

Patterns of Drug Use in the Older Chronic Pain Population



L. Burke, PhD, MBA, RN; M. Fay, PharmD, MBA
Ameritox, LTD., Baltimore, MD

Introduction

Older adults [≥50 years of age (YOA)] and the elderly (≥65 YOA) are the fastest growing sectors of the US population and also one of the largest groups of chronic pain patients (Kaye, et al 2010; Kalapatapu, 2010; SAMHSA 2011). The prevalence of chronic pain is expected to increase in older adults (Robeck, 2012), and many patients with chronic pain are prescribed chronic opioid therapy (COT) to manage their symptoms. While COT is often an effective treatment for pain management, prescription opioids have been associated with a number of risks to patients, clinicians, and society. The 2011 issue of the Centers for Disease Control and Prevention's *Morbidity and Mortality Weekly Report* indicated that worsening rates of overdoses and adverse events related to opioids is creating a complex public health crisis (MMWR 2011). It also was estimated that the number of older adults (age 50 and older) in need of substance abuse treatment will increase from 1.7 million in 2000-2001 to 4.4 million in 2020. This is due to a 50% increase in the number of older adults and a 70% increase in the rate of substance abuse treatment needed among this population (Gfroerer, 2003). Because of the associated risks of COT, clinicians typically use a number of risk mitigation strategies and/or universal precautions that often include urine drug monitoring. Data suggests it is difficult for clinicians to assess whether patients are adherent to COT based solely on clinical impressions and assessment of aberrant behaviors (Katz, 2002). While older adults are often viewed as a more compliant patient population that is less likely to utilize illicit drugs and less likely to intentionally abuse or divert their medications, they are still at risk for medication misuse. The purpose of this study was to evaluate patterns of drug use in the older adult chronic pain population by examining urine drug monitoring results.

