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## MAINE BENZODIAZEPINE STUDY GROUP

### Mission Statement

The Maine Benzodiazepine Group is dedicated to educating healthcare providers and the general public about the risks and benefits of prescription benzodiazepines. We are committed to helping create alternatives to benzodiazepine use, when indicated, and providing opportunities for fully informed decision prior to the initiation of benzodiazepines.

Reasons for concern:

1. Patients may become physically and psychologically dependent on benzodiazepines.
2. This dependence may contribute significantly to morbidity and mortality such as cognitive deficits, an increased motor vehicle accident rate, and increased fall risk, particularly in the elderly.
3. Prescription drug abuse, including benzodiazepines, is a rapidly growing problem in Maine. This is evidenced by a report of the Maine Attorney General's Office especially in the context of combinations of different substances of abuse, including prescription medications.
4. Benzodiazepine prescribers and consumers may not be fully informed of the risks at the time of prescribing.

5. Use of prescription medication by someone other than the person for whom it was authorized or in a way in which it was authorized is an increasingly serious problem
6. The alarming association between prescription medication and criminal activity may be growing.
7. Lack of mental health parity and access to specialized providers may lead to less use of more appropriate treatments.
8. Lack of expertise in withdrawal methods for people dependent on benzodiazepines within the medical profession.

Membership:

The group is open to anyone interested in studying the risks and benefits of benzodiazepines and exploring the promise of evidence-based treatments.

Goals:

1. Review the medical literature to compile information to advance our understanding of the risk/benefit ratio of benzodiazepines.
2. Create a process by which this information can be added to as knowledge is furthered and updated.
3. Design and implement a plan to increase access to information regarding the risk/benefit ratio of benzodiazepines for prescribers and consumers.
4. Give alternatives to chronic benzodiazepine use for prescribers' and consumers' consideration.
5. Improve the treatment of anxiety disorders and decrease risks associated with benzodiazepines through education regarding alternatives and risks at initiation.
6. Recognize resources in current existence for the treatment of anxiety disorders and develop ways to increase resources where needed.
7. Identify prospects for research that will increase recognition of the risks and benefits of benzodiazepines and further education.
8. Collaborate with associations and agencies regarding benzodiazepine abuse/dependence issues as well as the education of healthcare providers and the general public.
9. Provide information about benzodiazepine withdrawal methods for people dependent on benzodiazepines to healthcare practitioners.

## Background and Purpose

### History and Mission of the Maine Benzodiazepine Study Group (MBSG)

Benzodiazepines are United States (US) Drug Enforcement Agency (DEA) Schedule IV controlled substances that are typically prescribed for, but not limited to, the treatment of anxiety, insomnia, seizures, and alcohol withdrawal. In recent years, research shows that those rates are surprisingly high, particularly among females and persons 40 years of age and older. Study group members have observed the consequences of overuse of

benzodiazepines among Maine residents of all ages. Those consequences include behavioral problems, drug dependence, serious drug interactions, impaired driving, and death. They affect individuals, families, and society as a whole. Additionally, they contribute a significant financial burden to the health care services. The Maine Drug-Related Mortality Patterns 1997-2002 analysis ([www.state.me.us/ag/pr/drugreport.pdf](http://www.state.me.us/ag/pr/drugreport.pdf)) conducted recently by the Margaret Chase Smith Center, found that 32 of all 374 drug-related deaths over this five-year study period included one or more benzodiazepines in the victim toxicology, 9% of these deaths were caused by benzodiazepines alone in combination.

The Maine Benzodiazepine Study Group ([www.noemaine.org/benzo/benzo.htm](http://www.noemaine.org/benzo/benzo.htm)) was formed in late 2002 as an initiative of the Northeast Occupational Exchange in Bangor, and is comprised of physicians, epidemiologists, nurse practitioners, drug abuse specialists, health care providers, payers, advocates, and other interested parties in Maine, other US States, and the Canadian provinces Newfoundland and Labrador, Prince Edward Island, New Brunswick and Quebec. The MBSG was created to gather data on benzodiazepine use and to develop evidence-based strategies that promote appropriate prescribing and usage. The group meets monthly utilizing various information technology services. During 2003, they undertook the first MBSG survey of benzodiazepine use, misuse, and abuse; inviting submissions from participant organizations. This was followed by an international conference held in September 2003, in Bangor, Maine.

#### Purpose of this Document

The primary purpose of this white paper is to:

1. Document the efforts of the MBSG during 2003, including:
  - o The survey of benzodiazepine use and misuse prevalence in Maine and comparison populations for the year 2002
2. Summarize the proceedings of the First Annual Maine Benzodiazepine Conference, 2003, including recommendations of the conference subgroups:
  - o Evidence-based assessment of benzodiazepine use and misuse
  - o Education and practice guidelines regarding benzodiazepine therapeutic use
  - o Benzodiazepines and drug abuse
  - o Older adults and benzodiazepines

## MBSG Activities 2003

The MBSG meets monthly, including videoconferencing and teleconferencing access throughout Maine, other US states and selected Canadian provinces. The group has produced a mission statement and gathered statistical data on benzodiazepine prescribing, morbidity, and mortality from a broad range of sources throughout the state of Maine, other US states and internationally. Many of these data, provided voluntarily by clinicians, agencies, administrators, and the State's health care plans, have not been previously published, particularly data related to a number of subpopulations within the state of Maine. The MBSG is analyzing data related to the extent of benzodiazepine prescribing in Maine, as well as its risks and impacts on patients, families, and the Maine health care system.

In September 2003, in Bangor, the MBSG convened the First Annual Maine Benzodiazepine Study Group Conference: Information for Action. In preparation of the conference, the group identified four focus areas to help direct the conference dialogue: (a) assessment and data analysis; (b) education and practice guidelines; (c) drug abuse; and (d) benzodiazepines and older adults. Break-out group sessions targeted these four topics and produced sets of recommendations. Summaries of the subgroup recommendations were prepared by discussion leaders following the conference and are included in this document.

During the remaining months in 2003, efforts began on a number of fronts, stimulated in whole or in part by the conference discussions. There is a need to disseminate MBSG findings produced considerable post-conference discussion. Members noted some challenges to interpretation of some data sets while acknowledging the completeness of others. Also, there was much heterogeneity in the types and sources of the data. There was consensus regarding the need to disseminate the survey results with appropriate caveats. This document constitutes one step in the process.

Through discussions on developing details of the 2004 Data Survey, and in response to making the data more timely and accessible, work has begun on a way to post new survey numbers on a monthly basis on one of the MBSG member websites, [www.dominiondiagnostics.com](http://www.dominiondiagnostics.com). The group has begun development of the second annual MBSG survey.

Arising from the conference discussions related to the disposal of unused and outdated medications, the Maine State Senator, Lynn Bromley, has proposed a bill, LD1826, to encourage the safe disposal of these medications. A December 2003 meeting of interested parties, several of whom were MBSG participants, was convened by Senator Bromley. The meeting was intended to begin the process of addressing issues related to drug disposal, and currently has passed legislation through the Health and Human Services (HHS) committee.

In an effort to learn more about beliefs and practices of Maine prescribers, Mike Rizzo (a graduate student, University of Maine School of Nursing) has undertaken a survey of advanced practice nurses in the state. The survey examines knowledge related to their benzodiazepine prescribing patterns, as well as rationale for their use. A physician survey with the Maine Medical Association, Maine Psychiatric Association and Maine Children's Alliance is under development and online surveys for patients and clinicians are under discussion.

## MBSG Survey of the 2002 Data

The MBSG requested submission of age and gender stratified datasets from authors who collect such data. Most contributions are for 2002, and target Maine populations. It is important to note that the data sources, data quality, and reference populations differ. Yet, because the overall coverage approaches two-thirds of Maine's total population and includes such a broad range of subpopulations, the data are seen to make a significant contribution to our understanding of benzodiazepine use in the state.

