

Evaluating the Difference in Prevalence of Alcohol and Illicit Drug Use in the Construction and Oil and Gas Industry

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Background

- Largest research is based on population based questionnaire survey - National Drug Strategy Household Survey
- NDSHS 2013 Demographic Results¹ :
 - ❖ 42% lifetime prevalence of AOD and 15% in the 12 mths prior.
 - ❖ Most common illicit drug use – Cannabis 35% , Hallucinogens 11%, Amphetamines 7%
 - ❖ Age group and sex

1. Australian Institute of Health and Welfare. 2004 National Drug Strategy Household Survey: detailed findings

Introduction

NDSHS by occupational sector results:

- ❖ Hospitality (32%) > Construction(24%)> Agriculture(16%)> Mining(12%)
- ❖ Trades person and unskilled workers > professionals

Other research findings:

- ❖ Pick, Boeckman et al on South Australian Building Industry ²
- ❖ Banwell, Quinn et.al on ACT Building industry ³

2. Pidd K, Boeckmann R, Morris M. Adolescents in transition: The role of workplace alcohol and other drug policies as a prevention strategy
3. Banwell C, Dance P, Quinn C, Davies R, Hall D. Alcohol, other drug use, and gambling among Australian Capital Territory (ACT) workers in the building and related industries.

Study Description

Type of study

- ❖ Cross sectional observational study
- ❖ Construction and Oil and Gas (Mining) Industry
- ❖ Based on on-site drug and alcohol random screening

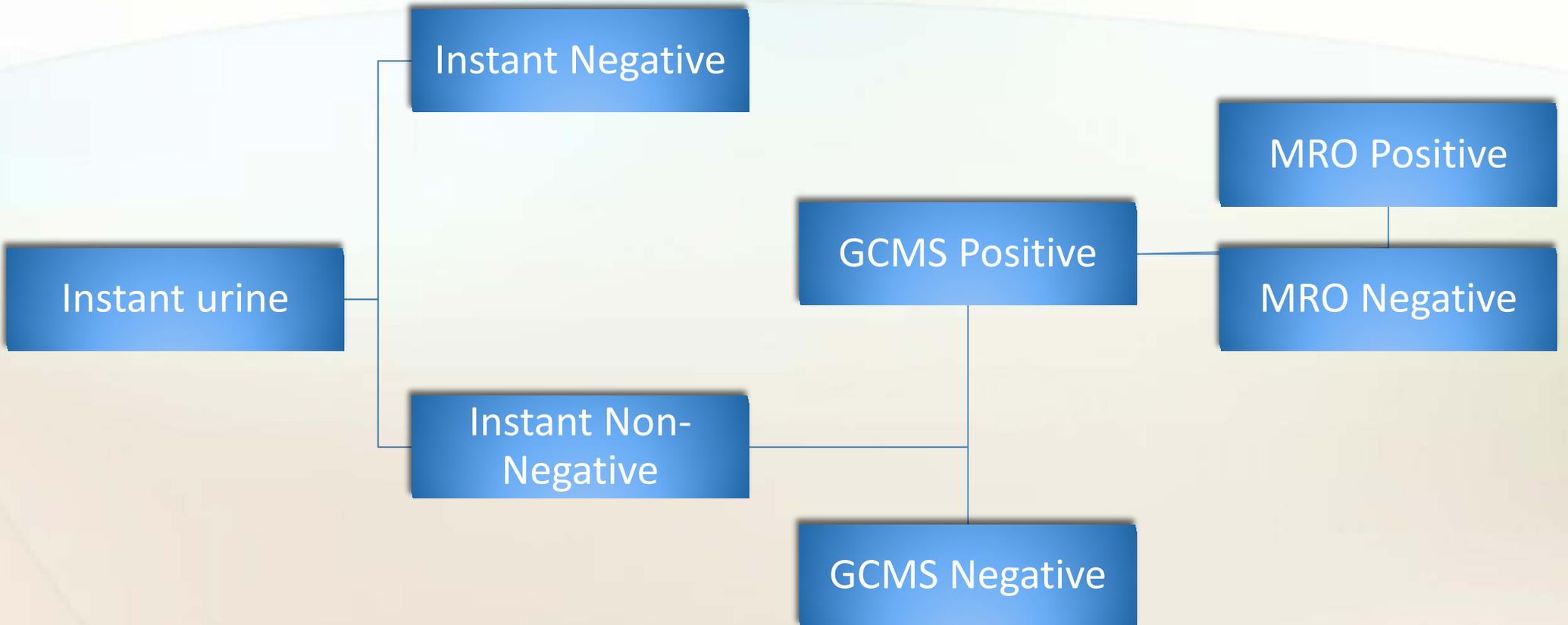
Objectives

1. Null hypothesis – there is no statistically significant difference in the prevalence of illicit drug use in construction and oil and gas workers
2. To compare results of AOD positive cases in terms of demographics and type of illicit drug use
3. Financial cost of AOD testing

