**Evaluating a Screening Programme and the Likely Implications of a**

**Specific Workplace**

# Introduction

# Screening as it relates to drug and alcohol use entails the determination of the prevalence of alcohol and drug use by employees in an organisation. The determination of the extent of drug or alcohol use is paramount in determining possible causes of risks. Safety of employees is fundamental to ensuring set objectives are met within stipulated schedules, especially in workplaces where workers use machines and equipment that need precision and accuracy. In such environment, any mistake can cost an organisation heftily; such instances include where machines are commanded and solely dependent on human labour for performance of tasks such as driving, computation, and commanding. There are various tests that can be administered to employees to determine employees’ alcohol or drug use.

# Types of screening programmes

# There are five main tests that can be adopted:

# Breath test is mainly used to show the alcohol levels in an individual’s blood. Alcohol concentration in the blood can be indicated by the alcohol concentration in the air as the two are correlated (Pidd & Roche, 2011). The correlation exists as the alcohol absorbed into the bloodstream evaporates and moves across the membranes of the lungs’ alveoli into the air breathed out. When an individual breathes on an intoximeter breathalyser, results of testing positive or negative for alcohol use can be obtained.

# Urine tests can be carried out to indicate presence of drugs if an individual has used them for duration of up to 8 days and alcohol for time less than 8 hours (Marques, Vasco, Serafín, Olea, Vairinhos, & Jacinto, 2014).

# Saliva (oral fluid) tests that are administered to indicate whether the level of drug used presently is high or low. Presence of drugs in saliva can best be noted when the drugs have been taken within 48 hours (National Centre on Substance Abuse and Child Welfare / Substance Abuse and Mental Health Services Administration, 2015). This can majorly be used when there are occurrences that need to check whether an individual had been intoxicated prior to an accident of an incident.

# Blood tests can also be administered as they can be very accurate compared to other methods.

# A hair strand test is conducted by obtaining a strand of hair from an individual. It is a good method for testing substance abuse for long periods, especially exceeding three months; it is based on the premise that, as the hair grows, the drugs are transported to the hair follicle by the blood stream as blood circulates through the body ([Derges](javascript:;) et al., 2018). When testing for alcohol, the presence of ethyl glucuronide and fatty ethyl esters in one’s hair strand indicates alcohol use as the two are the specific alcohol makers (World Health Organisation, 2017).

# Screening can be done in the workplace that is on-site or in a laboratory. Onsite analysis uses Point of Collection Test (POCT) devices whose reliability and accuracy are less compared to laboratory analysis (Pidd & Roche, 2011).

# Benefits of monthly screening programmes to an organisation

# Screening benefits to an organisation are great as the process can save an organisation from liability caused by employees’ negligence whilst discharging their duties due to drug and alcohol use. According to Pidd & Roche (2011), the correlation between drug and alcohol use and accidents in Australia has not been examined despite the Emergency Department having 24.2% of their incidents at industrial sites, testing positive for drug or alcohol use. Where screening has been conducted, employees working with machines and equipment such as forklifts, if under alcohol or drug influence, are more disposed to having accidents in the course of their duty. According to Marques et al. (2014), employees need more screening when they are working in conditions that make them easily disposed to accidents. By evaluating, the cost of compensating employees due to accidents may be higher than conducting screening sessions.

# According to Degenhardt and Hall (2012), the use of drugs and alcohol is a threat to work safety. Accidents and negligence can easily increase as those using the substance may have change of action rapidly. This, according to Strang, Babor, Caulkins, Fischer, Fozcroft & Humphreys (2012), has made countries and organisations have alternative means of coping with such situations by having their employees screened regularly. Accidents caused can be reduced as screening ensures that those identified to be under drug or alcohol influence can be suspended.

# An organisation that carries out regular screening can easily identify the causes of loss of productivity of its employees. Where employees are into alcohol and drugs, productivity may decline gradually as one gets affected by the substance he or she is consuming. This may be evident in instances where the workers may start being absent from a job where, previously, they did not under unreasonable reasons. According to Pidd & Roche (2011), there is a relationship between the quantity of alcohol consumed and the number of times one may be absent from a job. Absenteeism greatly reduces an employee’s productivity as unattended duties accumulate causing stress to those using alcohol or drug, eventually pushing one to more consumption of it (Bacharach, Bamberger & Biron, 2010). Pidd & Roche (2011) further assert that most alcohol-related issues are absenteeism, health problems, poor safety, and poor quality work. Screening enables an organisation to note causes of some problems that employees may exhibit, enabling it to take corrective measures prior to catastrophic losses (Dale & Livingston, 2010). The knowledge of employees that screening is to be done may deter drug or alcohol consumption.

# Downsides of monthly screening all employees in this organisation

Screening entails use of different kinds of equipment that may require specimens from employees. The collection of these specimens on a regular basis may, at times, be a bother and irritating to some employees; finding a balance in the manner in which they can be less irritating becomes important. Specimen such as blood may make an individual hesitant compared with saliva, hair, or urine. According to Pidd & Roche (2011), acceptability of a screening programme is pivotal to the success of the organisation, whether the attitudes are negative or positive. Attitudes are important as they form the levels of employee commitment, job satisfaction, and performance and turnover intentions (Bacharach, et al., 2010). If employees view the entire screening process with negativity, the effect would be loss of working morale, affecting productivity in the long run.

