



Shutdown as a Risk Management Strategy.

The current mantra that social shutdowns will defeat the Covid 19 outbreak has prompted me to think about this in Quality Management Terms. ISO 9001 and its family of offspring standards like 17025 and 15189 all require ‘risk management’ policies and procedures. In 17025 and 15189 we are familiar with the concept that ‘quality control samples’ provide progressively objective signals for the need to consider shutdown and eventually to actually shutdown an analytical activity. But in most labs quality control failure means that we close down just one product stream not the whole laboratory. So then I asked myself what industry does practice total shutdown as a risk management strategy ? And probably because I live in Tasmania where, on the West Coast there are a number of precious metal mines, it is not uncommon to see these go into total shutdown. The mining industry’s euphemistic term for this is ‘putting the mine into care and maintenance’. The impact on the local community is considerable. Some communities do have other employment opportunities for persons with relevant mechanical skills but many of the workers have to make alternative arrangements. What drives the shutdown ? The price of the metals extracted from their mined ores on the commodities market.

Reducing this scenario to its simplest we have an ore body of fixed chemical composition – so that can be described as the ‘fixed asset’. Surrounding that is a dependant community that has various strategies to sustain itself during shutdowns. This can be described as the ‘expendable asset’. How expendable is largely determined by the lengths the mine owner will go to retain an appropriately skilled workforce in the nearby community. Mine owners who practice a workforce ‘fly in fly out’ are prepared to expend a local community completely.

Does this model resonate with the current Covid 19 shutdown strategies ? I think that there are parallels and that they are worth exploring. When the question : What is the ‘fixed’ asset that is being protected in the current Covid 19 pandemic in Australia ? : is posed to a politician it is not very clearly answered but it appears to be ‘to avoid unnecessary deaths in the community’. That implies that there must be a benchmark deaths figure above which the politician will consider that we have entered an episode of unnecessary deaths. It is unlikely that you will ever get a politician to proffer a figure above which all further deaths are ‘unnecessary’. Fortunately the ABS can supply us with a figure. Under normal non-pandemic circumstances in Australia there are 63 deaths per 10,000 Australians per annum⁽¹⁾. Unfortunately we will have wait until the end of 2020 before we will know the exact number of deaths and surmise whether they were or were not excessive and unnecessary during this pandemic.

Obviously death is not an asset that we are trying to protect here. So what is the fixed asset that is at risk of unnecessary death? So far the case based mortality data from China suggests that these categories are the most likely to succumb to the virus⁽²⁾ :

Persons aged	50 to 59 years	1.3% (1.1% to 1.5%)
	60 to 69. years	3.6% (3.2% to 4.0%)
	70 to 79 years	8.0% (7.2% to 8.9%)
	≥80 years	14.8% (13.0% to 16.7%)

Persons with comorbidity conditions

Cardiovascular disease	10.5%
Diabetes	7.3%
Chronic respiratory disease	6.3%
Hypertension	6.0%
Cancer	5.6%
(No comorbidities)	0.9%

These data support the proposal that the ‘fixed asset’ that we are trying to protect from unnecessary death are ‘all persons aged over 50 years without or with the five comorbidity conditions’. The ABS data⁽³⁾ on the age profile of the Australian population indicates that 14.4% are aged over 65 years. The total population is 23,128,129. So the fixed asset to be protected amounts to 3,330,450 persons.

So in line with the mining industries ‘shutdown followed by care and maintenance’ model this leads me to the suggestion.

“It would be wiser to put the 3,330,450 aged persons into ‘care and maintenance’ than to place a significant proportion of the 15,426,462 persons aged between 15 and 64 years into what has turned out to be a partial shutdown environment where they not only lose the opportunity to work but also experience significant restrictions on their normal family life.

There are significant advantages to this approach. Herd Immunity to Covid 19 would be achieved in the 75% of the wider community in about 32 days⁽⁴⁾ and the society’s supply chains would continue to function at close to normal capacities.”

At this point it is important to consider the following question : What is the unnecessary death risk to that the ‘non-aged’ population is going to be exposed to under this Risk Management strategy ? According to the Centre for Evidence Based Medicine 20 per 10,000 persons if all of those 10,000 persons contracted the virus. Which combined with the underlying death rate of 63 per 10,000 persons would raise the number of deaths for 2020 to around 83 per 10,000 Australians. Across 52 weeks that amounts to $83/52 = 1.6$ deaths per 10,000 Australians per week. Without Covid-19 our usual death rate is $63/52 = 1.2$ deaths per 10,000 Australians per week⁽¹⁾.

Closing Comment : It is incorrect to imagine that Risk Management can be achieved in isolation from the environment that surrounds the asset to be protected⁽⁵⁾. Risk Management is about

- correctly identifying the asset and its context,
- assessing the risks to that asset and its context,
- identifying strategies to mitigate that risk and
- finally estimating the ‘collateral damage’ that those risk management strategies would create if implemented.

Australia is a unique social environment and it requires Covid 19 risk management strategies that match its unique social environment and its unique population demographic.

(1) <https://www.abs.gov.au/AUSSTATS/abs@.nsf/Latestproducts/3302.0Main%20Features42018?opendocument&tabname=Summary&prodno=3302.0&issue=2018&num=&view=>

(2) <https://www.cebm.net/global-covid-19-case-fatality-rates/>

(3) <https://www.abs.gov.au/AUSSTATS/abs@.nsf/DetailsPage/3235.02018?OpenDocument>

(4) <https://www.statnews.com/2020/03/25/coronavirus-experts-craft-strategies-to-relax-lockdowns/>

(5) <https://quadrant.org.au/opinion/opinion-post/logic-the-first-casualty/>

About The Author : Dr Tom Harley was born in 1948 so by his own admission falls into the ‘fixed asset’ category. He retired in early 2019 after a lifetime career in Clinical Biochemistry and Quality Management in a tertiary teaching hospital and 14 years as a University Research Fellow. His profile can be found on Research Gate.