In accordance with guidance from the MBSG epidemiologists we present the survey submissions below with a number of caveats, stated here and explained in greater detail below. Readers are cautioned that the survey is preliminary in nature, and there remain some methodological issues to be addressed. Data are presented here to inform future inquiry, and are not to be cited or published without explicit written permission from contributors.

- The units of analysis and the original purposes of the datasets vary considerably and thus dataset prevalence statistics should not be combined. For example prevalence of benzodiazepines found in toxicological testing of persons dying of drug overdose is very different from prevalence of prescribing of benzodiazepines in a clinical setting.
- The populations represented by the datasets differ in terms of sociodemographic, clinical, and other characteristics. Medicaid and correctional facility populations, for example, can be expected to differ from each other and from subscribers to private insurance.
- Some datasets are not unduplicated, that an individual may be counted more than once. Notation is made below when this is the case. For example, calls to the poison center may reflect repeat calls.
- Some datasets do not include a denominator (a quantification of the total number of units/persons in the population from which they were extracted) and cannot therefore be used to describe prevalence.
- Some datasets do not specify doses, duration of use, drug combinations, diagnoses or therapeutic indications.
- Some datasets are from very small populations and may either have small sample size bias or reflect 100% reporting for that subgroup.
- In some datasets the methods used to gather and extract data are unspecified, making those queries essentially un-replicable in a strictly scientific sense.

Any changes to the conclusions reported in this white paper, which arise during the intended future exploration of the datasets, be duly noted and emphasized in future publications.

## Methods

The MBSG generated a single survey question for its members who collect data (see Table 1), requesting counts of (unduplicated individuals (or other units) using or associated with benzodiazepine use/misuse/abuse, as well as gender and ten-year age stratification. Participants were asked to focus on 2002 data, but were not prohibited from reporting data from other years. The group recognized that some participants may not be able to adhere to all criteria in the survey instrument, and welcomed all submissions. An international reference list of generic and brand name benzodiazepines was provided (see Table 2) Although there are other drugs for which the prescribing use, or pharmacological effects may be similar to benzodiazepines, e.g., carisprodol or zolpidem or Ambien, these were excluded from the survey.

Some MBSG participants are from states other than Maine and from other countries. These individuals and organizations were also invited to submit data. Literature searches and Internet searches revealed additional data for possible comparison. For the purposes of this report, only the Maine data are included and all other submitted counts are being collated for future reports and publications.

Table 1. Maine Benzodiazepine Study Group Survey Question for Year 2002

<p>“What is the count of unduplicated individuals, by sex, by 10 year age-bands, by specific benzodiazepine (NDC Coded where possible) for the durations of less than 30, 60, 90 and over 90-day time periods? Any diagnosis.”</p>
--

Table 2. Specific Benzodiazepines Included in the MBSG Survey of 2002

United States	Canadian Only <sup>1</sup>
Generic/Brand	Generic/Brand
Alprazolam(Xanax)	(Rivotrol)
Chlordiazepoxide (Librium)	Bromazepam(Lectopan)
Clonazepam (Klonopin)	Clobazam(Frisium)
Clorazepate(Tranxene)	Nitrazepam(Mogadon)
Diazepam(Valium)	
Estazolam(Prosom)	
Flurazepam(Dalmane)	
Halazepam(Paxipam)	
Lorazepam(Ativan)	
Midazolam(Versed)	
Oxazolam(Serax)	
Quazepam(Doral)	
Temazepam (Restoril)	
Triazolam(Halcion)	

1. These may be consumed by some patients near the Canadian border, thus are included where possible  
 Table 3. US Benzodiazepines - Manufacture, WHO, DEA, and VA Codes

US Benzodiazepines							
Chemical Name	Brand Names	GPI	ATC	DEA <sup>1</sup>	VA <sup>2</sup>	DEA Schedule	Main Statutory Controlled Drug Classification
		Generic Product Identifier	Anatomic Therapeutic, and Chemical	DEA Controlled Substances Code Number	US VA Drug Number		
Alprazolam	Xanax	57100	N05BA12	2882	CN302	IV	Z
Chlorazepoxide	Librium, Libriabs, Limbitrol, SK-Lygen	57100	N05BA02	2744	CN302	IV	O
Clonazepam	Klonopin, Conopin	72100	N03AE01	2737	CN302/CN400	IV	Z
Clorazepate	Tranxene	57100	N05BA05	2768	CN302/CN400	IV	Z
Diazepam	Valium, Valdease	57100	N05BA01	2765	CN302/CN400; MS200	IV	P
Estazolam	ProSom, Domnamid, Euroth, Nutalon	60210	N05CD04	2765	CN302	IV	Z
Flurazepam	Dalmane	60210	N05CD01	2767	CN302	IV	Z
Halazepam	Paxipam	57100	N05BA13	2762	CN302	IV	Z
Lorazepam	Ativan	57100	N05BA06	2885	CN302/MS200/CN400 GA609	IV	Z
Midazolam	Versed	60210	N05CD08	2884		IV	Z
Oxazepam	Serax, Serenid-D	57100	N05BA04	2835	CN302	IV	Z
Quazepam	Doral, Doralin	60210	N05CD10	2881	CN302	IV	Z
Temazepam	Restoril	60210	N05CD07	2925	CN302	IV	Z
Triazolam	Halcion	60210	N05CD05	2887	CN302	IV	Z
SOURCE:	Manufacturer		WHO <sup>3</sup>	DEA	VA (as published in USP DI)	DEA	Title 17-A MAINE CRIMINAL CODE, Part 2: SUBSTANTIVE OFFENSES Chapter 4: Drugs §112. Schedules W, X, and Z

1. Drug Enforcement Agency
2. Veterans Affairs
3. World Health Organization

## Results

In assessing the scope of the MBSG inquiry into benzodiazepine presence in Maine, we considered the presence/absence of data at stages of manufacture, distribution, sales, prescription (specific clinical settings), illegal use and misuse, and waste stream. Table 5 itemizes the datasets in the survey and their placement in the lifecycle stages. Data quantifying benzodiazepines in Maine are available for the following stages:

- Manufacture
- Prescription
- Clinical Settings (primarily outpatient)
- Illegal use/misuse/abuse (diversion)

Data are, as yet, unavailable or not assessed for the following stages

- Distribution (either wholesale or sales)
- Sales (pharmacy or internet)
- Hospital inpatient settings
- Waste stream and drug returns

In many national surveys (for example the ARCOS data) benzodiazepines are excluded. In other surveys clonazepam is frequently excluded and buspar (not a benzodiazepine) is included.

Table 4. Dataset Availability and Assessment Organized by Drug “Lifecycle” Stages

Drug “Lifecycle” Stage	Drug “Lifecycle” Stage	Dataset Submitted
Manufacture	Commercial Illegal	No data available
Marketing	DTC Professional Media: Television Radio Newspaper Magazines Professional detailing	Not assessed
Distribution	Wholesale distributor sales Samples	Not identified
Sales	Interstate prescription monitoring programs Internet	Not assessed
Prescriptions	Health insurance prescription benefit programs	<ul style="list-style-type: none"> <li>Express Scripts (for year 2000 and 2002)</li> <li>Veterans’ Administration (declined to participate)</li> <li>Aetna (declined)</li> <li>Cigna (declined)</li> </ul>
	Health insurance programs	<ul style="list-style-type: none"> <li>Anthem</li> <li>Maine Health Information Center</li> <li>Maine Medicaid</li> </ul>
	Internet	Not available
Clinical	Hospital Inpatient	Not assessed
	Substance Abuse Treatment (outpatient)	<ul style="list-style-type: none"> <li>TEDS</li> <li>Discovery House Winslow (Methadone)</li> </ul>
	Outpatient	<ul style="list-style-type: none"> <li>Central Maine Family Practice Residency Program</li> <li>Northeast Occupational Exchange</li> <li>Maine Support &amp; Recovery Services Portland</li> </ul>
Corrections	Corrections settings	<ul style="list-style-type: none"> <li>Maine county jails</li> <li>Maine Dept. of Corrections</li> </ul>
Poison Center	Calls regarding exposures Calls for information & suicides	<ul style="list-style-type: none"> <li>Northern New England Poison Center</li> </ul>
Diversion	Arrests and reports	<ul style="list-style-type: none"> <li>Maine Attorney General Drug Prosecution Cases</li> <li>National Drug Threat Assessment Survey Maine</li> <li>Maine DEA arrests &amp; seizures</li> <li>MDEA Samples Sent To NFLIS</li> </ul>
Mortality	Drug-related deaths	<ul style="list-style-type: none"> <li>Maine Office of Chief Medical Examiner</li> </ul>

Tables 5A to 5E detail the data characteristics. Notation has been added where data are unduplicated, where gender and age are known, the denominator [population size from which the data were drawn] is known, and if there are specific issues related to quality of the data or methodological concerns.

