Deploying Life by SmartCap

What to expect from your deployment

Contents

A deployment of Life by SmartCap is a genuinely rewarding experience, though not without its challenges. Setting realistic expectations and being adequately prepared is crucial to ensuring successful and sustainable change within your business. This document provides insight into the journey ahead, and shares our proven approach to providing genuine safety benefits.

1 Your unique yet predictable journey

Every mining operation is unique; however, all share a common goal to ensure every mine worker goes home safe, every day. That said, change can be difficult for some, largely driven by a fear of the unknown.

Fortunately, after many years of deploying our solution to mining operations around the world, we've come to learn that most deployments go through the same process. Better still, we've developed tried and tested approaches that have proven successful.

Some members of the workforce will be resistant to your initiative, partly due to the suspicion that a monitoring technology is a tool for discipline. Others may feel that their previously unquantifiable fatigue risk will be revealed as detrimental to ongoing profitable operations. Both concerns are far from reality, yet it is important that individual and collective concerns be respected and addressed.

Our approach includes empowering every stakeholder with real information, realistic expectations, proven tools, and our unmatched experience in training and project delivery.

A key ingredient to success will be your commitment to the deployment and ongoing employee assistance. It is likely that a small percentage of your workforce will exhibit consistent patterns of elevated risk. While small lifestyle changes such as an ensuring an appropriate amount of sleep prior to work may remedy this for some, you can expect that for others the underlying cause may be more elusive. In some cases, subtle lifestyle factors, undiagnosed medical conditions or overall health may be responsible, requiring patience, understanding and shared efforts to discover and resolve.

What follows is more detail about what you can expect from your SmartCap deployment, which we are committed to making a tremendous success.

2 Realistic timing

2.1 Policy Development

Several policies and procedures are required to be put in place to get the most out of a fatigue monitoring safety initiative. Examples include an alarm response process, policies regarding data access and privacy, and possibly a revision of the site fitness for work policy. The SmartCap team have assisted many customers through this process, and have developed templates and guidelines to expedite this process.

Depending on the approval hierarchy within your organisation, you can expect the policy development to take 3-8 weeks.

2.2 Installation

SmartCap equipment is simple to install and configure. The first few installations of a Life Display are expected to require around 1-2 hours each, the majority of which is used to get the installation location right considering other equipment already installed. Once the location and cabling pathways are decided, the installation process requires around 30 mins per truck.

The only other equipment that may be installed is a satellite modem (or other boutique communications solution), which would likely double the installation time.

2.3 Training

Operator training is best delivered in small groups of 10-15 individuals, which also minimises the impact of training on normal operations. Training sessions are often scheduled at the start of shift immediately following a pre-shift meeting. 40-60 minutes should be allocated for training, with an additional 20 minutes if operators are given the freedom to ask more general questions.

2.4 Insights for Targeted Assistance

It is possible to see trends emerge within a week or two, however reliable insights into an individual's struggle with fatigue requires approximately 150 hours of system use. At an operation where SmartCap system use is mandatory, this can be achieved within one calendar month.

3 What the numbers say

A common fear amongst managers is that the introduction of a fatigue monitoring system will necessitate the shutdown of "half the fleet", given the uncertain prevalence of their fatigue risk. This has never been the case, and in fact, the statistics of risk vary little from operation to operation.

3.1 Risk Alarms

Life provides fatigue scores on an ongoing basis, which can be used to trigger alarms. Level 4 is a typical alarm point, indicating an increased risk of microsleep, at which an operator should take action.

In the early days, most sites experience a Level 4 alarm rate of 0.1 per operational hour, which equates to approximately **one alarm, per operator, per shift**. It's important to keep in mind that this average alarm rate will be largely contributed to by a small number of individuals. Established deployments typically see this rate reduce by a factor of 3 after 12 months.

It should be expected that 70-80% of all alarms will be associated with approximately 15% of the workforce. More specifically, **4-8% of the workforce are expected to be classified as high-risk individuals**, meaning that they receive greater than triple the workforce average alarms.

3.2 Fatigue Profile

While shift rosters and rotations play an influential role on the risk profile across the day and week, the greater influence is the typical circadian rhythm of individuals. Largely driven by the times of sunrise and sunset, it is expected that greater fatigue scores and alarm rates will be seen during night time hours.

On average, **71% of risk alarms occur on night shift** (7 pm – 7 am).

The greatest times of risk typically fall in the early morning hours. Though dependent on geographical location and season, we expect to see the **greatest period of risk being 2am-5am**.

3.3 Acceptance

Most members of the workforce are happy to 'go with the flow', and subscribe to the initiatives of management. We often see a small percentage of the workforce being very vocal in support of a SmartCap deployment, which is usually in response to a personal struggle with fatigue or in celebration of management efforts to provide a safer workplace. Approximately 5-10% of the workforce falls into this category.

On the other side of the acceptance spectrum are the individuals that strongly oppose the use of fatigue monitoring technology. Though the concerns rarely relate to the specific technology, such members of the workforce can take it upon themselves to lobby against the initiative, and even chastise those that show support. The **highly vocal opponents represent up to 5% of the workforce**, with a further 5% seemingly agreeing with the opposition stance though significantly less vocal.