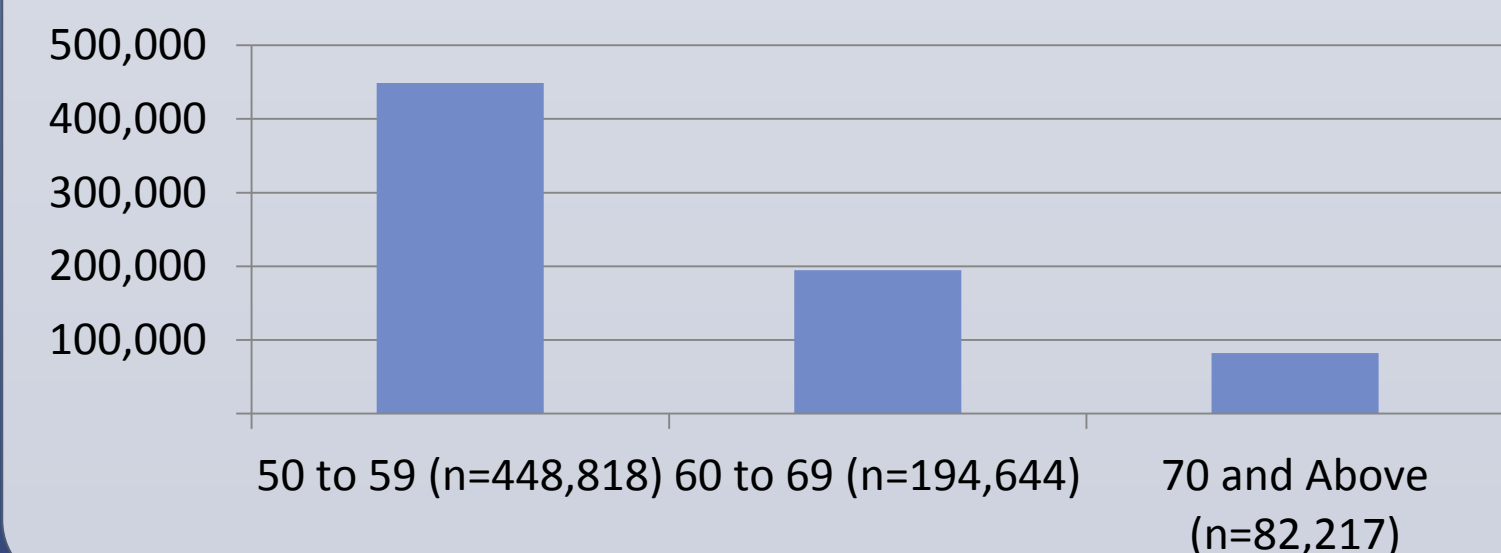
Methods and Design

A retrospective review was conducted on a database of urine drug monitoring results from samples submitted to AmeritoxSM for patients ages 50 and above from October 1, 2009 to September 30, 2011. Descriptive data was collected including age and gender, along with the results of urine drug monitoring. The results of urine drug monitoring were categorized as follows: an illicit drug found, a non-prescribed drug detected, a prescribed drug not detected, and no abnormality found. The categorization of results was determined based on a reconciliation of the medication list submitted to AmeritoxSM by the ordering clinician and the urine drug monitoring results.

Results

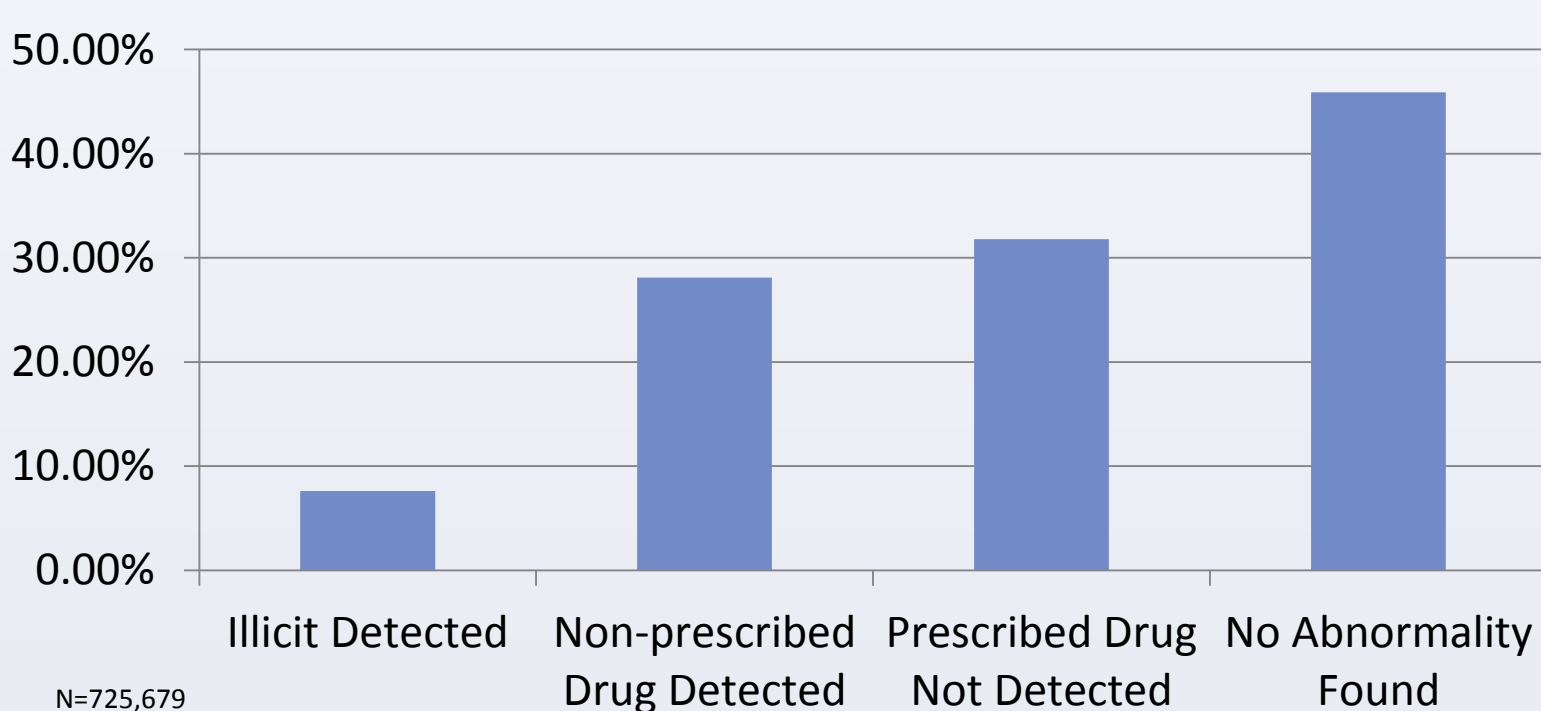
From October 1, 2009 to September 30, 2011, a total of 725,679 urine samples were received by AmeritoxSM from individuals ≥50 YOA.