Table 5-A. Characteristics of Submitted MBSG Datasets: Insurance Programs

Characteristic	Anthem	Express Scripts Year 2002	Maine Health Information Center	Maine Medicaid
Drug "Lifecycle" Stage	Prescription: Health insurance program	Prescription: Health insurance prescription program	Prescription: Health insurance program	Prescription: Health insurance program
Timeframe	2002	2002	2002	2002
Unit of analysis	Unduplicated subscribers	Unduplicated subscribers	Prescriptions over the course of the year enrollees not unduplicated	Unduplicated subscribers
Target population	Maine subscribers to Anthem Insurance	Maine subscribers to Express Scripts	Maine employees of participating businesses	Medicaid subscribers
Methodological comments		Random sample Filter used MBSG list of drugs	Unit of analysis is prescriptions; number of individuals receiving them is unknown	Data for the month of October was not included so numbers reported for the year may be underestimated
Population size	367,907 enrollees	N = 206,675 enrollees n = (4,993 continuously eligible, 3,274 not continuously eligible)	24,565 BDZ prescriptions for an unknown number of enrollees  (There are a total of 86,297 enrollees.)	274,179 enrollees
Unduplicated (likely no overlap between insurance programs)	Unduplicated	Unduplicated	Not Unduplicated	Unduplicated
Gender distribution	67% of 22,629 enrollees who have BDZ prescriptions are female	62% of 273 enrollees who have BDZ prescription are females	67% of BDZ prescriptions are for females (enrollees not unduplicated)	69% of 26,744 enrollees who have a BDZ prescription are female
Age distribution	N= Age Gender 480 10-19 (188 M) 1363 20-29 (408 M) 3068 30-39 (901 M) 5480 40-49 (1761 M) 5841 50-59 (2005 M) 3491 60-69 (1230 M) 1799 70-79 (647 M) 845 80-89 (250 M) 178 90-99 (39 M)	N= Age Gender 9 10-19 (5 M) 15 20-29 (5 M) 35 30-39 (13 M) 47 40-49 (15 M) 52 50-59 (20 M) 30 60-69 (9 M) 15 70-79 (4 M) 8 80-89 (4 M) 0 90-99 (0 M)	Cell sizes deemed too small to release age distribution	N= Age Gender 151 0-9 (95 M) 840 10-19 (362 M) 3087 20-29 (855 M) 5377 30-39 (1578 M) 5809 40-49 (2030 M) 3633 50-59 (1245 M) 2539 60-69 (789 M) 2475 70-79 (652 M) 1972 80-89 (452 M) 861 90-99 (115 M)
Overall prevalence of	6.15% of enrollees	3.3% of all Maine enrollees	Unassessed	9.75% of enrollees

BDZ prescription		4.3% of those continuously eligible 1.8% of those not continuously eligible		
Prevalence males & females	7.60% of female 4.44% of male	2.0% of females 1.3% of males  3.4% of females continuously eligible 2.1% of males continuously eligible	Not assessed	11.98% of females 6.86% of males
Prevalence in elders, gender combined	10% 50-59 11% 60-69 7% 70-79 5% 80-89	6% 50-59 6% 60-69 10% 70-79 6% 80-89	Not assessed	20% 50-59 19% 60-69 21% 70-79 22% 80-89

1. A random sample of N= 8,2767 was used for the statistical analysis and calculate prevalence.

Table 5-B. Characteristics of Submitted MBSG Datasets: Clinical Settings

Characteristic	Maine State Office of Substance Abuse: Treatment Data System Admissions	Northeast Occupational Exchange (outpatient mental health services)	Catholic Charities Maine Support & Recovery Service (outpatient)	Discovery House, Winslow (outpatient Methadone)	Central Maine Family Practice, Lewiston (outpatient)
Drug "Lifecycle" Stage	Clinical facility settings	Clinical facility settings	Clinical facility settings	Clinical facility settings	Clinical facility setting
Timeframe	July 1995-June 2002	2002-2003	2003	2002	2003
Unit of analysis	Patients	Patients	Patients	Urine tests	Patients visiting the clinic over 90 day period Prescriptions written for BDZ over 90 day period
Target population	Maine substance abuse outpatients	Outpatient mental health clients	Outpatient substance abuse clients	Methadone clinic clients	Outpatient family practice clients
Methodological comments				Using a general urine screen for BDZ	--All ages included --389 prescriptions for BDZ among 2142 patients over 90 day period --Some patients received >1 BDZ prescription --267 active BDZ prescriptions, excluding Clonazepam
Population size	78,206 Admissions	2,157 Clients	Not reported	37,344 Urine tests	2142 patients
Unduplicated?	Unduplicated	Unduplicated	Unduplicated	Not unduplicated	Not Unduplicated
Gender distribution?	No	No	11 M 23 F 34 Total clients with BDZ prescription	Not available for BDZ-positive tests	No
Age distribution?	No	Children/adults	2 20-29 (1 M 1 F) 7 30-39 (5 M 2 F) 8 40-49 (3 M 5 F) 13 50-59 (2 M 11 F) 4 60-69 (0 M 4 F)	Not available for BDZ-positive tests	No
Overall prevalence of BDZ prescription	0.4% of admissions are for BDZ dependency	7.6% of clients  Prescription frequency 22 Alprazolam 28 Lorazepam 3 Chlordiazepoxide 86 Clonazepam 18 Diazepam 4 Temazepam 1 Oxazepam	Not assessed (cases size not reported)  Prescription frequency 3 Alprazolam 1 Chlordiazepoxide 14 Clonazepam 3 Diazepam 12 Lorazepam 1 Temazepam	16.7% positive for BDZ 6.8% with a known prescription 9.9% without a known prescription	Prescription frequency 49 Alprazolam 111 Diazepam 102 Lorazepam 3 Oxazepam 115 Clonazepam 9 Clorazepate
Prevalence males & females	Not assessed	Not assessed	Not assessed	Not assessed	Not assessed
Prevalence in elders, gender combined	Not assessed	Not assessed	Not assessed	Not assessed	Not assessed
Clinical indication for therapy provided	Yes	79 anxiety 21 sleep 13 panic attacks 10 mood stabilizer or depression 3 detoxification or withdrawal	No	No	No

