE AND MANAGEMENT

Syndrome	Time Course	Treatment	Progression to Alcohol Withdrawal Delirium
Common Abstinence	onset 4-8h peak 24h duration 3-4d (rarely 7-10d)	reassurance ± benzodiazepine	not known
Acute Alcoholic Hallucinosi	onset—shortly after cessation of drinking transitory	reassurance in supportive environment. may require sedation depending on patient's reaction to hallucinations	unlikely
Alcohol Withdrawal Seizures	onset-7-48h (rarely after 96h)	may not require therapy for acute seizure — iv lorazepam or diazepam if (Mg ⁺⁺) administration of Mg So ₄ is often effective prophylaxis	up to 40%
Alcohol Withdrawal Delirium	onset — 2nd-3rd day peak — day 4 subsides during first week	benzodiazepines ± haloperidol	

system. Reports of the usefulness of propranolol¹³ and atenolol¹⁴ in the therapy of patients with mild to moderate alcohol withdrawal symptoms deserve clinical attention.

The morbidity and mortality of alcohol withdrawal syndromes can be reduced by appropriate individualized medical treatment. This involves specific pharmacotherapies as part of the total medical management of the patient. □

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Early Intervention in Alcoholism

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Dartmouth, N.S.

It has been estimated that between 5 and 8 percent of the total population in Canada is in serious trouble with alcohol, and yet alcoholism is said to be one of the least diagnosed conditions seen in family practice. The family doctor probably has a more prominent role to play in the treatment of this disease and this paper would like to suggest that early intervention, by direct patient confrontation, can be a much appreciated and successful action, particularly when done by the one person who knows the family and the disease — that is, the family doctor.

In many cases, alcoholism is diagnosed at a late stage because the family doctor may only have a suspicion that the patient is in trouble and, by denial and secrecy on the part of the patient, it progresses to a stage where intervention is late and difficult. We talk about the reluctance of patients to come with such items as lumps, persistent coughs and other early symptoms of disease, but we often get a second-hand clinical presentation of a patient in trouble with alcohol at an early, and therefore much more treatable stage, from the spouse or some other family member.

Dr. Siexas, of the United States Alcoholism Foundation, used to say that, "Treating an alcoholic is like making rabbit stew. First of all you have to catch the rabbit". The pessimism that surrounds the treatment of alcoholism is due to the unattractive features of the whole disease syndrome, particularly as seen by the family doctor.

First, there is no other disease in which the patient so persistently and consistently uses the technique of denial; *secondly*, alcoholics and their problems tend to take up a disproportionately large amount of time in a busy practice; and *thirdly*, alcoholics are frequently seen in unattractive conditions such as emergency rooms and family fights, in which quite often the worst side of the patient and the disease is displayed. As a result, family physicians eventually see a person in trouble with alcohol, who has lost his or her family, has gone through a series of job problems, and often job loss, and who then presents with little in the way of disease pathology, considering the abuse that the body has taken.

Alcoholism affects the person in three main areas of function, and these may be outlined as follows:

The *first* area of dysfunction is the breakdown in interpersonal relationships. Here we see a family with serious spouse problems (frequently denied), and poor

relationships with children, leading eventually either to a serious breakdown in a family unit, separation or divorce. Frequently by the time the family doctor is asked to do something it is too late for successful treatment.

The *second* area of dysfunction is in the workplace. The patient has gone through a number of jobs, frequently with declining income and importance, and indeed may be totally unemployed by the time he or she finally accepts treatment.

The *third* area of dysfunction is as a result of the significant effects of heavy alcohol consumption and alcoholism on the physical systems of the body. One may get the impression that alcoholism is dominated by Korsakoff's and serious liver disease but many of the most seriously affected people in those other areas of dysfunction show little serious physical deterioration and therefore, present with well concealed physical problems. This is probably why the intervention is often too little and too late. Another factor that leads to poor intervention is the depression that this disease engenders in physicians. This gives a very distorted view, indicating that the profession generally holds little hope for the treatment of the alcoholic. Of all the professionals involved in the treatment of alcoholism, the person with the most pessimistic view of recovery is frequently the physician.

In September 1980, I made my first early intervention in a manner which I feel can be carried out by many family physicians who are in close and frequent contact with their patients' families. This woman, a teacher, married to a man who had worked in the dockyards, came to see me although she was not a patient of mine. She had been referred by her own doctor because of the knowledge that I worked with alcoholism. She told me that her husband had many years of serious and destructive drinking, culminating in a recent loss of job, and that he was sitting at home just drinking away his unemployment insurance and causing considerable distress to both her and their teenage children. She was at her wits end as he refused to go to A.A., and also refused to talk to their minister.

She asked me if I would do something and I suggested, rather to my own surprise, that I would give him a call. Fortunately I inquired before calling him, whether or not there had been any *violence* in the family, particularly when he was drinking. This is a most important consideration that I must stress because, if the patient who is confronted has a history of violence when drunk, then such a move may indeed make the situation much worse for the unfortunate

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spouse. In this case, there was no history of violence and rather tentatively I called him up at home and told him that his wife had been in to see me and had indicated that he was concerned about a problem that he had with alcohol. There was a slight hesitation at the other end, and I said quickly, "I am calling to tell you that there are many ways that a person in trouble with this condition can get help, and if you would care to come into my office I'd be happy to see you and discuss it". To my surprise the man at the other end responded civilly and said that he would come in that afternoon.

It totally disrupted my afternoon, but I managed to discuss with him the various aspects of the disease and, by using the Glatt chart, I showed him how far he had progressed but how optimistic I was for his recovery if he really wished to receive help. His reaction to this intervention was remarkably positive and both the family and myself were delighted with his subsequent progress. I referred him subsequently to the local branch of the Nova Scotia Commission on Drug Dependency and was able to get him into a five day program and subsequently a twenty-eight day program for rehabilitation.

I discovered that some people suffering with an alcohol problem, when confronted with this by a reasonably sympathetic doctor, are often most willing to unburden themselves and to seek further help. Since that time I have made over twenty interventions, some successful and some not so successful. The reactions have ranged from lachrymose gratitude, to hostility and rejection, but astonishingly the majority of these interventions have been successful, if one looks at what successful means in terms of alcoholism.

What is meant by "curing" alcoholism? Is it complete and absolute sobriety from the initial decision by a patient to stop drinking, or improvement of a patient's subsequent behaviour relative to his previous drinking performance? For example, a man who has been drinking steadily for four months, has lost a job, has little or no contact with his family, and is living a depressed and unhappy existence, may become a totally sober person as the result of that intervention, or may indeed for the following year or so have two or three long periods of sobriety, broken by some "slips". However, these slips may tend to be short, maybe two or three days drinking, and with a return to sobriety after that short break. This may not be total sobriety, but comparing the previous year with its destructive and damaging drinking with this last year's considerable improvement, one may often see the beginning of a pattern which may lead to the sobriety that is desired. Quite often an alcoholic does not cease drinking at the first intervention. Such a person may not be totally ready, but the intervention by a sympathetic knowledgeable person may be the spur to a recovery program which may both surprise and delight the patient and the family.

There are two very important points to consider if

it is decided to intervene. **First**, the source of information must be made known to the person who is being contacted, and should *violence* be a pattern in the drinking history, such intervention should *not* be considered. If a woman comes and talks about her husband and requests intervention, and if he is going to beat her up following your phone call, then I would suggest that the situation is not helped. However, many alcoholics are not violent, contrary to the public impression of the problem alcoholic. Where there is violence however, the golden rule is no intervention. In such a case when all avenues have been explored, I usually recommend separation. Bryony House in Halifax, for example, is one place where a woman who is in serious trouble with a drinking husband may go and be protected.