Methods

- ❖ Sample population
- ❖ Screening procedure –sampling, labeling, transport and analysis

Urine Collection Procedure



Data Analysis

Confounders:

1. Age
2. Sex
3. Occupational title

Analysis:

1. Prevalence of MRO Verified Positive results
2. Type of illicit drug
3. Age, sex and occupational title of MRO Verified Positive Result

Data Analysis

Confounder Adjustment

1. Age Group : Stratification
2. Sex and Occupational title : Matching, equally matched in both sample population

Statistical analysis

- ❖ Measure of Association : Chi Square 2 tailed P –value analysis and Fisher Exact 2 tailed P value analysis
- ❖ Adjustment for Age confounding : Mantel –Haenszel method
- ❖ Statistical Analysis : CDC Stat-Calc Software

Results: Demographics

Industry	Total number of subjects	Number of males	Number of females	Median Age
Construction	232	217	15	36
Oil and Gas	257	254	3	39

Results: Age Group distribution

Age Group	Construction		Oil and Gas	
	N	%	N	%
18-29	73	31	37	14
30-39	60	26	92	36
40-49	46	20	75	29
50-59	32	14	38	15
>60	21	9	15	6

Results: Prevalence of MRO Verified

Positive result

	Neg Instant	Non-Neg Instant	GCMS Confirmed Pos	MRO Verified Pos	MRO Verified Neg
Construction	202	30	28	20	8
Oil and Gas	245	11	10	1	9

Age Group	Number of MRO Verified Positive test
18-29	9
30-39	6
40-49	4
50-59	1
>60	1

MRO Verified Positive Results

Type of illicit drug

Of the 21 samples of MRO Verified positive results

- ❖ 17 – THC
- ❖ 4- MET

Gender differences

- ❖ 20 out of 21 – males

Cost of implementation of program

- ❖ \$90 per employee per instant cup screen
- ❖ \$180 per analysis that requires further GCMS testing

Null hypothesis test

Age Stratified Measures of Association	P -value (2 tailed)	
	Uncorrected chi square	Fisher Exact
Age Group: 18-29	0.02582	0.02091
Age Group 30-39	0.01039	0.03088
Age Group 40-49	0.009403	0.03842
Age Group 50-59	0.2735	0.9143
Age Group >60	0.3194	>0.999
Un-stratified (Crude Values)	0.000003936	0.000002414
Adjusted Mantel Haensel Summary	P-value (2 tailed)	
Chi Square	0.000011116	
Fisher Exact	0 .000003573	

Discussion

Industry and Occupational Title Difference

- ❖ Construction vs. Oil and Gas – Rejects the null hypothesis

Gender and Age Differences

- ❖ Consistent with NDSHS results

Prevalence of MRO Verified Positive Drug Screen

- ❖ Significantly lower compared to findings from NDSHS
- ❖ Extrapolated implications

Discussion

Cost Benefit Analysis

- ❖ Due to differences in numbers screened, cost per employee slightly lower in Construction
- ❖ Overall cost vs Return of Investment from deterrent effect

Strength and Weakness

Strength

- ❖ Methodology

Weakness

- ❖ Sample size
- ❖ Only 2 companies
- ❖ Duration of study

Conclusion

Findings from this study which is consistent with the NDSHS data includes :

- ❖ Higher prevalence of AOD use in males and in the 18-29 age- group.
- ❖ Marijuana and amphetamines are the most common type of AOD used.

Key findings from this study are:

- ❖ Prevalence of AOD in Mining industry is statistically significantly lower than Construction
- ❖ Occupational prevalence rate of AOD use in this study is significantly lower compared to the NDSHS.
- ❖ Cost benefit analysis of AOD screening – requires further investigation