Table 5-C. Characteristics of Submitted MBSG Datasets: Correctional Settings

Characteristic	Maine State Dept. of Corr. Adults	Maine State Youth Facility	Maine County Jail 0624	Maine County Jail 1811	Maine County Jail 2211	Maine County Jail 0926
Drug "Lifecycle" Stage	Correctional Facility	Correctional Facility	Correctional Facility	Correctional Facility	Correctional Facility	Correctional Facility
Timeframe	May 2003	2003	Mar 2003	May 2003	May 2003	May 2003
Unit of analysis	Inmates with BDZ prescription	Inmates with BDZ prescription	Inmates with BDZ prescription	Inmates with BDZ prescription	Inmates with BDZ prescription	Inmates with BDZ prescription
Target population	State prison inmates	Detention inmates (youth)	Jail inmates	Jail inmates	Jail inmates	Jail inmates
Population size	2155	Not reported	302	28	168	35
Unduplicated	Unduplicated	Unduplicated	Unduplicated	Unduplicated	Unduplicated	Unduplicated
Gender Distribution	No	Not assessed	No	0 F 2 M	0 F 6 M	1 F 0 M
Age distribution	No	Not assessed	3 20-29 20 30-39 17 40-49 7 50-59 3 60-69	0 20-29 0 30-39 1 40-49 1 50-59 0 60-69	0 20-29 4 30-39 0 40-49 2 50-59 0 60-69	0 20-29 1 30-39 0 40-49 0 50-59 0 60-69
Overall prevalence of BDZ prescription	3.5% (75 inmates had 139 BDZ orders, an average of 1.8 each)	0.0%	17.9% (54 inmates had 98 BDZ orders, an average of 1.8 each)	7.1%	3.6%	2.9%
Prevalence in males & females*	Not assessed	Not assessed	Not assessed	Not assessed	Not assessed	Not assessed
Prevalence in elders, genders combined**	Not assessed	Not assessed	Not assessed	Not assessed	Not assessed	Not assessed
Clinical indication for therapy	Not reported	Not assessed	37 Axis I 0 Axis II 4 Axis III 6 Unknown	1 anxiety 2 skel. muscle spasm	6 anxiety	1 Axis I and II
Length of current prescription	Not reported	Not assessed	Not reported	Not reported	30 days 2 60 days 1 90 days 2 91+ days 1	Not reported
Prescription source	Not reported	Not assessed	43 community 5 new to jail 6 unknown	Not reported	2 community 4 new to jail	Not reported
BDZ	Not reported	Not assessed	20 Alprazolam 3 Chlordiazepoxide 46 Clonazepam 19 Diazepam 10 Lorazepam	1 Alprazolam 1 Diazepam	4 Clonazepam 1 Xanax 1 Lorazepam	1 Clonazepam

Table 5-C. Characteristics of Submitted MBSG Datasets: Correctional Settings

Characteristic	Maine County Jail 1316	Maine County Jail 1202	Maine County Jail 1208	Maine County Jail 1815	Maine County Jail 2216	Maine County Jail 1326	Maine County Jail 0921
Drug "Lifecycle" Stage	Correctional Facility	Correctional Facility	Correctional Facility	Correctional Facility	Correctional Facility	Correctional Facility	Correctional Facility
Timeframe	May 2003	May 2003	May 2003	May 2003	May 2003	May 2003	May 2003
Unit of analysis	Inmates with a prescription for BDZs	Inmates with a prescription for BDZs	Inmates with a prescription for BDZs	Inmates with a prescription for BDZs	Inmates with a prescription for BDZs	Inmates with a prescription for BDZs	Inmates with a prescription for BDZs
Target population	Jail inmates	Jail inmates	Jail inmates	Jail inmates	Jail inmates	Jail inmates	Jail inmates
Population size	58	158	68	23	172	98	41
Unduplicated	Unduplicated	Unduplicated	Unduplicated	Unduplicated	Unduplicated	Unduplicated	Unduplicated
Gender Distribution	1 F 4 M	2 F 6 M	0 F 4 M	2 F 3 M	2 F 4 M	2 F 2 M	2 F 1 M
Age distribution	2 20-29 1 30-39 1 40-49 1 50-59	4 20-29 3 30-39 1 40-40 0 50-59	1 20-29 1 30-39 1 40-49 0 50-59	2 20-29 2 30-39 1 40-49 0 50-59	1 20-29 2 30-39 2 40-49 1 50-59	1 20-29 2 30-39 1 40-49 0 50-59	0 20-29 0 30-39 2 40-49 1 50-59
Prevalence of BDZ prescription	8.6%	5.1%	5.9%	21.7%	3.5%	4.1%	7.3%
Prevalence males & females	Not assessed	Not assessed	Not assessed	Not assessed	Not assessed	Not assessed	Not assessed
Prevalence in elders, genders combined**	Not assessed	Not assessed	Not assessed	Not assessed	Not assessed	Not assessed	Not assessed
Clinical indication for therapy	5 anxiety	1 anxiety 3 depression 2 bipolar 2 adjustment disorder	4 anxiety	5 anxiety	4 anxiety 1 depression 1 PTSD	3 depression 1 alcoholism	3 anxiety
Length of current prescription	30 days 1 60 days 3 90 days 0 91+ days 1	30 days 4 60 days 2 90 days 0 91+ days 1	30 days 0 60 days 0 90 days 4 91+ days 0	30 days 0 60 days 2 90 days 0 91+ days 3	30 days 1 60 days 0 90 days 0 91+ days 5	30 days 1 60 days 1 90 days 0 91+ days 2	30 days 1 60 days 0 90 days 1 91+ days 1
Prescription source	2 community 3 new to jail	7 community 1 new to jail	4 community 0 new to jail	5 community 0 new to jail	6 community 0 new to jail	3 community 1 new to jail	3 community 0 new to jail
BDZ	3 Clonazepam 1 Xanax 1 Lorazepam	8 Clonazepam	2 Xanax 1 Lorazepam 1 Valium	4 Clonazepam 1 Xanax 1 Valium	2 Clonazepam 1 Xanax 1 Librium 2 Lorazepam	3 Clonazepam 1 Xanax	1 Clonazepam 1 Xanax 1 Librium

Table 5-D. Characteristics of Submitted MSG Datasets: Medical Examiner, Poison Center, & Impaired Drivers

	Maine State Office of Chief Medical Examiner	Northern New England Poison Center: Poisonings	Northern New England Poison Center: Calls for Information	Maine State Health & Environmental Testing Lab: Impaired Drivers
Drug "Lifecycle" Stage	Mortality	Poisoning	Poisoning	Impaired drivers
Timeframe	2002	2002	2002	2000-2002
Unit of analysis	Drug-related death	Calls regarding a potential human poisoning exposure	Calls requesting information only (not poisoning exposure)	Urine samples from impaired drivers
Target population	Medical examiner cases	Callers to poison center hot line	Callers to poison center hot line	Impaired drivers
Methodological comments	Toxicology levels are forensically valid (not just screens)			Screening only some samples with lower levels may not test positive
Population size	160	13,091 calls	12,685 calls	969 tests
Unduplicated?	Unduplicated	Not unduplicated	Not unduplicated	Unduplicated
Gender distribution?	Deaths with BDZ in toxicology 33 M 23 F 56 Total  Deaths caused by BDZ 10 M 6 F 16 Total	Calls about human exposure to BDZ 181 M 275 F 15 U 471 Total*	Calls requesting information only about BDZ 274 M 205 F 797 Unk. 1276 Total	No
Age distribution	Deaths with BDZ toxicology 1 10-19 ( 0 M 1 F) 11 (20-29) ( 8 M 3 F) 26 (30-39) (15 M 11 F) 9 (40-49) ( 5 M 4 F) 5 (50-59) ( 3 M 2 F) 3 (60-69) ( 1 M 2 F) 1 (70+) ( 1 M 0 F)  Deaths caused by BDZ 1 10-19 ( 0 M 1 F) 3 (20-29) ( 2 M 1 F) 7 (30-39) ( 5 M 2 F) 1 (40-49) ( 0 M 1 F) 2 (50-59) ( 1 M 1 F) 1 (60-69) ( 1 M 0 F) 1 (70+) ( 1 M 0 F)	38 Unk. (13 M 19 F 6 U) 28 05 (20 M 8 F 0 U) 3 612 ( 1 M 1 F 1 U) 48 1349 (24 M 17 F 7 U) 89 2029 (41 M 47 F 1 U) 98 3039 (33 M 65 F 0 U) 110 4049 (30 M 80 F 0 U) 44 5059 (13 M 31 F 0 U) 4 6069 ( 1 M 3 F 0 U) 9 70+ ( 5 M 4 F 0 U)	786 Unk. (25 M 39 F 722 U) 1 0-5 ( 0 M 0 F 1 U) 5 6-12 (4 M 1 F 0 U) 45 1349 (31 M 12 F 2 U) 151 2029 (83 M 49 F 19 U) 152 3039 (81 M 51 F 20 U) 92 4049 (28 M 44 F 20 U) 29 5059 (18 M 3 F 8 U) 12 6069 ( 3 M 5 F 4 U) 3 70+ ( 1 M 1 F 1 U) 1276 Tot. (274 M 205 F 797 U)	No
Overall prevalence of BDZ involvement	10 % of all drug-related deaths caused by BDZs alone or in combination 34% of drug deaths had BDZ present in toxicology	3.6% of all calls about human exposure to poisoning involve BDZ**	10.0% of all calls for information, but not regarding an exposure, involve BDZ*	14.6% of impaired driver tests are positive for BDZ
Prevalence males & females	11 % of male deaths and 9% of female deaths caused by BDZ alone or in combination	3% of male and 4% of female calls about human exposure to poisoning involve BDZ	12% of male and 9% of female calls for information involved BDZ	N/A
Prevalence in elders, gender combined	Deaths with BDZ toxicology*** 50-59 31% 60-69 43% 70+ 25% Deaths caused by BDZs*** 50-59 13% 60-69 14% 70+ 25%	BDZ exposure calls 50-59 11% 60-69 2% 70-79 4% 80-89 2% Tot. 50+ 6%	BDZ information calls 50-59 11% 60-69 10% 70-79 2% 80-89 9% Tot 50+ 10%	N/A