4 Challenges

4.1 Operator resistance

While initial inquiries and surveys reveal a plethora of specific issues, closer investigation reveals the following five issues as the underlying concern in most cases:

- **"You're tired, you're fired"** – Esentially this concern is that the introduction of monitoring technology will lead to discipline or dismissal for those individuals that are identified as struggling to manage fatigue. This apprehension is rarely allayed with verbal reassurance, and is significantly heightened if previous initiatives or monitoring tools have been used in such a manner. The majority of concerns raised have this as the underlying driver, and it must be addressed with a clear non-discipline commitment from management with respect to fatigue alarms.
- **Big Brother** – Oerators are often opposed to excessive management oversite and 24/7 monitoring, again due to fears of misuse and abuse.
- **Privacy** – Unlike most technologies deployed on-site that monitor equipment, fatigue monitoring tools are designed to monitoring the individual. This raises obligations and more importantly concern with respect to individual privacy.
- **"Technology is unnecessary"** – A number of operators, particularly those with more shift-work experience, feel that they are and have always been able to manage their own fatigue. Sometimes referred to as a "Superhero complex", such an attitude is strongly opposed to anecdotal and empirical evidence, which overwhelmingly demonstrates that self-assessment of fatigue risk is poor in all individuals.
- **Silver Bullet** – This concern is linked with a notion that the business considers the technology a total, standalone solution to fatigue risk. It is often revealed in the statements like, "If they really cared about fatigue, they would….". No technology is a silver bullet, nor are any of them perfectly accurate. Monitoring technology is best used as part of a broader fatigue risk management framework.

4.2 Supervisor concerns

Supervisors represent the frontline of safety management in many operations. If supportive of a technology initiative, supervisors have the ability to encourage adoption amongst resistant members of the workforce. Alternatively, supervisors not supportive of a technology can rapidly and irreversibly disrupt the initiative.

Given that supervisors are often responsible for face-to-face interactions with individuals receiving multiple alarms, they need to be sensitive to operator concerns while maintaining a position of safety leadership. This requires soft skills and nuance that may not have been historically tested in a supervisor's role.

Supervisors already have a demanding role in a production environment and the introduction of *another* initiative that requires their attention and time may be unwelcome. Deployment plans should factor this in, and should include sufficient, quality engagement with supervisors to ensure success.

5 Best Practice

5.1 Safety leadership

While workforce acceptance is often being assessed in a trial/pilot, it's important for a business to decide whether its management is taking a stance in safety leadership, or alternatively is asking the workforce to determine what initiatives it employs. If a desktop review and suitable reference site check proves the value of a solution, it is difficult to justify non-adoption because of limited acceptance in a pilot phase. As a more safety-focussed alternative, gaining real insight into the underlying objections or points of concern from workforce members will inform management of possible changes needed in the policies, procedures or workforce training/education required.

In our experience, the most common objection is not directly related to the product itself, but rather to misconceptions of how it is to be used. Put simply, employees and contractors may feel that the business will employ a "you're tired, you're fired" approach. This is best addressed with a clear commitment from management that individuals will not be disciplined as a result of the SmartCap levels or alarms.

5.2 Put commitments in writing

Given that the primary potential concern amongst drivers/operator's centres on discipline and dismissal, it is important that management communicates its position on this topic in writing. We recommend a commitment stating that individuals will not be disciplined based on Life measurements or alarms, and that this commitment is from a senior member of the business (e.g. General Manager).

Such a commitment doesn't hinder an organisation's ability to discipline for misuse, non-use or vandalism, however clearly establishes that the primary purpose of the initiative is to improve safety.

5.3 Genuine consultation

It is imperative that all stakeholders be genuinely engaged, including workforce representatives and relevant unions. Fatigue monitoring technologies provide incredible benefit if deployed well, however also give rise to concern and distrust.

There is real value in genuine consultation. Not only can stakeholders share requirements, concerns and suggestions before business processes are written, but inclusion also facilitates a sense of combined purpose which is invaluable to organisational change.

5.4 Data privacy

This should be addressed upfront, and not in response to the expression of concern or filing of a complaint. It is also important to openly communicate what information is being stored, who has access to data, and what controls are in place.

While unlikely to be specific to Life, it is important to ensure that all processes associated with SmartCap data adhere to data usage and privacy policies and legislation. This may necessitate the limiting of access to SmartCap data, which should be reflected in the action plans and responsibilities identified in your Fitness for Duty policy.

5.5 Define success criteria

Whether trialling or piloting a technology, this should not be an arbitrary, box-ticking exercise. It is important to establish measurable criteria, and ensure the scope will allow adequate assessment of the product or the associated systems. Examples might include:

- Does the equipment function reliability in our working environment?
- Does the technology provide sufficient information to allow the business to intervene prior to incident?
- Has the training provided empowered our workforce and management to make full use of the technology?
- Has the vendor demonstrated expertise and responsiveness as expected?

5.6 Communicate results, decision and rationale

Following a trial or pilot, a business decision is made. Often participating staff are left in the dark regarding what, if any, decision was made. Communicating the results and decision rationale is good practice, and will facilitate goodwill for future initiatives.

5.7 Fatigue training

Technology is not a silver bullet. Pairing a technology deployment with fatigue training has several benefits, including:

- showing that the business doesn't think the product is a silver bullet;
- demonstrating a genuine intent to mitigate the risk of fatigue, as opposed to introducing more management oversight;
- providing practical suggestions for making change if the technology indicates the need for change; and
- reinforcing the need to arrive and maintain fitness for duty.

6 Your Deployment

Now that you have insight into what your deployment might look like, you may feel overwhelmed. You can rest assured that the SmartCap team are committed to making your deployment a success, and have years of experience delivering on this commitment all over the globe.

We're here to help, and have the training materials, policy templates and change management experience to guide any or all aspects of your deployment. If you need more information, or would like to ask our team of experts a question, please contact us at support@smartcaptech.com