Graph 1. Samples by Age



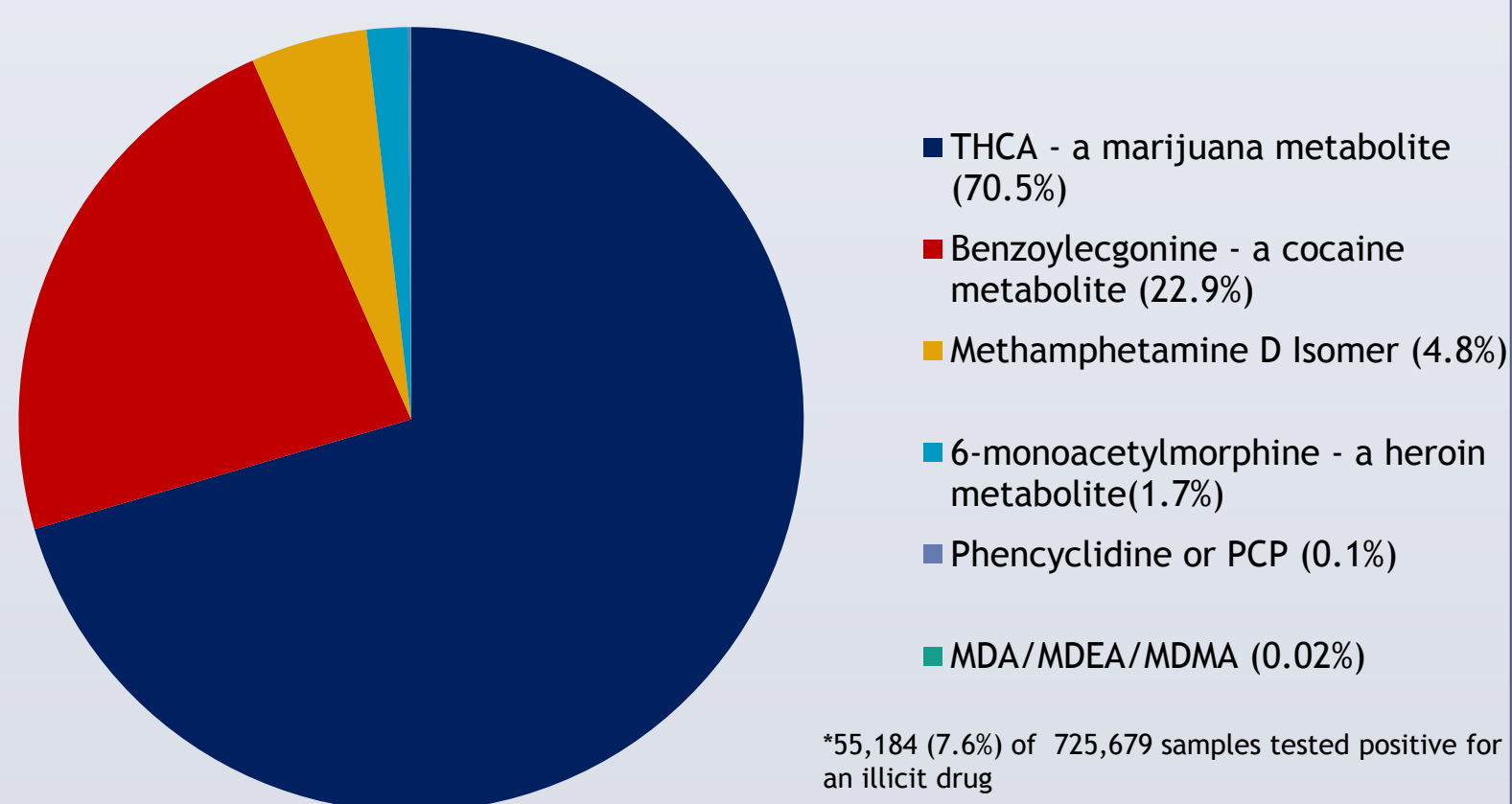
Results (Cont.)