When screening employees for drug or alcohol use, the results can be false positive or false negative; such can create attitude on employees if wrongly interpreted (Strang, Babor, Caulkins, Fischer, Fozcroft & Humphreys, 2012; Klimas et al., 2012). The attitude created, if negative, can easily lower staff morale, reducing productivity. The POCT and lab results analysis at times differ with POCT, at times being inaccurate, though fast and less costly; this may cause employees to be implicated to be on drugs or alcohol where they may not (Moyer, 2013). These cases may exist where one, initially, may have used drugs and ceased to use them. Where such a case occurs, an employee may feel offended and eventually develop a negative attitude towards the organisation.

The screening process may downplay the efforts of staff towards an organisation where the screening process may be viewed as a tool of dismissal (Dale & Livingston, 2010). In such a case, the entire introduction process of the screening procedure may be resisted as employees will take it as a coercive process for job termination. Where the process is mainly aimed at rehabilitation, the employees are likely to welcome it, since they would perceive it as a positive gesture of the organisation towards employee welfare. It is notable that, despite the screening to reduce injuries and accidents and to improve general safety in the workplace, research indicates that screening does not entirely increase work safety but is, rather, a deterrent to alcohol or drug use (Macdonald, Hall, Roman, Stockwell, Coghlan & Nesvaag, 2010).

# The company’s test claim of 95% accuracy

The determination of drug or alcohol use is important as employees require to be addressed with factual information. Having accuracy of 95% depends on the parameters correctly classified as positive or negative of all test results being expressed as a percentage (Pidd & Roche, 2011). Accuracy thus indicates how good a test is wholly by considering sensitivity and specificity. It is determined as indicated in this formula:

Accuracy (%) = {true positives (a) + true negatives (d)} **/** {true positives (a) + false positives (b) + false negatives (c) + true negatives (d)}

Where, for instance, if there are 200 samples, a test that classifies 10 samples as positive for drugs (true positives), correctly classifies 160 samples as negative for drugs (true negatives), and incorrectly classifies 20 samples as being positive or negative (false positives or false negatives) would have accuracy of 90%; i.e. , {20 (a) + 160 (b)} / {20 (a) + 10 (b) + 10 (c) + 160 (d)} = 180/200 = 90%

# Further investigation into drug and alcohol screening tests of a company whose test has shown to be quite reliable, with 95% sensitivity and 86% specificity

Results that have a sensitivity of 95% indicate that the test is good at identifying the drug use (Pidd & Roche, 2011). It is expressed as a percentage of true positive values to all actual positive cases. When higher than 90%, it indicates that the test is more accurate.

Specificity indicates how good a test is at identifying individuals who do not use drugs (Pidd & Roche, 2011). It is expressed as a percentage of true negatives to all actual negative cases. Specificity above 90% is acceptable as the required minimum accuracy; in this case, it was lower. If a POCT had been conducted, further tests could be done, using laboratory analysis.

## Based on other workplace screening programmes, a 0.001% prevalence of drug and/or alcohol use is anticipated in the workplace. Using these values, the positive and negative predictive values, if this test is used in this workplace, will be:

**Table 1: Gold standard**

|  |  |  |  |
| --- | --- | --- | --- |
|  | **Gold standard disease present** | **Gold standard disease absent** |  |
| **Test positive** | True positive (TP) a | False positive (FP) b | Total test positive: a+b |
| **Test negative** | False negative (FN) c | True negatives (TN) d | Total test negative: c+d |
|  | Total disease: a+c | Total normal: b+d | Total population: a+b+c+d |

With a prevalence of 0.001% of drug or alcohol use, anticipation in the workplace can be represented as below for 100 employees.

**Table 2: Drug and alcohol use with a prevalence of 0.001%**

|  |  |  |  |
| --- | --- | --- | --- |
|  | **Gold standard drug present** | **Gold standard drug absent** |  |
| **Test positive** | 95 | 14 |
| **Test negative** | 5 | 86 |
|  | Sensitivity  95/100 | Specificity  86/100 |

The probability, according to the table of every hundred employees to be nonalcoholic or drug users, is 86% as it is the probability of being tested negative. The sensitivity tests show that 95% of the tests will yield accurate results. The use of 0.001% prevalence will lower the number of those associated with drug and alcohol use as it lows.

# What I would recommend as the use of this test as a monthly screening test in the workplace?

Screening, despite being good at ensuring employees adhere to safe work practices to minimise injuries and a company’s liability due to accident, is not appropriate to be done on a monthly basis. Employees, once employed, should have a sense of belonging, not coercion, to screening; however, prior to employment, it should be carried out. Screening should be done under circumstances where supervisors note change in an employee in order to ensure rehabilitation (Levy & Kokotailo, 2011).

According to Pidd & Roche (2011), screening has not been enumerated as a way of improving work safety. The implementation of such a programme can easily draw attention of an organisation to it and its finances, blurring the major strategies it can use to be more profitable and productive.

# Conclusion

Screening is an important activity as it enables employees to take due cares to ensure they remain negative during tests; however, the downsides outweigh the benefits as it is costly to an organisation. Its use can be irregularly mainly when the cause of alarm is there. Employees tend to shun from being noticed to have particular habits, especially relating to substance use due to fear of being victimised during promotions. The effects of screening ought to be communicated well to the employees’ prior implementation. This will make the employees welcome the screening procedure, knowing the need and its importance towards their welfare.

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