\* Of 25,781 poison center calls, either regarding human exposure (13,091) or for information (12,690), 6.8% involved benzodiazepines.

\*\* The total (471) poison center exposure calls includes 5 calls about exposure which were later confirmed to be non-exposures; age and gender for the non-exposures was not available for this analysis

\*\*\* There are only 27 deaths over the age of 50 in 2002, only 9 with benzodiazepine toxicology, and only 4 deaths caused by benzodiazepines; statistics regarding these populations are potentially subject to small sample bias.

Table 5-E. Characteristics of Submitted MBSG Datasets: Drug Diversion

Characteristic	Maine Attorney General	National Drug Threat Assessment Survey for Maine	Maine Drug Enforcement Agency: Pharmaceutical Arrests & Seizures	DEA Samples at NFLIS (Maine Samples)
Drug "Lifecycle" Stage	Diversion	Diversion	Diversion	Diversion
Timeframe	2002	2001-2002	1998-2002	2002-2003
Unit of analysis	Cases involving prescription drugs	Survey respondents (surveillance informants)	Testing on materials confiscated in arrests and seizures	Testing of materials confiscated
Target population	Criminal cases	Observations of survey respondents	Materials confiscated during arrests and seizures	Materials confiscated
Methodological comments	No data on BDZ specifically No denominator	No denominator	No data on BDZ specifically	Not all confiscated materials are sent for testing
Population size	Not reported	Not reported	Available	1722 tests
Unduplicated?	Unduplicated	Unreported	Not assessed	Not assessed
Gender distribution	No	No	No	No
Age distribution	No	No	No	No
Overall prevalence of BDZ	Not assessed	Not assessed	Not assessed	2.9%
Prevalence males & females	Not assessed	Not assessed	Not assessed	Not assessed
Prevalence in elders, gender combined	Not assessed	Not assessed	Not assessed	Not assessed

## Discussion

According to Health National Prescription Audit Plus (2001 data) benzodiazepines are the 10<sup>th</sup> most common prescription written. Considered benign, by many practitioners, this drug class has widespread use. Age and gender prevalence rates are frequently documented but in limited populations or single payer subgroups of the general population. The MCG survey was initiated to help address this research gap, as well as the shortfall of information related to morbidity, mortality, disposal, diversion, alternative therapies, and a host of other variables associated with benzodiazepines prescribing use and misuse.

### Prevalence of prescriptions among insurance program enrollees

Benzodiazepine use, by both legitimate prescription and diversion, appears to be widespread in Maine. Thanks to the participation of three large health insurance providers (Anthem, Express Scripts, Maine Health Information Center), and Maine Medicaid we now have preliminary prevalence statistics for enrollees in these programs. The prevalence of benzodiazepine prescriptions during 2002 for the private insurance subscribers, age and gender combined, is between 3% and 6% (see Table 7); it is 10% for Medicaid. When the Anthem and Express Scripts enrollees are combined, the total subscribers constitute nearly half of the Maine population (574,582 of 1,274,923). The addition of Medicaid data enlarges the sample so that it represents over 66% of the population of Maine. (Maine Health Information Center is not included because their population total is not unduplicated)

Table 6. Maine Insurance Programs: Benzodiazepine Prescription Prevalence- 2002

Insurance Program	Total Subscribers	Prevalence
Anthem (1)	N=367,907	22,626 6.15%
Express Scripts (2) (includes both continuously and non-continuously eligible)	N= 206,675 <sup>1</sup> n= (8,267)	6825 <sup>2</sup> 3.3 %
Maine Health Information Center (3)	Not unduplicated N= 24,565	1,449 5.9 %
Maine Medicaid (MaineCare) (4)	N=274,179	26,732 9.75%
Totals <sup>3</sup>		
Anthem + Express Scripts + Medicaid	N= 848,761	

1. A random sample of 8,267 was used to calculate prevalence.
2. Projected from the random sample of 8,267.
3. Assumes no individuals overlap between programs

Age and gender patterns among insurance program enrollees

Benzodiazepine prescriptions are more prevalent among females than males (Table 6) and greater amongst middle aged and older adults compared to those under 40 (Table 7). Females constitute about two-thirds of benzodiazepine prescription recipients. Prescriptions for benzodiazepines peak in the age group 40-69, with estimates of 12% of females and 7% of males. The pattern among Express Script enrollees demonstrates a later peak, beginning in the 50's. The Medicaid pattern rises in the 30's, and is about one in five by the 40's, a pattern that continues through to the oldest ages, with females above 20%.

Table 7. Maine Insurance Program Gender Benzodiazepine Prescription Prevalence - 2002

Insurance Program	Female Prevalence	Male Prevalence
Anthem	7.6%	4.44 %
Express Scripts Continuously eligible	3.4 %	2.1 %
Maine Medicaid (MaineCare)	11.98 %	6.86 %

Table 8. Age Distribution of Insurance Program Enrollees Receiving Benzodiazepine Prescription - 2002

Age Group	Anthem	Express Scripts	Maine Medicaid
0-9	0.2%	0.4%	0.3%
10-19	1.0%	0.8%	1.5%
20-29	3.9%	2.2%	8.7%
30-39	6.5%	3.4%	15.0%
40-49	8.7%	3.7%	19.5%
50-59	9.9%	5.9%	19.7%
60-69	10.8%	6.3%	18.8%
70-79	6.9%	9.6%	21.2%
80-89	4.6%	7.8%	21.7%
90+	3.9%	4.2%	22.4%

Benzodiazepine morbidity and mortality

The perception that benzodiazepines are benign is countered in part by data from the Maine Office of Chief Medical Examiner and the Northern New England Poison Center. Using medical examiner data regarding drug deaths during the past 5 years, the

prevalence of drug deaths that are due to benzodiazepines, either alone or in combination is 9% and the number of decedents with benzodiazepine toxicology is 3%. Calls to poison center regarding poisoning exposures due to benzodiazepines constitute about 4% of all poisoning calls. The figures for 2002 are similar, with 34% of deaths having benzodiazepine toxicology and 10% being caused by benzodiazepines.