Graph 2. Aggregate Test Results in Individuals ≥50 YOA



Note that all categories add to a total greater than 100% as a single sample can fall into more than one category.

Graph 3. Breakdown of illicit drugs detected in individuals ≥50 YOA*



*55,184 (7.6%) of 725,679 samples tested positive for an illicit drug

Note that a sample could be positive for more than one illicit drug

Table 1. Classification of drug and metabolite

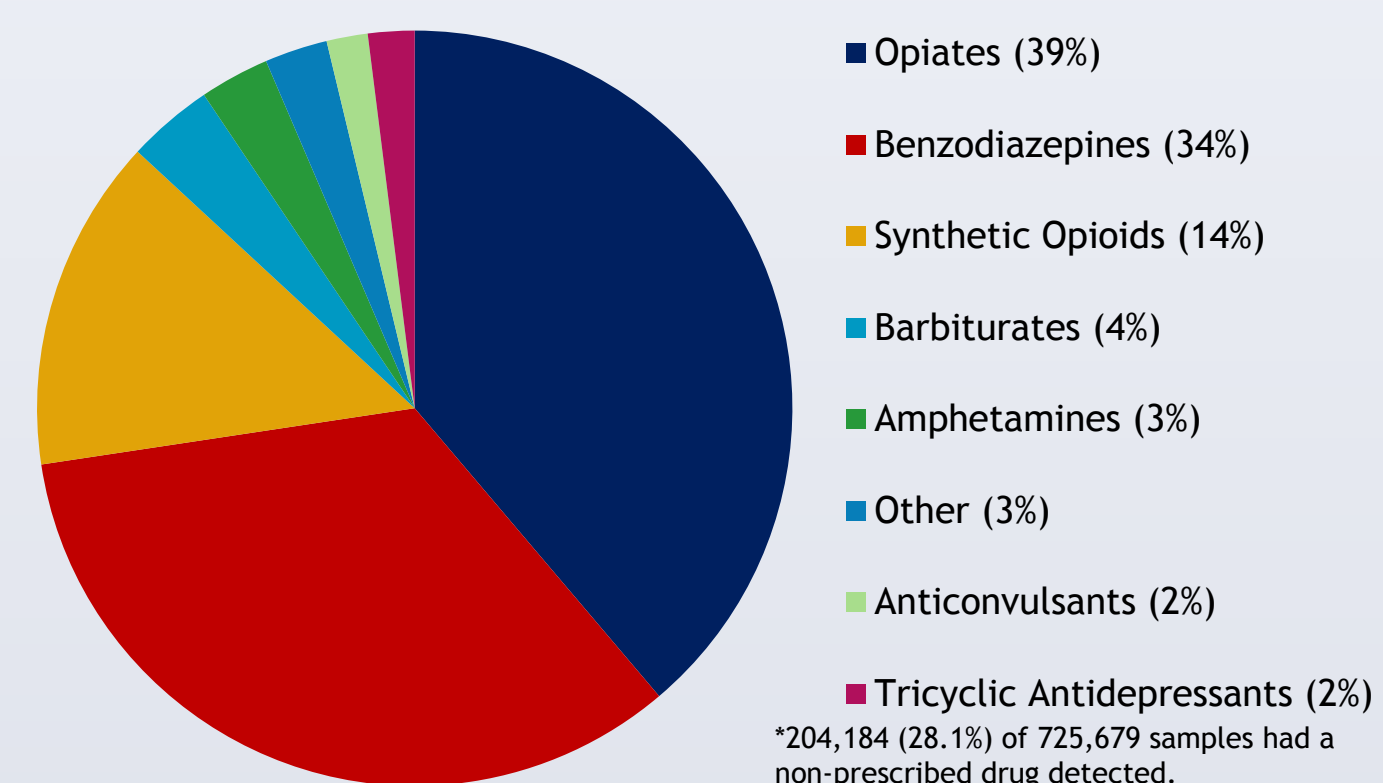
Opiates	Synthetic Opioids	Benzodiazepines	Barbiturates
Codeine	Methadone	7-aminoclonazepam	Butalbital
Morphine	EDDP	Alpha-hydroxyalprazolam	Pentobarbital
Hydrocodone	Fentanyl	Alprazolam	Phenobarbital
Hydromorphone	Norfentanyl	Lorazepam	Secobarbital
Oxycodone	Meperidine	Nordiazepam	
Oxymorphone	Normeperidine	Oxazepam	
	Propoxyphene		
	Norpropoxyphene		
	Tramadol		
	O-desmethyltramadol		
	Tapentadol		
	N-desmethyltapentadol		
	Buprenorphine		