Secondly, never confront the person with the word '*alcoholism*' over the phone. Use the words, "problem with alcohol". It is very important to have your facts straight. I remember one case that I have already reported, of a woman from the valley in Nova Scotia, who came in great distress and sadness to complain of her husband's drinking. It turned out that she had been brought up in a strictly anti-alcohol family, and that her husband who had no such upbringing, was inclined to have one or two beers at the most in the evening after a hard days work, and he would quite frequently fall asleep after supper. In this case, the amount of alcohol consumed was indeed minimal and did not in any case constitute a serious problem with alcohol, but there was a real communication problem in this family with an exaggerated significance implied to the amount of alcohol consumed.

If you intervene with no real evidence, then you may indeed be creating a situation that worsens the family problems. This is why I stress that the family physician is the ideal person to make such an early intervention. In Nova Scotia, New Brunswick and Prince Edward Island, there are agencies for dealing with drugs and alcohol abuse, staffed by very competent and knowledgeable people who have taken over much of the treatment of alcoholism in the last two decades from physicians. However, the one person who knows the family and who is in the best position to appreciate the true significance of the drinking problem early, is the family physician. No one is in a better position to find out the truth about the drinking problem than the family doctor, whether this is a small community or a large city. The family physician is often the only person who knows the true family dynamics, and is aware, with a particular "sixth sense", that there are problems in this family which may be brought to light by intelligent and thoughtful questions.

Two examples of cases in which I have intervened follow:

1. This was a 57 year old supervisor at the Dockyard. He had a Grade 12 education and had worked as a lumber trader for many years. He had a long history

of intermittent destructive drinking, in which his behaviour was described by his wife as "Jekyll and Hyde". There was no history of violence but his wife, who was a teacher, was at the end of her patience and had decided to leave him if something was not done. That morning I called him at work and took him very much by surprise. However he agreed to come in and I did not hear anything for about three weeks. Then on April 16, 1983, he came to see me having been sober in fact since my phone call. My notes read: "I spent sometime with him today and he readily appreciated that he has a significant problem and feels that it is time he did something about it. Accordingly I will see if I can get him in the Five Day Program, although at this time he does not show much interest in taking time off because that means there has to be a serious reason. I am not sure how far this man is going to go in following up my suggestions, but I will await to hear from him in the next couple of weeks and will make the arrangements then." On May 27, he went into a Five Day Program at the Metro Drug Dependency Centre in Dartmouth. On August 8, when I saw him last, he had remained completely sober and both his wife and children had expressed great delight at the tremendous improvement and both felt there was something different this time, and "this may be it".

2. The second intervention concerned a 28 year old teacher. Her father and mother had come to see me at the office and had produced evidence that the girl had a significant drinking problem. I called her after school one day but, unfortunately, it was when the family was there and she was unable to talk. I asked her to call me back when she had time and she never did. The second phone call produced a very vague response and I have not had any further communication with her. I am not sure if this intervention was in anyway successful, although I suppose the appearance of a third person in the problem, pointing out that there *was* a problem, may have brought about changes in her drinking, of which I have no knowledge. Nevertheless, I am not too optimistic.

In conclusion, I feel that this approach, acting on the best principle that we employ in family medicine, which is *early diagnosis and treatment*, offers a significant amount of hope and optimism for the early treatment of alcoholism. I am not now involved in full-time family practice but recently, I did see two of the patients who have been sober for up to six years. This approach is not really that demanding; however it does imply a knowledge of your patient, an awareness of the family dynamics, and an understanding and sympathetic approach to the problem of alcoholism. I believe that this is within the reach of most family doctors. □

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Alcohol Abuse

WHAT ARE SOME OF THE COSTS IN NOVA SCOTIA?

Gregory J. Johnstone,* M.Sc.,
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Alcohol abuse and the disabilities related to it create pervasive medical, social and psychological problems. The costs associated with alcohol misuse are staggering!¹ There is also convincing evidence of the significant role of alcohol in traffic, work and other related accidents. There is a clear relationship between alcohol and some workplace problems, criminal and violent behaviour and abuse within many domains of our society.² Some of these effects are direct and easy to measure while many are indirect and difficult to measure.

As we learn more about the nature of addiction and the complex web of problems associated with it, we realize that addictions (mainly alcoholism) now represent the third largest public health problem after heart disease and cancer. Addiction is a chronic, progressing, relapsing and often fatal disease for the drug user. His family is often severely damaged in attempting to cope with this pervasive problem, and maladaptive responses and behaviour may show up as physical, emotional, financial, legal and social problems. The criminal, social and workplace costs of addiction must also be considered but are often difficult to estimate. Loss of life, injury to persons and property are all higher than average in the addictive population.

For a population whose annual consumption of alcohol is known, the Addiction Research Foundation (ARF) of Ontario has developed some formulae which can be used to estimate the social cost of alcohol abuse in terms of increased health care, loss of productivity, law enforcement costs and increased social welfare payments.³ These formulae were applied to Nova Scotia data by Brigitte Neumann, Coordinator of Documentation, Evaluation and Research of the Nova Scotia Commission on Drug Dependency.⁴

EXCESS HEALTH CARE COSTS

The gross provincial health care budget in 1985/86 was \$781,968,000. This includes the budget of the Nova Scotia Commission on Drug Dependency, but

does not include any municipal contributions on contributions from non-government health care organizations. Using the ARF formula the excess cost of health care to the province is:

\$37,603,649.

REDUCED LABOUR PRODUCTIVITY

Excess illness, accidents on the job and poor work performance are an important cost of excess alcohol consumption. Based on 324,000 workers earning an average weekly wage of \$376.38 in 1985, reduced productivity using the ARF formula is calculated at:

\$14,420,002.

LAW ENFORCEMENT ACTIVITIES

Statistics Canada reports that in 1982 law enforcement activities (including courts, corrections and policing) cost \$75,409,000. Assuming no significant expansion in this sector, the cost in 1985 can be estimated at \$87,549,849. Using the ARF formula this gives a cost attributable to our excess alcohol consumption of:

\$5,341,416.

SOCIAL WELFARE

An Ontario survey indicated that 12.5% of social assistance cases were alcohol induced. Applying this percentage to social service costs in Nova Scotia results in a figure for social costs of:

\$34,748,662.

SUMMARY

Based on the above, the total social cost of excess alcohol use in Nova Scotia is as follows:

Health Care	\$ 37,603,649.
Reduced Productivity	14,420,002.
Law Enforcement	5,341,416.
Social Welfare	34,748,662.
TOTAL	\$ 92,113,729.

This total cost works out to \$106.58 per year for each citizen in Nova Scotia.

These figures are based on those data which are reasonably clearly associated with alcoholism. The denial, enabling and ignorance which is present among most of the population, including profession-

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als, points to the fact that most alcoholics and their families go undetected and untreated. However, the reality is that only a small number of alcoholics and their families come for treatment. If that is the case, and all indications support this view, then the estimate of cost above, of about one hundred million dollars is low. For those working in the field of addition, it would not be unreasonable to think that the hidden and indirect costs of alcoholism alone could be that much again and probably more. However, an accurate assessment will be extremely difficult to determine with any validity due to the complex nature of such a task. In the meantime a conservative estimate of \$100 million per annum can serve as a reminder of the magnitude of the problem. If it assists us in better understanding the public health challenge and motivating us to action, then such an exercise (as conservative as it may be) is worth the effort. □

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EDITOR'S NOTE:

The operating profit for the Nova Scotia Liquour Commission for that same period was 80 million dollars.

In New Zealand, Finland and some American States, a dedicated tax on alcohol is used as a means of funding drug dependency programs. The tax is calculated on the alcohol content of various beverages. As a result the more alcohol that an individual consumes, the higher the rehabilitation tax that he is automatically required to pay. This seems equitable. There is no longer any doubt that the more alcohol an individual consumes on a regular basis, the more likely it is that that individual will eventually require rehabilitation services. □

After all, the kind of world one carries about in one's self is the important thing, and the world outside takes all its grace, color, and value from that.

James Russell Lowell

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Illicit Drug Use — A Nova Scotia Update

Gregory J. Johnstone,* M.Sc.,

Halifax, N.S.