Calls to poison center regarding poisoning exposures due to benzodiazepines constitute about 4% of all poisoning calls. Calls requesting information about benzodiazepines constitute approximately 10% of all information requests.

Approximately 15% of impaired driver toxicology screens are positive for benzodiazepines. This is an underestimate, due to the fact that the test is a presence/absence screen, which tests positive only at high levels.

The relatively higher rate of benzodiazepine prescriptions among older adults is cause for concern. They are at higher risk of falling and sustaining fractures in those individuals with slowing reaction time or cognitive problems, benzodiazepines can exacerbate deficits already present. The literature suggests elderly are at increased risk of automobile accidents. Older adults also have a higher risk of negative outcomes due to polypharmacy interaction because they are more likely to take more medications and to be seen by multiple health care providers. Polypharmacy rates, in the elderly, contribute to adverse events from drug-drug interaction and cytochrome p450 variations.

### Clinical populations

The MBSG received numerous datasets from clinical settings. Four of the datasets included a denominator, or clinical census total, for the time period for which they reported benzodiazepine prescription frequencies (Table 6B). Data from Northeast Occupational Exchange, an outpatient mental health services provider, indicated that 7.8% of their 2002-2003 clients were issued a prescription for a benzodiazepine. The Maine State Office of Substance Abuse outpatient admissions statistics indicated that 0.4% of admissions were for benzodiazepine dependency. The Discovery House, a methadone clinic, which provided data on their urine screens from 1996-2003 showed 18.1% were positive for benzodiazepines and 7.6% had a known prescription.

### Corrections populations

Data were received for all state and county corrections inmates (Table 6-C). The State Corrections population reported 3.5% of inmates had a benzodiazepine prescription. County jail prevalence rates (seven out of sixteen counties reporting) of benzodiazepine prescription ranged widely from about 3% to 22%. County jail population health care is managed by a variety of provider companies which have differing policies. Among 1769 county jail inmates in eleven counties, the benzodiazepine prescription rate overall was 5%. Of eleven reporting county jails, nine reported the source of prescriptions. Of 89 prescriptions for which there were data on prescription source, only 16% were prescribed after the inmate was incarcerated.

## Drug diversion

Law enforcement attention, related to prescription drug diversion, has focused on opioids, less so on benzodiazepines. This may be due to a perception that drugs in this class are not as harmful as other drug classes. About 8% of the national drug seizures sent for testing to NFLIS were positive for benzodiazepines (Table 6), however Xanax is the number one prescription drug identified. Commonly used in association with opioids, according to the literature and the toxicology of Maine drug overdoses, benzodiazepine diversion, misuse and abuse needs more research and treatment initiatives. The presence of benzodiazepines enhances risk of injury and death when used in combination with opioids and/or alcohol.

## Conclusions

The MBSG research confirms the importance of benzodiazepines as a longstanding issue contributing to morbidity and mortality associated with prescription drug usage. The literature on drug use and abuse, including the datasets gathered here, points to increased risks connected with polydrug use for both licit and illicit use. The prevalence of benzodiazepine prescriptions among Maine private insurance and Medicaid enrollees is between 3% and 10% across all ages. However, rates are higher in males and those above the age of 40. Among Medicaid enrollees, the prevalence in older age groups exceeds 20% for women with rates in males slightly below 20%. Prevalence in the larger corrections populations exceeds the private insurance enrollee estimates.

Less than 1% of outpatient substance abuse admissions in Maine are explicitly for benzodiazepine dependency. Among the clients of one mental health provider, which provides a wide range of mental health services for all ages, 8% had a benzodiazepine prescription, a rate between private insurance and Medicaid enrollees. Among urine tests for clients of one methadone clinic, 7.6% were associated with a known benzodiazepine prescription.

In Maine, illicit benzodiazepine use and abuse statistics are not well differentiated from appropriate medical use. Among thousands of benzodiazepine-positive urine tests taken from methadone clinic clients, 10.5% were not associated with a known prescription at that facility, but they may have had legitimate prescriptions from other providers even though all prescribers were reported to qualify for methadone. However, the high prevalence of more than 10% suggests some illicit use. Similarly, urine screens on impaired drivers reveal 14% are positive for benzodiazepines, substantially more than would be expected based on rates in insured populations. Among all types of poison center calls, 6.5% involved benzodiazepines: 3.6% of calls regarding poisoning exposure and 10% of calls requesting information were associated with benzodiazepines. Research on the drug-related deaths over the past five years demonstrated that 3% of decedents had benzodiazepines in their systems. Approximately 9% of the drug deaths were caused by benzodiazepines, either alone or in combination with other drugs and/or alcohol.

Benzodiazepine use increases risk number of areas, including:

- a. motor vehicle operation safety
- b. falls among elderly
- c. benzodiazepine dependency
- d. accidental overdose and death
- e. polypharmacy complications
- f. memory impairment

Despite these increased risks, there are significant information gaps regarding benzodiazepines use. These gaps are most salient in terms of drug manufacture, marketing, distribution, internet sales, and waste stream. However, there are also gaps in our data related to the following:

- a. consistency across datasets
- b. need for longitudinal assessment
- c. lack of information regarding misuse
- d. lack of systematic data regarding prescribing patterns (including long-term treatment indications and therapeutic choices)
- e. data regarding drug diversion

The higher prescription prevalence with older adults and females suggests the need for a closer examination of the clinical contexts and outcomes for these populations. The complex associations of prescribed and illicit use seen in drug classes other than benzodiazepines, suggests this a need to examine benzodiazepines in a similar manner. In addition, benzodiazepines, which are often used in combination with drugs from other classes, suggest a complex relationship requiring detailed study.

Analysis of the data from the 2003 survey is ongoing. These data contain additional information related to the specific benzodiazepine prescribed as well as toxicology reports from drug deaths.

Though the contents of this white paper are drawn primarily from information gathered within the state of Maine, the MBSG believe the data point to the need to initiate pharmacovigilance and pharmaco-economic programs. The group accepts that no single intervention is indicated likely to be beneficial and that the complex nature of benzodiazepine use suggests a multi-level approach for estimating the scope of the problem, developing recommendations to improve prescribing, and providing alternative more effective treatments.

## First Annual Maine Benzodiazepine Conference - 2003

In September 2003, the MBSG convened the First Annual Maine Benzodiazepine Study Group Conference: Information for Action in Bangor, Maine. In addition to the MBSG participants, the conference invitees included a multidisciplinary group of interested service providers, administrators, academic researchers, and community members.

Prior to the conference, the MBSG identified four focus areas to guide conference discussion: (a) assessment and data analysis; (b) education and practice guidelines; (c) drug abuse; and (d) benzodiazepine use in older adults. Break-out sessions targeted these four topics and yielded specific sets of recommendations. Summaries of the recommendations were prepared by the discussion leaders and are provided below. These summaries are preliminary and subject to revision and should not be quoted or otherwise used without permission from the subgroup members.

In addition to the four core topics all conference attendees were asked to indicate their priorities from a broader list of benzodiazepine related issues. Participants chose a value on a scale from 1-10, with 10 being the highest priority. Table 8 summarizes the results. The topic "Elderly" received the highest average priority, followed by "Further stakeholder identification and participation." Three tied for the 3rd rank: "Outdated prescription returns," "Alternative Therapies," and "Parent, teacher & child training." Ranking 4<sup>th</sup> was "Data collection." In 5<sup>th</sup> place were "Sources of funding" and "Pharmacovigilance and pharmacoepidemiology."