Results (Cont.)

Table 1 (Cont). Classification of drug and metabolite

Tricyclic Antidepressants	Amphetamines	Anticonvulsants	Other
Clomipramine Nortriptyline Desipramine Doxepin	Amphetamine Methamphetamine	Gabapentin Pregabalin	Ritalinic Acid Meprobamate Cyclobenzaprine

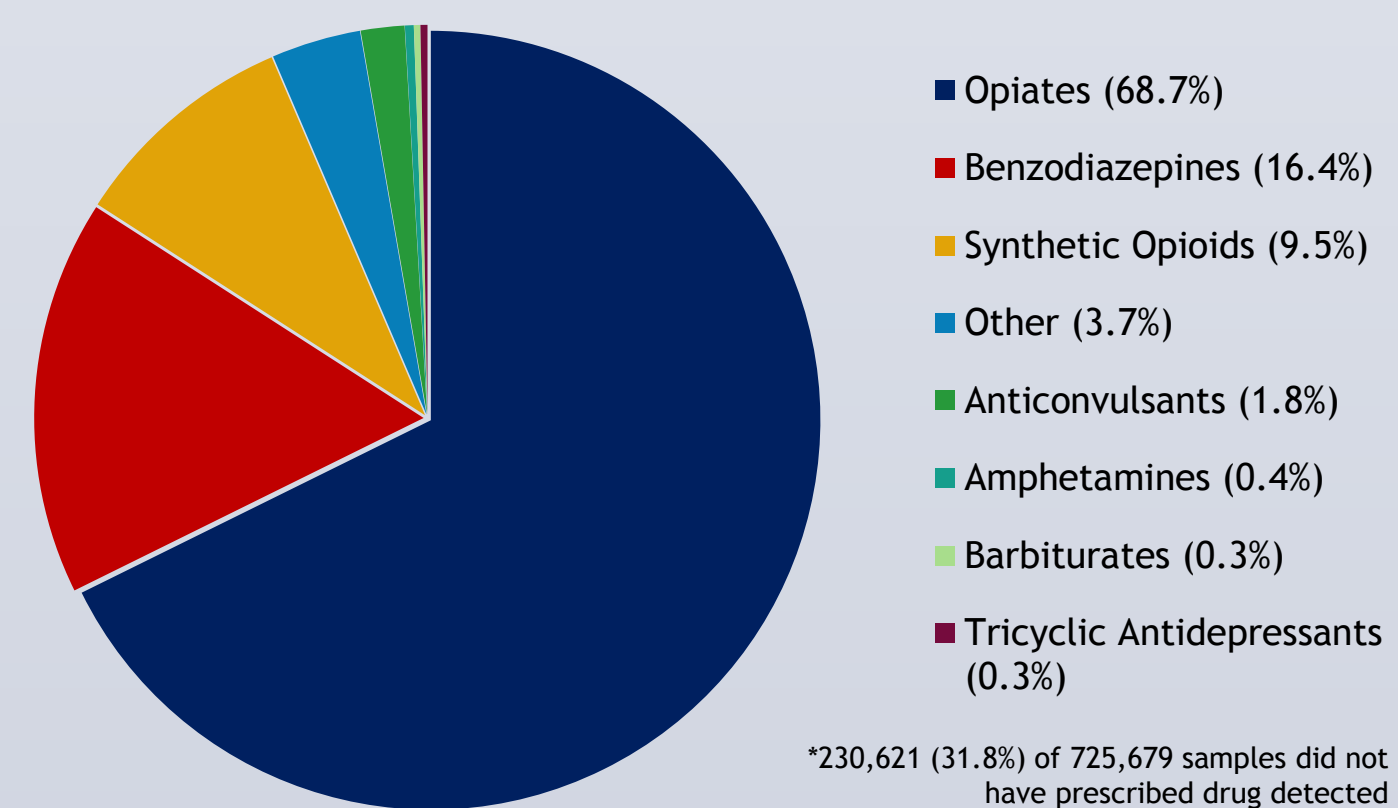
Graph 4. Breakdown of non-prescribed drug detected according to drug class in individuals ≥50 YOA*