In the "old days" drug abuse was much simpler! Or so we think. In reality we can now say that the nature of addiction is essentially the same, regardless of the drug (or drugs) involved. The main difference today is the number and variety of drugs available on which to become dependent. There are differences in the pharmacology of the drug involved, and in the lifestyle surrounding the drug use, but the patient addicted to alcohol will be up against the same basic problems as the one hooked on cocaine. On the positive side, the nature of addiction, its course and impact, are much better understood today. As well, the acceptability of dealing with an addiction and the specialized treatment resources available have improved dramatically over what they were even 15 years ago.

Let us look at the range of drugs commonly available in Nova Scotia and throughout the Maritimes. You will see that when we use the term "illicit" or "street" drug we must broaden its meaning to reflect the actual pattern of drugs used by your patients.

The data analysis and clinical experience indicate there are two patterns of drug preference related primarily to age. That is, young persons (in the age range from early teens to late twenties) tend to prefer drugs in the following order of preference.

- Most Common**
- Alcohol
 - Cannabis (Marijuana, Hashish, Hash Oil)
 - Hallucinogens (e.g. LSD, Magic Mushroom)
 - Stimulants — (look-alikes*, prescription stimulants, cocaine, speed)
 - Sedative/Hypnotics (mainly Benzodiazepines)
- Least Common**
- Miscellaneous other drugs as they are available e.g. Phencyclidine (PCP), Heroin, solvents.

***Look-alike stimulants** — a mixture of caffeine, ephedrine and phenylpropanolamine (common legal over the counter decongestant drugs) are packaged to look just like the more powerful prescription stimulants and appetite suppressants available. They sell for \$.50-3.00 per unit dose. They are often referred to as "Dexies", "synthetic speed" or names which relate to their physical appearance, e.g. "black beauties", "hearts", etc. Large doses of these drugs can cause the same medical problems we see with amphetamines and cocaine.

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By far the most common drugs encountered in these drug dependent patients are alcohol and cannabis. The other drugs are often preferred by a smaller group of dedicated users. The most notable pattern evolving over the past ten years is the trend to multiple drug use. This is due in part to the irregular supply of some illicit and diverted prescription drugs. The drug dependent patient wants to avoid unplanned withdrawal, so other drugs are often used to substitute for their drug of choice when supply is low. This begins their exposure to new drugs and leads to multiple drug dependence.

In the older age group (early thirties to elderly), the pattern of drug use tends to be mainly legal drugs and sometimes progresses to use of diverted or illegally obtained prescription drugs.

The following list shows the order of preference as noted in patients treated for drug dependence in Nova Scotia

- Most Common**
- Alcohol
 - Benzodiazepines (long and short acting)
 - Opiate type pain relievers such as Percodan, Fiorinal C, 292's, Dilaudid, etc.
 - Sedative/Hypnotics (Barbiturates)
 - Antihistamines (other over the-counter self-medications)
 - Cocaine and Cannabis (in the lower part of the range)
- Least Common**
- Miscellaneous other drugs

Once again in this age range, the most common drug encountered is alcohol, and it utilizes the bulk of the treatment resources. The Benzodiazepines however, have grown rapidly in their involvement with these patients. Ten years ago Benzodiazepines were encountered sporadically (less than 5% of patients), now they are used by approximately 25-50% of patients depending on which part of the province one studies. These figures include the patients who are solely dependent on Benzodiazepines, as well as those with multiple drug dependency where these tranquilizers play a lesser role than some other drug of choice. The most common situation involves a person dependent on alcohol initially, but who gradually develops a dependence on Benzodiazepines in an effort to cope with the physical and emotional manifestations of the alcoholism. The physician may not know of the primary alcoholism when the Benzodiazepines are

started, or of other doctors the patient may be seeing to obtain these and other drugs.

DRUG PURITY AND SAFETY

One of the great risks users of illicit drugs are exposed to is that of ingesting contaminants or adulterants in these "street" or "diverted" drugs. These impurities may cause a wide range of adverse reactions and/or toxicity (organic, functional disturbances, behavioural, etc.). Often the user unknowingly obtains a supply of drug with a higher than usual concentration, which may lead to acute overdose or a "bad trip" requiring medical or psychiatric management. The only sure way to know what drug a person is taking is to have the sample analyzed. Even experienced users are often wrong in what they think they are consuming.

The drug analysis can be performed using body fluids (e.g. urine or blood) or the raw drug sample can be analyzed. The Nova Scotia Commission on Drug Dependency offers a service to physicians, of analyzing illicit or other unknown drugs which their patients may be using. The samples are analyzed at the D.J. MacKenzie Laboratory of the V.G. Hospital, Halifax. The cost is charged to the Nova Scotia Commission on Drug Dependency, and a copy of the report goes to the physician and the Commission on Drug Dependency.

COCAINE

Cocaine use in Nova Scotia has steadily increased over the last five years. Even three years ago, it was uncommon for a patient to report cocaine use, let alone an addiction problem. However, in the last twelve months the reported use of cocaine has markedly increased. A number of patients with addiction to cocaine have been treated. This trend is consistent with police reports of the increasing availability of cocaine. As well, because cocaine is relatively new in Nova Scotia, it takes some time to progress through use to the point of addiction, when help may be sought. The numbers of persons developing either acute medical/psychiatric problems and/or addiction to cocaine is expected to continue increasing for some time. However, our expectation is that it will not reach the large proportions in many large cities in the United States. The high cost of cocaine and low disposable income of most Nova Scotians would tend to limit use. When cocaine addiction does develop, even in one person it has tremendous ramifications on the community, much like heroin use.

Cocaine is generally available in the Atlantic area in the form of cocaine hydrochloride powder (30-50% pure) and mixed with various inert sugars and starch, and other local anesthetics such as benzocaine, which impart the taste, numbing sensation and other qualities of cocaine. Cocaine in this form is generally snorted and sometimes injected. When the limits of absorption through the nasal mucosa cannot accom-

modate the user's needs, or damage to the integrity of the mucosa or nasal septum occur, the user often turns to other routes of administration. It is often at this point when the user begins smoking cocaine by free-basing or with "crack".

Free-basing

The street cocaine hydrochloride, if heated with a flame, will turn black like sugar and will not vaporize. However, when it is mixed with a basic compound such as sodium bicarbonate, mixed in water and heated, the cocaine "base" molecule dissociates from the hydrochloride salt in solution. When the solution is heated above 200 degrees Celsius, the "free cocaine base" will then vaporize and can be smoked. Usually the smoke is directed through a water pipe to cool the vapors.

Cocaine Crack

If this free-base solution is "boiled down" to the residual powder or crystals, it forms a hard chunky product similar to the "plaster of paris" of a cast. This dried product is called "Crack". It can be broken into pieces or ground to a powder. Either way it contains the free cocaine base which will now vaporize and can be smoked in a cigarette or pipe.

Greater Risk

There is a much greater risk of overdose and system overload when cocaine is smoked whether by free-basing or with crack. The process of freeing the cocaine base makes the cocaine more lipid soluble and concentrates it, leaving many of the adulterants behind. This means that the cocaine is more readily absorbed, and a larger dose is generally taken. As well, the large vascular surface area of the lungs, compared with the nasal mucosa, greatly increases the dose of cocaine entering the body. Therein lies the basis of concern for cocaine toxicity. The more rapid absorption of a higher dose causes a very immediate "Rush" which is very reinforcing for the user. The cocaine effects may rapidly overload the various systems affected by cocaine. The pharmacological effects of cocaine are essentially similar to amphetamine, but more immediate and much shorter in duration.

DESIGNER DRUGS

Recently in the United States, a number of new drugs appeared on the "street". They are byproducts of manipulating existing prescription drugs. They have been called "designer drugs", since the producers are attempting to "design" a new, improved product which will avoid the food and drug laws. The parent drugs which have been manipulated so far have been opiates like meperidine (Demerol®), fentanyl (Sublimaze®) and morphine. Others will likely follow. These drugs have not yet been found in Canada. There have been some tragic consequences in the United States where impurities or incomplete purification resulted in new toxic chemicals being consumed.