Overall conference recommendations included:

- continuation of the multidisciplinary collaboration through the MBSG meetings
- continue, expand and refine data collection and monitoring
- continue the focus on elders and undertake fundraising for research project
- continue the focus on practice guidelines and practitioner/community education
- continue efforts to expand participation

Table 9. Priority Rankings of Working Issues and Tasks by Conference Attendees

Rank	Working Issues and Tasks	Average Priority
1	Elderly	9.14
2	Further stakeholder identification and participation	7.20
3	Outdated prescription returns	7.00
3	Alternative therapies	7.00
3	Parent, teacher & child training	7.00
4	Data collection	6.50
5	Sources of funding	6.00
5	Pharmacovigilance and pharmacoepidemiology	6.00
6	Policy, program and legislative recommendations	5.87
7	Counterfeit pharmaceuticals/pediatric legislation	5.66

7	Prescription monitoring program	5.66
7	Drug driving	5.66
8	Pharmacological/environmental testing	5.33
9	Dependence prevention	5.20
10	Green prescriptions	5.16
11	Morbidity and mortality	5.00
11	School controlled substance storage and regulation	5.00
12	Prescription drug abuse task force development	4.75
13	Diversion	4.66
14	Clinical auditing	3.75

### Education and Guidelines Subgroup

Maine Benzodiazepine Study Group's Annual Conference  
 Subgroup on Education and Guidelines to Improve Use of Benzodiazepines  
 Summary Statement  
 September 29<sup>th</sup>, 2003

Contact person: Trip Gardner.

The use of education and guidelines to improve use of benzodiazepines was discussed in a subgroup as part of the Maine Benzodiazepine Study Group's Annual Conference. After dissemination of pertinent literature, the subgroup followed a structured dialogue consisting of the following subject areas: general review of changing prescribing practices, exploration of possible interventions, outline of an intervention plan for Maine, and the need for sufficient alternative treatment to benzodiazepines.

In reviewing the literature surrounding changing prescribing practices it seemed that the most positive effects have come from audits, supervision, and group processes. Other interventions without audits and supportive supervision were thought to represent a significantly smaller chance of effecting positive change. The use of state guidelines for appropriate benzodiazepine use combined with non-punitive audits, supportive education, and scheduled follow up was offered as a recommendation for an initial step in changing prescribing practices.

Mechanisms for the development of clinical guidelines were discussed. Examples from Colorado, "Colorado Guidelines of Professional Practice for Controlled Substances"<sup>2</sup>, Missouri, "A Guide to Prescribing, Administering and Dispensing Controlled Substances in Missouri"<sup>3</sup>, and the United Kingdom, "Guidelines for the Rational Use of Benzodiazepines - When and What to Use"<sup>4</sup> were reviewed. The subgroup recommended that a State of Maine Benzodiazepine Prescription Use Task Force be formed for the purpose of developing clinical guidelines, disseminating the information, designing an audit correlated with the guidelines, implementing the audit, offering supportive education, and scheduling follow up. The membership of this group should have broad representation from the stakeholders. Membership should include the

following: Maine professional societies for physicians, nurse practitioners, physician assistants, nurses, dentists, psychiatrists (and child), family physicians, emergency room physicians, pharmacists, psychologists, social workers, consumers; families; Office of Substance Abuse; Department of Behavioral and Developmental Services Medical Director; Department of Human Services Public Health Director; Board of Nursing; Board of Medicine; academia; epidemiology; geriatrics; and insurance. Part of this process should include focus groups to gather information through outreach initiatives.

The subgroup concurred with the literature findings that, to be effective, the guidelines must be: (1) developed with end users; (2) easy to follow; (3) widely disseminated and publicized; (4) reinforced with audit and feedback; (5) evidence based; (6) done with a transparent process; (7) done without financial, political pressure; and (8) adequately resourced. We favor an audit structure that would include an analysis of prescription data that would be shared for peer review, guideline comparisons, and group process. Ideally this audit would be non-punitive, educational and supportive.

The subgroup believes the task force should utilize a parallel process of delivery of guidelines to practicing prescribers and active involvement with trainers and trainees. A strategy shown to be most effective in this area is face-to-face problem-based education focused on common clinical conditions.<sup>1</sup> A subgroup of the task force would be responsible for developing ways to assist educators with uptake and dissemination of relevant information before students begin their practices.

Public education was also felt to be extremely important. A variety of plausible approaches were discussed in recognition that a variety of initiatives would likely enhance success. Concerns were expressed regarding the pharmaceutical industry message in advertising to the public that "it will fix everything." It was felt that a broader based message describing conditions of anxiety and the range of potential treatments might serve to balance the oftentimes one-sided message presented by industry. All committee members agreed that education in schools was a high priority. Consultation with professionals regarding the delivery of public health messages was proposed as the next step.

Other interventions discussed included: establishing independent, evidenced-based medical information centers; public health surveillance systems; and changes in regulations to encourage education around this topic. In addition to the above recommendations, it was felt that the task force should conduct an analysis of the availability of evidence-based alternative treatments to benzodiazepines in all parts of our state. One benefit would be the creation of a directory of services, while the second would be a focus on areas of deficiencies. The need-focused survey could promote the joining of the task force with area stakeholders for the purpose of proposing and promoting realistic solutions.

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3. A Guide to Prescribing Administering and Dispensing Controlled Substances in Missouri; Prepared by the Missouri Task Force on Misuse, Abuse, and Diversion of Prescription Drugs; June 2001

4. Ashton, H; Guidelines for the Rational Use of Benzodiazepines - Men and Women; What to Use; from *Drugs*; 48 (1) 1994; 25 –40 found on <http://noema.org/benzo/benzo.htm>

### Benzodiazepines and Older Adults Subgroup

Maine Benzodiazepine Study Group 5<sup>th</sup> Annual Conference  
Subgroup on Prescription Issues Among the Elderly  
Summary Statement  
September 29<sup>th</sup>, 2003

Contact persons: Lenard Kaye and Bob Gagne.

### Purpose of Task Group

The Benzodiazepines and Older Adults Task Group considered the special implications of data collected on benzodiazepine use and its implications for the well-being of older adults, their families, and their communities. It explored gaps in the research. It identified stakeholders who can play active roles in helping manage risk of benzodiazepine use. It proposed to develop stakeholder-based strategies for the short and long-term to better manage risk, including strategies that advance worthwhile alternatives to benzodiazepines. It offered to help facilitate stakeholder implementation of risk management strategies and help identify funds to underwrite these efforts.

### Consensus Observations

Benzodiazepine indications are over-prescribed inappropriately prescribed to older adults. The data collected to date, appear to underscore the belief that a significant number of benzodiazepine prescriptions continue beyond the 30-day recommended therapy. Too often, they are taken in combination with other medications which leads to increased severe side effects.

- Addiction is often the consequence of long-term benzodiazepine use among older adults.

- Withdrawal therapy is challenging for benzodiazepine-addicted older adults and their caregivers — a challenge for which they, and their health care providers, are often poorly prepared. Withdrawal may not be an appropriate option for some older adults who have been prescribed benzodiazepines for many years.
- The cost of withdrawal therapy versus ongoing benzodiazepine use has not been well assessed and may be a disincentive to health care plans.
- Older adults are prescribed benzodiazepines primarily for generalized anxiety, panic disorder and chronic insomnia.
- Agitation and anxiety, two conditions for which benzodiazepines may have been prescribed, are often exacerbated by long-term use of this class of drugs.
- Other health consequences of long-term benzodiazepine use among older adults include severe falls and driving fatalities.
- Benzodiazepine use in nursing homes is epidemic. Psychiatric behavioral support and other alternatives to benzodiazepine therapy are lacking in the nursing home setting.
- Health care professionals in long-term care facilities, assisted living facilities and the home-care setting are ill-prepared to identify and respond to issues of drug dependency among older adults.
- Health care professionals and researchers have not conducted systematic assessment of the risks and benefits of benzodiazepine use among older adults.
- Inappropriate prescribing increases with the number of physicians an older adult sees and the number of pharmacists she sees.
- With a physician having as little as 10 minutes to meet with an older adult patient, there is little time to conduct a comprehensive review of all current prescriptions.
- If primary care physicians had easier access to mental health services, alternatives to benzodiazepine therapy may be more quickly considered. Alternatively, referring psychiatrists may write a benzodiazepine script that otherwise would have been written by the general practitioner.
- Depression among older adults is poorly understood and under-researched by health care professionals. Many providers view depression as a natural part of growing old.
- A large funding agency isn't likely to provide funds to document a problem we already know exists. It may, however, be more receptive to evaluating various solutions to that problem, especially solutions that decrease health utilization.