*204,184 (28.1%) of 725,679 samples had a non-prescribed drug detected.

Note that a sample could have more than one non-prescribed drug detected. A non-prescribed drug is defined as one that was not reported on the prescribed medications list submitted to AmeritoxSM on the lab requisition form. A sample was classified as non-prescribed drug detected if a parent and/or metabolite of a non-listed drug was found.

Graph 5. Breakdown of prescribed drug not detected according to drug class in individuals ≥50 YOA*



*230,621 (31.8%) of 725,679 samples did not have prescribed drug detected

Note that a sample could have more than one prescribed drug not detected. A prescribed drug is defined as one that was reported on the prescribed medications list submitted to AmeritoxSM on the lab requisition form. A sample was classified as prescribed drug not detected if parent and/or expected metabolite were not found.

Discussion

This study demonstrated high rates of possible non-adherence in a population of older adult patients being treated with COT. Overall, 7.6% of urine samples in individuals aged 50 years and over were positive for an illicit substance. A non-prescribed drug was detected in 28.1% of urine samples, and the prescribed drug was not detected in 31.8% of urine samples submitted from individuals aged 50 YOA and older. A total of 45.9% of specimens had no abnormality identified. The breakdown of overall results is seen in Graph 2.

Similar to the findings of this study, previous studies have also demonstrated high rates of non-adherence and possible misuse of controlled medications. A 2009 study of more than 900,000 samples from individuals of all ages showed high rates of potential non-adherence (Couto, et al. 2009). The authors found that 11% of samples had an illicit drug detected, 29% had a non-prescribed medication detected, and 38% of samples did not have the prescribed medication detected. Data were not analyzed by patient age. Comparison of the Couto et al. findings with the present study shows only slightly lower rates of illicit drug use and prescribed drug not detected in the older population compared to the general population, suggesting that age may not be a predominate factor in likelihood of misuse or abuse of drugs.

A more recent report of almost 76,000 samples also found inconsistent results in 63% of samples (McClure, et al., 2012). It was noted that 40% of the samples were missing the prescribed drug, 32% of samples had an additional medication found, and 28% of samples had a different drug found than what was expected. When analyzed by age, 59% of patients aged 55-64 and 50% of patients ≥65 YOA had inconsistent test results. The high rates of inconsistent drug test results found by McClure et al. is consistent with the findings of the present study.

Many variables, including age, may impact a clinician's decision to conduct urine drug monitoring. Frequently, older patients are viewed as more adherent, however, the result of this study suggest high rates of possible non-adherence in this population. This data supports the use of routine urine drug monitoring as a tool in managing older patients on COT.

Limitations

These results may not be reflective of UDT in the overall population of COT patients as physicians may test patients suspected of medication misuse more frequently, thereby resulting in possible selection bias. Additionally, it is possible that some patients were monitored for conditions other than chronic pain such as substance abuse or episodic pain managed by short term use of opioids. The dataset reflects unique samples and not unique patients. As categories of urine drug testing results are not mutually exclusive, the samples with multiple abnormal results may be contributing to an overstatement of the problem.

Conclusion

This study which, shows a significant rate of potential non-adherence in the older population, supports the need for routine urine drug monitoring in older adults in order to improve clinical decision making and enhance patient safety.

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