DRUG DIVERSION

It is not uncommon to hear a drug dependent patient say: "Valium type drugs are easy to get. They sell for \$.50 to \$2.00 a tab depending on the dose". Similar comments are often made about other prescription drugs. They are more pure, cheaper and good pharmacological substitutes for many illicit drugs and hence, there is always a strong demand for them. Physicians would be wise to follow their "hunches" or gut reactions if they suspect some diversion or abuse might be occurring.

There are a small number of individuals who make a full time job out of travelling around the Atlantic Provinces to obtain prescriptions, especially for opiates. Some of the drugs may be used to maintain their own addiction while some are thought to be sold to other users. For example, one 4 milligram tablet of Dilaudid can fetch \$25-60 in the Halifax area. The number of individuals doing this "double doctoring" is thought to be 25-50. They are very practiced and skillful at presenting the necessary history and symptoms to elicit a prescription.

TREATING DRUG DEPENDENT PATIENTS

Generally speaking, drug addiction is a complex matter. Experience teaches us that it requires a multidisciplinary approach, over a period of time, utilizing many resources. A major stumbling block is the subtle "denial" which develops in the user and all those closely involved with him or her. Even the physician may participate in this denial of existence of a problem. This denial leads to enabling behaviour which reinforces the drug use, or delays the intervention which may be needed.

There are many resources available for the physician to draw upon. The Nova Scotia Commission on Drug Dependency is the major government agency with the mandate to treat drug dependent patients. Many other self-help and other private and non-profit services are available.

Most physicians would be wise to establish a network of local resource people and facilitates to draw on to assist them in managing a drug dependent patient. Trying to do it all by yourself has not been very successful, and often may delay the important treatment the patients and their families need. □

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Alcohol and Drug Abuse in Psychiatric Patients

Alex Richman,* M.D., M.P.H.,

Halifax, N.S.

Alcohol and drug abuse are wide-spread. This paper emphasizes the importance of these problems among psychiatric patients in Nova Scotia.

GENERAL POPULATION

Over one-half (56%) of Nova Scotians use alcohol. More than 100,000 Nova Scotians have at least seven drinks a week.²

One out of sixteen adults (6.4%) were found to abuse alcohol or other drugs according to the recent Epidemiologic Catchment Area studies in the US (six month prevalence). These epidemiologic findings are important for both diagnosis and for treatment. It has been said that of the 100 most frequently prescribed drugs, more than half contain at least one ingredient known to interact adversely with alcohol.

Patients with depression, anxiety or other psychiatric symptoms have two to four times the risk of abusing alcohol as the general population.¹

Among the drugs used in treatment of mental disorders the tricyclic antidepressants, benzodiazepines and phenothiazines have a wide range of interaction with alcohol. When physicians recognize signs and symptoms of anxiety, depression or other psychiatric problems, they should be particularly careful to enquire about the patient's abuse of alcohol or other drugs.

PSYCHIATRIC IN-PATIENT SERVICES

While the Nova Scotia Commission on Drug Dependency provides a wide range of treatment services for alcoholism and drug abuse, a substantial number of these patients are still treated within the psychiatric services.

During 1985, 5.5% of admissions to general hospital psychiatric units had a primary diagnosis of alcoholism or drug abuse (ICD Nos. 291-292, 303-305). These 77 patients had a mean stay of 11.5 days in hospital. In addition there were other cases with alcohol or drug abuse as secondary diagnoses.

Alcoholism and drug abuse accounted for over one-fifth of admissions to mental hospitals in Nova Scotia; this ratio was higher for men (27.9%) than for women (10.2%). During 1985 there were 527 admissions with a diagnosis of alcoholism or drug abuse. They spent a mean of 15.2 days in hospital. On the average day

during 1985 nearly one out of twelve patients receiving acute mental hospital care had a diagnosis of alcoholism or drug abuse.

PUBLIC PSYCHIATRIC OUT-PATIENT SERVICES, 1983-1985

During the three year period 1983-1985, between 2.7 and 4.5% of Nova Scotians were seen in public psychiatric clinics. (There were additional psychiatric cases seen by family physicians and psychiatrists in private practice.)

PERCENTAGE OF THE POPULATION SEEN IN PUBLIC PSYCHIATRIC CLINICS, 1983-1985

		Dartmouth, Halifax, Sydney (cities)	Rest of Nova Scotia
ALL DIAGNOSES			
Females	15-34	3.4%	4.5%
	35-64	3.0%	4.4%
Males	15-34	3.0%	3.0%
	35-64	2.8%	2.7%

PERCENTAGE OF PATIENTS IN PSYCHIATRIC CLINICS WITH RECORDED DIAGNOSES (PRIMARY OR SECONDARY) OF ALCOHOLISM OR DRUG ABUSE

		Dartmouth, Halifax, Sydney (cities)	Rest of Nova Scotia
Females	15-34	17.6%	9.6%
	35-64	22.1%	13.6%
Males	15-34	28.0%	18.0%
	35-64	36.4%	24.7%

A significant proportion of patients in our psychiatric out-patient clinics are now recognized as having alcohol or drug abuse. This proportion is higher in the major cities, among men, and among older patients. Nearly one-tenth of younger women in suburban psychiatric clinics and over one-third of older men seen in clinics in our larger cities, have a diagnosis of alcoholism or drug abuse.

CONCLUSIONS

Alcoholism and drug abuse affect a substantial portion of patients seen in public psychiatric clinics. Over one-fifth of mental hospital admissions have a diagnosis of alcoholism or drug abuse. Over one-twelfth of our acute mental hospital beds are used for patients with diagnoses of alcohol or drug abuse.

*Professor, Departments of Psychiatry and of Community Health and Epidemiology, Dalhousie University, Halifax, N.S.

Continued on page 61.

Accessing Drug Dependency Services in Nova Scotia*

The Nova Scotia Commission on Drug Dependency has as its central theme the regionalized delivery of comprehensive treatment and rehabilitation services for alcohol/drug dependent persons. Referrals for assessment, treatment and follow-up come from many sources in the community including primary care physicians.

Patients with alcohol/drug dependence problems or alcohol/drug related disabilities are seen by physicians, in their daily practice, on a regular basis. Some of these patients may require specific drug dependency services including detox withdrawal, assessment, treatment orientation, residential rehabilitation and/or outpatient counselling.

Physicians may make direct referrals to any drug dependency service. When referring to Detox, the physician should ensure that the patient is medically able to meet the admission criteria including being free from acute mental and/or physical problems or complications. Such referrals should go to hospital until, or when, such problems or complications clear up.

Under normal circumstances, referrals are accepted between 8:00 AM and 9:00 PM, daily; however, physicians, who medically clear their patients for detox, may refer at any time, provided a bed is available and the patient is cooperative and not violent.

There are 5 major centres in the Province for each region including Dartmouth, Pictou, Kentville, Sydney and Yarmouth. In addition, there are a number of satellite outpatient clinics in each region for follow-up and after care. Thus drug dependent individuals and their families should have reasonable access to drug dependency services near their home area:

METRO/LUNENBURG REGION

The Metro Drug Dependency Centre, the Commission on Drug Dependency's major centre in this region, is located on the grounds of the Nova Scotia Hospital on Pleasant Street, directly across from the Dartmouth General Hospital. This "Detox Centre" as it is popularly known, houses a Primary Care Unit, consisting of detox withdrawal, assessment and treatment planning, and a 5-day Treatment Orientation Program as well as a Central Outpatient Department. In addition the centre also houses a 28-day Residential Rehabilitation Program as part of the Commission's After Care Services.