Unfortunately, some alternatives may be perceived as increasing health utilization.

- Older adults may be less apt to question their physicians about risks and benefits of prescription medications, whereas “baby boomers” may not hesitate to inquire. Older “baby boomers” are more likely to challenge a benzodiazepine prescription if they feel they are experiencing unwanted side effects.
- Education of patients and health care professionals cannot be the sole strategy for affecting benzodiazepine prescribing and use. Education can be very costly and very difficult to implement. Its track record for changing behavior is, at best, mixed.
- Clinical or practice guidelines, historically, have provoked little behavior change unless health care practitioners receive incentives for their use. This is underscored in the switch to beta blockers.
- The incentive need not be monetary. It may simply be how physicians perceive themselves in comparison to their peers. A physician is likely to change her/his behavior regarding benzodiazepine prescribing if their practice is deemed an outlier.

#### Divergent Observations

- Some participants contended that physician education could be easily accomplished. Others offered that education of family caregivers could result in reduced use of benzodiazepines among older adults.

#### Actions, Issues and Projects to Consider for Further Discussion

- A peer-feedback communication pilot project was recommended. It would require identifying all benzodiazepine prescribers in a particular health plan, including selection of a comparison group and considerations of casemix. Such a study would assess appropriate/inappropriate prescribing practices. Written communications sent to outliers would be undertaken and the project would look to track subsequent modification of benzodiazepine prescribing practices.
- Older adult patients should be needed to bring in all their current prescriptions when they visit the primary care physician. (The general practitioner is responsible for over 70% of benzodiazepine prescriptions.) Physicians and nurses need to be offered incentives to solicit such patient information and then further encouraged to review these regimens with their older adult patients.

- Research on hospital discharges with benzodiazepines scripts should be evaluated.
- The pros and cons of prior-authorization of a benzodiazepine script beyond 30 or 60 days should be evaluated.
- Research on outcomes of long-term benzodiazepine use — falls, auto fatalities, quality of life, impairments— and their costs – is severely needed.

The Task Group recommended that membership be expanded to include family caregivers, older adult benzodiazepine users, senior health care advocates, pharmacists and health plan administrators.

### Drug Abuse Subgroup

Maine Benzodiazepine Study Group's Annual Conference  
Subgroup on Abuse and Misuse  
Young Adults and Adults  
Summary Statement  
September 29, 2003

Contact persons: Jim Hall and Eric Steele.

The breakout session on intentional abuse of benzodiazepines was composed of participants who provided a wide spectrum of experiences and backgrounds. The group included mental health and addiction treatment counselors, emergency room medical personnel, impaired driving offender program staff, state law enforcement officials, a representative from the federal drug intelligence center, educators, and other health care professionals.

All participants contributed to a discussion based on what they were seeing in his or her profession and in their home communities. Participants were also encouraged to identify determinate factors that were contributing to the problem in Maine. These determinate, identified by the participants, became the focus of strategies to begin addressing this emerging problem.

From personal stories, case studies, and anecdotal evidence several key issues emerged. The first being that there is little public awareness of the dangers associated with the misuse, overuse and even intentional abuse of benzodiazepines. Recent news stories on the wide scale abuse of prescription narcotic analgesics such as hydrocodone, oxycodone, methadone, and propoxyphene have critically increased public understanding about the risk of this category of medications. However, benzodiazepines enjoy a safe reputation, primarily because of a general belief that they have a relatively high therapeutic ratio. One critical issue related to risk awareness is the common pattern of abusing benzodiazepines in combination with alcohol and other street drugs. Most deaths related to benzodiazepines often include more than one substance identified in the decedent, and frequently the benzodiazepine is detected at levels well below what may be

considered to be lethal. Thus, dangers associated with their misuse and interactions with other substances may not be understood by the public nor those likely to misuse benzodiazepines. It was agreed, by a majority of the participants, that the proliferation of television prescription drug advertising has contributed to a more casual attitude to prescription medications.

A second issue identified by the discussions was the wide scale availability and relative ease of access to benzodiazepines diverted from legitimate medical use. As schedule IV prescription medications, benzodiazepines are controlled less stringently than medications deemed to have a greater potential for abuse and to which more law enforcement attention ordinarily is provided. Nonetheless, benzodiazepines are diverted and abused. Their diversion has been associated with schemes involving Medicaid and other insurance fraud or may be as simple as doctor shopping in neighboring towns and states. Lack of mental health services in isolated rural areas of the state was also identified as a reason some people may attempt to self-medicate from diverted prescription benzodiazepines.

The third topic to emerge was the absence of intervention strategies to help some addicted to benzodiazepines. There is clear policy for medical personnel, family members, law enforcement, the courts, non-treatment facilities in ways to identify the problem or what to do about it.

Three key strategies emerged in the group's brief time together:

- Limit access to and availability of benzodiazepines.
- Increase public awareness of risks associated with benzodiazepines.
- Promote intervention opportunities in various settings, hospital emergency departments, schools, pharmacies, impaired driver offender programs and employee assistance programs.

### Assessment Subgroup

Maine Benzodiazepine Study Group's Annual Conference  
Subgroup on Future Monitoring of Benzodiazepine Use and Abuse  
Summary Statement  
September 29<sup>th</sup>, 2003

Contact persons: Steva Gressitt and Marcella Sorg.

The "Assessment" subgroup included a broad range of individuals interested in epidemiology, public policy, and law enforcement information generated from the benzodiazepine data; especially as it addressed morbidity, and mortality. The discussion began with a summary of the data that had been submitted or collected as well as their limitations. Most of these characteristics and limitations are summarized earlier in

this document. Data on diversion generally does not include benzodiazepines and may be due to policy decisions, and lack of resources to assess this problem. Toxicology is very expensive and may be limited, even when there is an arrest.

Group participants identified an increased need for methodologically sound benzodiazepine information in the following areas:



- Arrests and seizures
- Motor vehicle accidents
- School suspensions
- Profile of benzodiazepine users
- The association between benzodiazepines and arrests, drug treatment, falls
- Adequacy of the ICD-10
- Chronic versus acute prescribing
- Prescription monitoring program (to begin July 04)
  - o Will include everyone living in Maine who fills a prescription
  - o Will miss illegal sales
  - o Will cover all pharmacies licensed in Maine
  - o Will include only what is in the prescription, not the diagnosis
  - o May or may not have age and gender
- Why benzodiazepines are being prescribed
- Benzodiazepine efficacy as well as misuse, including how much prescribed, how much actually taken, and which particular drugs
- Prescription guideline monitoring data
- Trends in abuse
- Trends in appropriate prescribing among physicians
  - o Focus groups with physicians
  - o What influences a doctor's decision to prescribe
  - o What is inappropriate prescribing (especially for elderly)
  - o How to develop index cases of inappropriate prescribing (can we use insurance data?)

The discussion then focused on the 2002 survey of benzodiazepines. The following recommendations were made:

- Do not add newer drugs, but keep the existing benzodiazepine list
- For prescription data, collect
  - o Age, gender,
  - o Specific drug, dose, and duration
  - o Presenting illness
  - o Characteristics of prescriber and recipients where possible
  - o Respond to other conference break-out groups' needs for data monitoring
- Generate a statement for Dirigo Health: 1-page about the benzodiazepine problem
- Continue to participate in the Maine Community Epidemiology Surveillance Network
- Continue to search for information on counterfeit drugs
- Work to develop interest in a drug return with the MMA

- Attempt to replicate the “Green Prescription” program from Canada
- Develop a benzodiazepine “risk profile”
- Search for funding sources

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