The number for the Detox Centre is 424-5623, which connects to all programs. This number is available in Detox around the clock. *Satellite out patient clinics are located throughout the region as follows:*

Metro (Halifax) Drug Dependency Clinic
Suite 316, Lord Nelson Building
5675 Spring Garden Road
Halifax, N.S. B3J 1H1
Phone 424-5920

Spryfield Drug Dependency Clinic
(William Spry Multi-Service Centre)
10 Kidston Rd.
Halifax, N.S. B3R 2J7
Phone 479-1111

Sackville Drug Dependency Clinic
(Cobequid Multi-Service Centre)
70 Memory Lane
Lower Sackville, N.S. B4C 2J3
Phone 865-5750

Lunenburg County Drug Dependency Clinic
99 High Street
Bridgewater, N.S. B4V 1V8
Phone 543-7882

Musquodoboit Harbour Drug Dependency Clinic
(Twin Oaks Memorial Hospital)
Musquodoboit Harbour
Halifax County, N.S. B0N 2L0
Phone 889-3430

Sheet Harbour Drug Dependency Clinic
(Eastern Shore Memorial Hospital)
General Delivery
Sheet Harbour, N.S. B0J 2B0
Phone 885-2243

Any concerns re any admission to detox should be made to the Head Nurse, Ms. Annette Chipman at 424-5623.

Besides the general detox admission bed\$, a dedicated detox bed has been set aside for the exclusive use of the Nova Scotia, Dartmouth General and Victoria General Hospitals.

Any other concerns regarding access to treatment should be made to the Casework Supervisor, Tom Payette at 424-5920 or to the Regional Coordinator, Joe Power at 424-5623.

*Compiled by the Nova Scotia Commission on Drug Dependency.

NORTH SHORE REGION

The North Shore Drug Dependency Centre is located on Denoon Street in Pictou. It houses a Primary Care Unit, consisting of detox withdrawal, assessment and treatment planning and a 5-day Treatment Orientation Program as well as a Central Outpatient Department.

The number for the North Shore Drug Dependency Centre ("Detox Centre") is 485-4335 which connects to all programs. This number is available around the clock, in Detox.

North Shore Drug Dependency Programs, offer drug dependency services to the five counties of North Shore, Nova Scotia — Antigonish, Colchester, Cumberland, Guysborough and Pictou counties.

A referral can be made by contacting any of the following Satellite Offices which are open 8:30 AM to 4:30 PM except weekends and holidays:

North Shore Drug Dependency Program
Satellite Office
70 St. Andrews Street
Antigonish, N.S. B2G 2H1
Phone 863-5393

North Shore Drug Dependency Program
Colchester Medical Clinic
199 Willow Street
Truro, N.S. B2N 4Z9
Phone 895-1750

North Shore Drug Dependency Program
14 King Street
P.O. Box 597
Amherst, N.S. B4H 4B8
Phone 667-7094

Any concerns re any admission to detox should be made to the Head Nurse Ms. Betty Wilsack at 485-4335.

Any other concerns regarding access to treatment should be made to the Manager, Treatment Services Bob MacDonald or to the Regional Coordinator Don MacDonald, both at 485-4335.

VALLEY REGION

The Valley Health Services Association Drug Dependency Programs are located at the Crosbie Centre in the Miller Hospital in Kentville. The hospital complex houses a Primary Care Unit, consisting of detox withdrawal, assessment and treatment planning, and a 5-day treatment orientation program as well as a central outpatient department. Crosbie House is the name of the 28 day Residential Rehabilitation Program.

The number for these program services is 678-7381 (Local 142). This number is available, around the clock in Detox.

Satellite Outpatient Services are located in Windsor and Middleton.

Hants Community Hospital
Windsor, N.S.
B0N 2T0
Phone 798-8351

Soldiers Memorial Hospital
Middleton, N.S.
B0S 1P0
Phone 825-3411

Any concerns re any admissions to detox should be made to the Head Nurse, Ms. Gayle Wilson at 678-7381 (Local 142).

Any other concerns regarding access to treatment should be made to the Program Coordinator, Gaston d'Entremont at 678-7381 (Local 142).

CAPE BRETON REGION

The Cape Breton Addiction/Rehabilitation Centre is located at 115 Alexandra Street in Sydney. It houses a Primary Care Unit consisting of detox withdrawal, assessment and treatment planning and a 5 day Treatment Orientation Program as well as a central Outpatient Department.

The number for the "Detox Centre" is 539-7800 which connects to all programs. This number is available, around the clock, in Detox.

Satellite Outpatient Services are located in the following areas.

Baddeck Drug Dependency Clinic
Victoria Memorial Hospital
P.O. Box 25, R.R. #3 Baddeck
Victoria Co., N.S. B0E 1B0
Phone 295-2542 or 295-2112

Glace Bay Drug Dependency Clinic
Glace Bay Community Hospital
Main Street
Glace Bay, N.S. B1A 4Z8
Phone 849-5531

Ingonish Drug Dependency Clinic
Old Bank Building
Ingonish Beach
Victoria Co., N.S. B0C 1L0
Phone 285-2622

Inverness Drug Dependency Clinic
St. Mary's Apartment
Upper Railway Street
Inverness, N.S. B0E 1N0
Phone 258-3300 or 258-3375

North Side/Victoria (North Sydney) Drug
Dependency Clinic
North Side General Hospital
520 Purves Street
North Sydney, N.S. B2A 1E8
Phone 794-7631

Port Hawkesbury Drug Dependency Clinic
P.O. Box 2684
Central & Eastern Trust Building
Reeves Street
Port Hawkesbury, N.S. B0E 2V0
Phone 625-2363

Sydney Drug Dependency Clinic
2nd Floor, Provincial Building
360 Prince Street
Sydney, N.S. B1P 5L1
Phone 539-7800 (ext. 129)

Any concerns re any admission to Detox should be made to the Head Nurse, Ms. Dot Morrison at 539-7800.

Any other concerns regarding access to treatment should be made to the Manager, Treatment Services, Ms. Claire Nyiti or to the Regional Coordinator, Wayne Yorke, both at 539-7800.

WESTERN REGION

The Western Regional Drug Dependency Program is located in the Yarmouth Regional Hospital and is the Central Outpatient Department for the region.

Satellite Outpatient Clinics are located in the following areas:

Queens General Hospital
School Street
P.O. Box 1442
Liverpool, N.S. B0T 1K0
Phone 354-4380

Digby General Hospital
67 Warwick Street
Digby, N.S. B0V 1A0
Phone 245-5888

Digby (Sub-Office)
St. Anne's College
Church Point
Digby County, N.S. B0W LM0
Phone 769-3419

Roseway Hospital
Sandy Point Road
Shelburne, N.S. B0T 1W0
Phone 875-3906

YARMOUTH ALCOHOLISM REHABILITATION PROGRAM

Detox and Treatment Orientation: 6 Beds

Yarmouth Regional Hospital
50 Vancouver Street
Yarmouth, N.S. B5A 2P5

Contact Sandra Noah, Head Nurse
Phone 742-3541 (Local 327)

Any concerns regarding access to outpatient treatment and counselling should be made to the Regional Coordinator, David Cassidy at 742-2406.

The Yarmouth Regional Hospital has its own alcoholism rehabilitation program consisting of detox withdrawal, assessment and the 5 day Treatment Orientation Program. The number for detox, which is available around the clock is 742-3541 (local 327).

Any concerns re any admission to Detox should be made to the Head Nurse, Ms. Sandra Noah at 742-3541 (Local 427).

OTHER SERVICES

There are many other services for the drug dependent person in Nova Scotia, i.e. those not directly under the control of the Commission on Drug Dependency, for example:

Non-Profit

Salvation Army Rehabilitation Program
2044 Gottingen Street
Halifax, N.S. B3K 3A4
Phone 422-1596

Hope Cottage
2435 Brunswick Street
Halifax, N.S. B3K 2Z4
Phone 429-7968

Self Help Groups

Alcoholics Anonymous 422-5875
Al-Anon and Alateen 422-5875
Narcotics Anonymous 443-5788

Further there are residences such as Half Way House (Sydney), Recovery House (Monastery) and Gillis House (Christmas Island) that can be accessed by inquiring at the Nova Scotia Commission of Drug Dependency, at Suite 314, Lord Nelson Building, 5675 Spring Garden Rd., Halifax, N.S. B3J 1H1
Phone 424-4270.

□

A Self Pre-Treated Suicide

Thomas Elwood,* B.Sc.,

Halifax, N.S.

A 20 year old male presented with gastrointestinal complaints, 60 hours after ingesting 1½ cups of ethylene glycol. Prior to the glycol he had taken two pints of vodka in order to end his life more smoothly and swiftly but fortunately, in so doing, he unwittingly had treated his suicide. Germane aspects of the biochemistry, and the management of acute renal failure are reviewed in brief.

P.M. is a 20 year old fast-food chef with a grade 9 education. He had been depressed for months, with appetite and sleep changes, and had been smoking marijuana almost daily.

On January 26 he "wanted to end it all," and drank two pints of vodka followed by 1½ cups of antifreeze. The alcohol, to him, was meant to bring his end smoothly and swiftly, but is in fact the definitive treatment for ethylene glycol poisoning! He went home and avoided hospitalization until 60 hours later, after developing a progression of nausea, vomiting, diarrhea, cramps, and finally hematemesis.

On presentation he was bright, alert, in minimal distress, and no longer depressed, with normal hydration. His only findings were hypertension and a tender epigastrium; gastroscopy revealed a diffuse erosive gastritis. He had a normal chest and neurological examination.

BIOCHEMISTRY AND TOXICITY

Foreign substances that enter the body are mostly broken down by oxidation, presumably because: 1) this will make them more water soluble, and more easily excreted; and 2) may provide some energy at the same time.

Ethylene glycol is a simple molecule, with two carbons, and two alcohols. Its most natural fate in the body is a stepwise oxidation by alcohol dehydrogenase until both carbons are acid moieties (Figure 1) But this will happen only if the enzyme is not too engaged dealing with ordinary ethyl alcohol, for which the enzyme has a greater affinity. This alternate toxic substance (for which some human beings have a great affinity!) provides a means of treatment, by displacing ethylene glycol from the enzyme, avoiding the production of toxic metabolites, and allowing excretion of the unchanged glycol.

Ethylene glycol itself is not extremely toxic and produces an inebriation similar to ethyl alcohol, but its breakdown products are diffusely toxic, principally when they precipitate out in the convoluted tubules of the kidney.

The clinical course of this poisoning was once well delineated after 16 students inadvertently were intoxicated and suffered neuromuscular imbalance, myositis, circulatory depression, and pleural effusions, followed by renal failure.¹ The minimum lethal dose appeared to be 100 mL.

MANAGEMENT

Treatment of this poisoning is therefore the treatment first of acute neurotoxic poisoning, and then the management of acute tubular necrosis or renal failure. Accordingly, gastric aspiration and lavage, followed by respiratory support and control of seizures may be necessary. Then the clinician must prepare for impending acute renal failure.

As with other alcohols, this glycol is dialyzable.² Progression of the poisoning is best abated by hemodialysis (or peritoneal dialysis, or p.o. sorbitol) but, if unavailable, and especially if CNS depression is not profound, ethyl alcohol can be given, as explained above.³

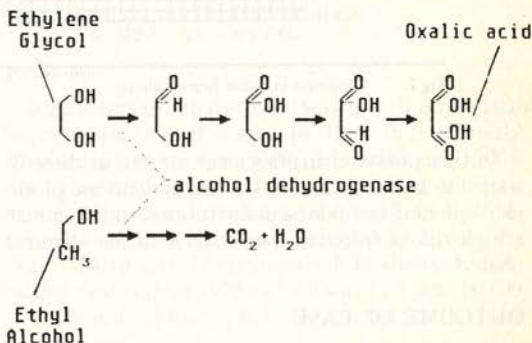


Fig. 1 Alcohol Catabolism

Acute renal failure is characterized by an oliguric phase, which lasts from a few hours to a few weeks (average 10-12 days), followed by a polyuric phase for three weeks, with urine outputs of near 6 L/day.³ The management of acute renal failure is simply explained in terms of six functions of the kidney which all

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temporarily shut down. The kidney is responsible for regulating water, electrolyte, and acid/base balance, for excreting waste products and drugs, for stimulating red cell production, and has a role in blood pressure regulation.

The first six points of renal management are therefore: 1) to restrict fluids to output 600 + mL/day, and to monitor fluid balance closely; 2) to institute a low sodium, low protein 'renal' diet, and to monitor electrolytes, including calcium (which is chelated by the oxalate molecule); 3) to monitor blood gases, giving bicarbonate for severe acidosis; 4) to avoid or reduce dose of renal-excreted drugs and to follow creatinine; 5) to follow hemoglobin levels; and 6) to treat hypertension with Propranolol® or prazosin. The three life-threatening complications of acute renal failure are hyperkalemia, acidosis, and overhydration.⁴

but this man was happy and personable on the ward. While still an inpatient, he had decided to stop taking drugs, and was looking for work. He has plans to complete high school, and to find an apartment. The psychiatrist predicted a very healthy outcome. □

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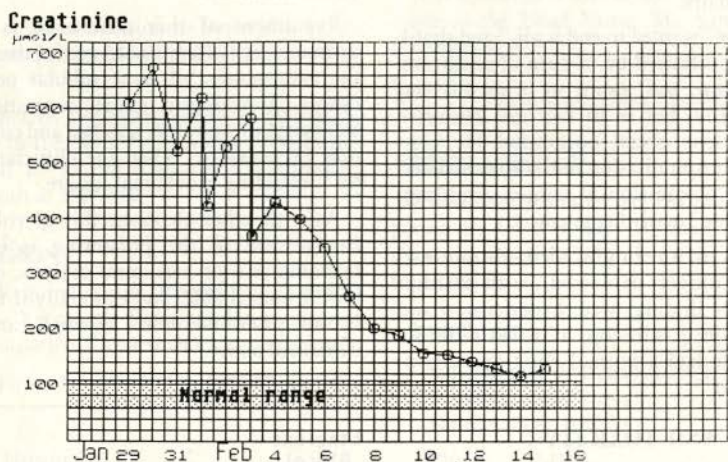


Fig 2. Creatinine in Acute Renal Failure

Further points of management are not as directly related to kidney function. Uremic patients are prone to: 7) pleural and pericardial effusions; and 8) are at a high risk of infection, particularly in the oliguric phase.⁴

OUTCOME OF CASE

After his admission, creatinine level of 675 µ /L (Figure 2), P.M. was hemodialyzed three times, and oxalate was found in the first two dialyzates. His major manifestations of renal failure were rising creatinine, polyuria, and hypertension. Despite his lethal dose of ethylene glycol, his fortunate and inadvertent self-treatment avoided any serious complications.

An intriguing aspect of this case was his lack of depressive symptoms from time of admission onward. Long term psychiatric follow-up was indeed arranged,

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Current Topics in Community Health

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ALCOHOL IN CANADA A National Perspective

This summary reviews the key findings of a Working Group on Alcohol Statistics, commissioned by Health and Welfare Canada, in relation to consumption, problems and treatment respectively.

Consumption

Of 35 industrialized countries, Canada appears to be in the middle range for per capita consumption of absolute alcohol (16th). With respect to spirits and beer however, we rank quite high (6th and 12th respectively). Even though we are not heavy consumers of wine (28th), our wine consumption increased between 1975 and 1980. Our spirits and beer consumption, on the other hand, declined slightly. More provinces and territories registered an increase in the average rate of alcohol consumption between 1975 and 1980 than a decrease. Furthermore, provinces and territories with the highest per capita rates of consumption were also most likely to have had an increase in the rate of consumption.

Half of all absolute alcohol consumed in Canada in 1980 was in the form of beer, 37 per cent in the form of distilled spirits, and 13 per cent in wine. Overall beer consumption decreased by 4 per cent between 1975 and 1980, while spirits consumption experienced an overall decrease in Canada of 2 per cent. There was a 47 per cent increase in wine consumption during this period. However, since wine consumption represents only a small part of the overall consumption of alcoholic beverages in Canada, even large increases in wine consumption will not contribute much to overall changes.

On the basis of the 1978-79 Canada Health Survey, about two-thirds of adult Canadians were classed as current drinkers (i.e., at least once a month). Only 12 per cent claimed they had never drunk alcoholic beverages, and 4 per cent said they used to drink but had not done so in the past year. For all age groups, men were more likely than women to report that they drank and drank frequently, although the difference between the sexes was smallest in the youngest age categories and increased steadily with age. There was also some evidence from the survey that young people were starting to drink sooner than those who preceded them. The proportion of current drinkers, however, was lowest in the youngest and oldest age groups and highest among young adults aged 20 to 24. There was a sharp increase in the proportions of current and

frequent drinkers between the group in their late teens and those in their twenties, with 12 per cent of males and 3 per cent of females between 20 and 29 reporting daily drinking. The over-65 group had the greatest proportion of abstainers, but a substantial proportion of men in that age group reported that they drank daily (21 per cent).

The proportion of current drinkers increased steadily from east to west, but the differences between the regions appeared to stem from the differences in the proportion of female drinkers, a higher proportion being in the western regions.

Differences in drinking patterns were associated with marital status, family income, and employment status as well as region. Among males, those who were single were most likely to be current drinkers (89 per cent) whereas among females, divorced women were most likely to be current drinkers (66 per cent). There was a much higher proportion of current drinkers among widowers (77 per cent) than among widows (34 per cent). The proportion of current drinkers increased with income and occupational status. Among males, the unemployed appeared to have the lowest proportion of alcohol users (71 per cent), whereas among females, the lowest proportion was reported by blue-collar workers (51 per cent). Unemployed women also had a low proportion of current drinkers (56 per cent). Unemployed men and women were also under represented among frequent drinkers.

Problems

It was estimated that alcohol was directly implicated in more than 2000 deaths in 1980 and indirectly involved in more than 5500. An additional 10,310 deaths were thought to be associated with alcohol, bringing the overall estimate to almost 18,000 alcohol-related fatalities in 1980, or about one in every ten deaths in that year. The national rate for direct alcohol-related deaths from 1979 to 1980 was 14.4 per 100,000 population. This rate was exceeded in four jurisdictions.

The alcohol-related death rate for males was two and one-half times that for females from 1979 to 1980 which represents no change from the period 1975 to 1978. In provinces with higher per capita consumption rates, the ratio between male and female alcohol-related deaths was relatively smaller than in other provinces.

From 1975 to 1980, the mortality rate for cirrhosis of the liver declined for both males and females,

especially in the 25 to 54 year-old age group. Declines occurred in 9 out of 12 jurisdictions. These declines were consistent with the evidence of stabilization in per capita alcohol consumption over this period. On the basis of deaths from cirrhosis, it was estimated that there were about 600,000 alcohol-dependent persons in Canada in 1980, representing about five per cent of current drinkers. Higher rates of cirrhosis deaths were more likely to occur in the richer more industrialized provinces.

Almost 2,700 road fatalities in 1980 were estimated to involve alcohol. The highest alcohol-involved road fatality rate was among 15 to 25 year olds for both males and females, although the male rate was about five times the rate for females.

In the Canada Health Survey, almost 10 per cent of classified current drinkers reported experiencing at least one problem associated with drinking in the year previous to the survey. Male drinkers were about twice as likely as females to report such problems. The most frequently reported type of problem among both male and female drinkers was "tension or disagreement with family or friends" (8 per cent of males and 4 per cent of females). Health problems were the second most frequently reported type of problem (among 3 per cent of male and 2 per cent of female current drinkers), followed in turn by difficulty with driving, injury to self or someone else, trouble with the law, and trouble with work or school.

Current drinkers in the 15 to 24 age group were more likely than older persons to report drinking-related problems. Single drinkers were also more likely than married drinkers to report problems, although this could be due to their younger ages. It was noted that current drinkers who were separated had notably high proportions of drinking problems.

Lower income drinkers, particularly males, were more likely than those with higher incomes to report alcohol problems. Unemployed drinkers also reported higher rates of drinking associated problems than those who were employed. Among male drinkers, blue collar groups reported higher rates of drinking problems than white collar groups. Current drinkers who held managerial or professional jobs were least likely to report problems. These findings are consistent with repeated evidence that they are less likely to report drinking problems than lower status and income groups.

Jurisdictions with high alcohol consumption also tended to have high alcohol-related mortality — a finding consistent with the international literature on the topic. Provinces with high alcohol consumption were also more likely to have high levels of driving-while-impaired offenses and high rates of liver cirrhosis morbidity.

Treatment

Treatment for alcohol-related problems in Canada

takes place in a variety of settings, both formal and informal, specialized and non-specialized. Unfortunately, data are not available from all settings.

During the 1970s there was an overall increase in alcohol-related separations from general hospitals, but a decrease from mental hospitals. This trend occurred in all but one province. For all of the years examined, there were at least three times as many alcohol-related separations from general hospitals than from mental hospitals, and the ratio increased over the time period.

A large increase in the number of general and mental hospital separations among females for alcohol-related disorders was evident between 1972 and 1981, although males were still four times as likely as females to appear in such facilities for alcohol-related disorders. The average age of separations over the decade was fairly stable.

Over the last half of the 1970s involuntary admission to institutions for alcohol-related disorders decreased in most provinces. Nevertheless, in a few provinces there were more involuntary than voluntary admissions for alcohol disorders. The most common procedure for involuntary admissions was commitment (i.e., compulsory hospitalization under provincial mental health acts).

In the 1970s there was a general increase in separations from general hospitals for cirrhosis of the liver, with the increase being somewhat larger for females than for males. The average length of stay for cirrhosis separations declined slightly over the time period. The majority (60 per cent) were between the ages of 45 and 64. A survey of less than half of the specialized residential care facilities for alcohol/drug addition in Canada, carried out between 1980 and 1981, found that there were more than 30,000 separations from such facilities for that time period.

Current data from specialized treatment programs, in the five provinces that reported in 1981-82, indicated that males outnumbered females in such programs by a ratio of 3.5:1. The concentration of males was most pronounced in the longer stay residential programs, with the highest proportion of female clients in outpatient programs.

Clients in specialized treatment programs tended to be in the 35 to 49 age range, followed closely by those aged 20 to 34. Day-patient and outpatient programs, however, tended to have younger clients than the other types of specialized programs, and detoxication and long-term residential programs were most likely to have clients in the oldest age group (50 and over). There was little difference between the ages of males and females in day-patient and outpatient programs.

Younger females were more evident than younger males in inpatient programs, especially detoxication.

Continued on page 61.

AMENDED BY-LAWS

Please be advised that amendments to The Medical Society of Nova Scotia By-Laws passed by Council 1986 have been approved by the Executive Council of the Province of Nova Scotia. It is recommended that you amend your copy as set out below:

"THAT Section 5.1.1 of the By-Laws of the Medical Society be amended to read:

Any group of ten or more members of the Society who are primarily interested in any particular aspect of the science and/or practice of medicine may be recognized as a Section of the Society by making formal application to the Annual Meeting of the Society, providing such application is endorsed by the Executive Committee of the Society."

"THAT Section 15.1 of the By-Laws be amended to read:

Until changed by resolution at an Annual Meeting of the Society the Office of the Society shall be located at Halifax-Dartmouth, as defined in the Halifax-Dartmouth Regional Development Plan."

D.D. Peacocke,
Executive Director

OBITUARIES

Dr. Roy G. Munroe, (62) of Stellarton, N.S. died on March 8, 1987. Born in Springhill he graduated from Dalhousie Medical School in 1952. Following post-graduate studies in the United States he practised surgery in Pictou County until his retirement in 1982. He is survived by his wife, four sons, and one daughter to whom, the Bulletin extends sincere sympathy.

Dr. Gerald Guptill, (72) of Newcastle, N.B. died March 28, 1987. Born in Grand Harbour he graduated from Dalhousie Medical School in 1958. He specialized in radiology and practised in Halifax before moving to New Brunswick. He is survived by his wife, two daughters, and two sons. The Bulletin extends sincere sympathy to his wife and family.

Dr. W.M. Robertson, (82) of Dartmouth, N.S. died on April 9, 1987. Born in Scotland he was a graduate of the Glasgow University Medical School and practised family medicine for 47 years. He was the first Nova Scotia physician to practise natural childbirth. He is survived by his wife and two daughters. We extend sincere sympathy to his family. □

ALCOHOL AND DRUG ABUSE IN PSYCHIATRIC PATIENTS

Continued from page 53.

The rate of alcohol or drug abuse is relatively high in the general population. Alcohol and drug abuse are much more frequent in persons with mental disorders such as anxiety or depression.

Family physicians should take careful histories of alcohol and drug use in patients with symptoms of anxiety or depression. Physicians who are considering prescribing psychoactive drugs should consider their possible interactions with alcohol. □

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CURRENT TOPICS IN COMMUNITY HEALTH

Continued from page 60.

Clients of specialized treatment programs tended to be unemployed, particularly in the long-term residential and detoxication programs; this was more likely to be the case among males than females.

The majority of clients in detoxication programs left within four days, whereas more than half of the clients of short-term residential programs stayed for more than 16 days; males were more likely to stay longer than females. In day-patient programs, about four-fifths of the clients stayed from 16 to 30 days, and in longer term residential programs, the largest group (44 per cent) stayed between 31 and 90 days.

Source: Adapted from *Alcohol in Canada — A National Perspective*, Department of National Health and Welfare, 2nd Edition, 1984. □



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"TAKING CARE OF TOMORROW TODAY"

Appreciations

Dr. Horace B. Colford

Dr. Horace B. Colford passed away on November 25, 1986 at the Halifax Civic Hospital, after a lengthy illness.

Horace (Hoddie) Colford was born in Chezzetcook in 1910. He graduated from Nova Scotia Teachers College in 1934, and St. Mary's University in 1938. He taught school for 10 years, before joining the R.C.A.F. and serving from 1940-45. Dr. Colford entered Dalhousie Medical School and graduated MDCM in 1951. He also attended the Harvard School of Public Health from which he acquired a degree in epidemiology, afterwards spending 25 years with the N.S. Department of Public Health as Provincial Epidemiologist. During his years with the Department, he was very active in community affairs including the Canadian Association for the Mentally Retarded and the Canadian Red Cross.

Always interested in art, Dr. Colford began painting several years before his retirement. He studied with many of Nova Scotia's leading artists, and exhibited his work in many of the Halifax Galleries and in Toronto. He was one of the founding members of Painter's Palette, an active group of local artists.

He is survived by his wife Betty, two sons Bruce, Toronto; Ian, Timberlea; a sister Vivian (Mrs. Roy Wilson), East Chezzetcook.

J.F.A.

Dr. Devere Thornton Mosher

After a lingering illness, Devere Thornton Mosher died at home in Louisbourg before Christmas 1986. He was one of that select group of physicians, the rural family doctor. With the exception of four years in Kentville, he lived and practised in Louisbourg for over 30 years, serving Louisbourg and the neighbouring fishing communities well and faithfully.

Born in Windsor, Thorney Mosher was educated in New Glasgow, took his BSc at Mount Allison and graduated in medicine from Dalhousie in 1955. During the war, he served with the Pictou Highlanders, and had recently been awarded his 40 year Legion pin. He was a member of both the Sydney and Cape Breton Medical Societies.

Doctor Mosher's main avocation was music and, in latter years, he was the organist and choir director at First-United Church, Louisbourg. He was also a member of a chorale in Sydney.

One year before his death, he was honored by his peers for thirty years of service to the community.

In 1953, he married Madeline Calkin and for the past 20 years she worked with him as office Nurse and receptionist. To Mrs. Mosher and to children Roy and Lorraine, the Medical Society extends sincere sympathy.

N.K.M.

Dr. Roy G. Munroe

Dr. Roy G. Munroe died on March 8, 1987. He was born in Springhill on August 17, 1924. He attended schools in Springhill and served during World War II with the Royal Canadian Navy. He graduated from the School of Optometry in Toronto.

He graduated from Dalhousie Medical School in 1952 and interned at the Victoria General Hospital, 1951-1952. He went to the University of Pennsylvania in Philadelphia, 1953-1954 and Memorial Hospital, Wilmington, Delaware from 1952-1956 for training in surgery.

He set up practice in Nw Glasgow, N.S., in 1956 and practiced surgery there until his retirement. He became a member of the Royal College of Physicians and Surgeons in November 1959 and Chief of Surgery in 1979. He has served in several other capacities at the Aberdeen Hospital, including President of the Medical Staff. He was also a Fellow of the International College of Surgeons.

He and his family lived in Stellarton, N.S., and will be missed by all who knew him. He is survived by his wife, mother, brother and five children to whom we extend our sympathy.

W.D. MacL.

Personal Interest Notes

SENIOR MEMBERSHIP CITATION THE MEDICAL SOCIETY OF NOVA SCOTIA

Dr. Donald S. Robb

Dr. Ronald S. Robb was born of missionary parents in Korea in 1915. He attended grade school in New Glasgow, high school in an American mission school in Korea, and then one year in a Canadian school in Japan. He entered Dalhousie and obtained a BA in 1936, a BSc. in 1938, and a MDCM in 1942.



A special presentation of Senior Membership was made to Dr. Donald S. Robb at a recent meeting of the Cape Breton Medical Society. Dr. D.S. Robb who was unable to attend the Annual Meeting of the Society Last November is shown (from left to right) being presented this Certificate by Dr. Rob Stokes, Chairman, Executive Committee and Dr. Paul Boyd, President of the Cape Breton Medical Society.

Dr. Robb's career reflects an important chapter in medicine in this century. He spent the next four years as a Resident Physician in the Nova Scotia Sanatorium in Kentville, at a time when tuberculosis was a major health hazard throughout the Province, when the disease was frequently fatal, when those who recovered did so only after spending many months or years "on the cure", and even then lived the rest of their lives with the threat of reactivation.

After the war, the Department of Public Health introduced "free treatment" for tuberculosis and expanded its anti-tuberculosis program. Then, Dr. Robb was Medical Superintendent Administrator of Roseway Hospital for 15 years, when the improvement

in tuberculosis situation made it possible to close the tuberculosis service at Roseway. He then moved to Point Edward in Sydney, again as Medical Superintendent Administrator. Finally in 1979, the last hospital bed reserved exclusively for tuberculosis was closed, and he retired, perhaps being able to say that he worked himself out of a job.

During the years with the Department, he witnessed the introduction of Streptomycin in 1947 and other anti-tuberculosis drugs in the ensuing years, and he experienced the thrill of having patients, with meningitis and other previously fatal forms of tuberculosis, recover. He saw methods of treatment change drastically. He saw the death rate from tuberculosis drop from over 70 to less than 1/100,000, and over, 1,200 in the Province to zero.

Since retirement he has continued to do some medical work on a part-time basis, at the Cape Breton Addiction Centre and at Braemor Home, an institution for the mentally retarded and chronically mentally ill.

While in Roseway Hospital he married Freda Dawson, his laboratory technician. They have two children. The younger died as a result of a car accident at age 18. The elder daughter is now in fourth year medicine at Dalhousie.

Dr. Robb has been active in community affairs, as Chairman of the Cape Breton Branch of the St. John Ambulance, various aspects of church work, and in the Westmount garden club. Hobbies include painting, gardening and photography.

For his exemplary contribution and for the high esteem in which he is held by us, the Cape Breton Society proudly recommends Dr. Ronald Robb for Senior Membership in The Medical Society of Nova Scotia.

P.C. Boyd, M.D.
Cape Breton Branch Society

*The biggest mark you make in life
is the mark you make on your own family.*

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