PRISON FIRE

Cause Map

Overcrowding leads to prisoner deaths

Applying a solution to solve one *problem* can inadvertently create an even bigger problem. This is called *unintended consequences.* A thorough root cause analysis can help prevent this scenario by creating a map of all the causes.

"This is a horrible tragedy . . . This shouldn't happen."
- Archbishop Msgr. Romulo Emiliani

Cause Mapping is a Root Cause Analysis method that captures basic cause-and-effect relationships supported with evidence.

CAUSE MAPPING

Problem Solving • Incident Investigation • Root Cause Analysis

Step 1	Problem	What's the Problem?
Step 2	Analysis	Why did it happen?
Step 3	Solutions	What will be done?

1 Problem

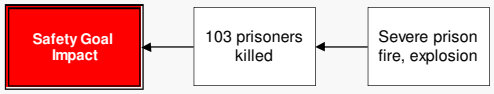
What	Problem(s)	Prison fire
When	Date	February 9, 2009
	Time	1:30 a.m.
	Different, unusual, unique	Overcrowded cells
Where	State, city	San Pedro Sula, Honduras
	Facility, site	Prison
	Task being performed	Imprisoning gang members

Impact to the Goals

Safety	103 prisoners killed
	25 prisoners injured
Environmental	Severe prison fire, explosion
Customer Service	No prisoner escapes
Property, Equip, Mtls	Damage to prison

2 Analysis

Basic Level Cause Map - Start with simple Why questions.

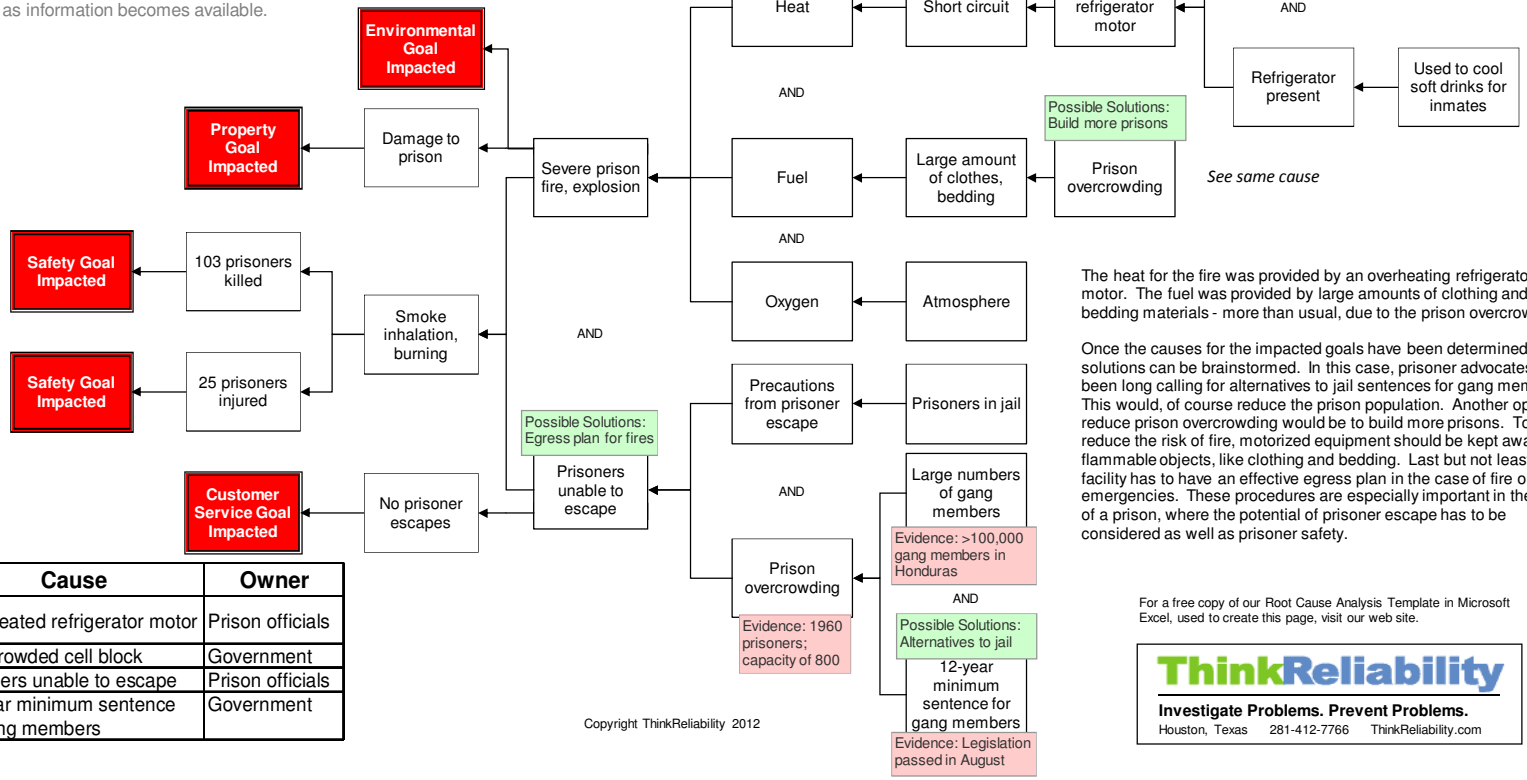


Basic Cause-and-Effect

A fire and explosion in a seriously overcrowded prison in Honduras resulted in 103 deaths and 25 injuries. The fire was started from a short circuit from a overheated refrigerator motor, used to store soft drinks for the inmates. The cell block - which has a capacity of 800 - contained 1960 inmates, their clothing, and their bedding materials. This provided plenty of fuel for the fire.

More Detailed Cause Map - Add detail as information becomes available.

The impacts to the goals were due to a severe prison fire and explosion. In addition to the fire, the injuries to the prisoners was caused by the prisoners being unable to escape. Part of the reason the prisoners were unable to escape is because they are in prison, and so precautions against escape are part of the deal. However, egress from a building that is on fire to a safe location should be part of the procedures of any prison. In this case, the procedures obviously didn't work considering the high amount of deaths and injuries (of a total of 186 prisoners in this cell block). The egress was likely made more difficult due to severe prison overcrowding. The prison has a capacity of 800 and contained 1,960 prisoners. The increase in the prison population is at least partially due to a legislation passed the previous August which mandated a minimum 12-year prison term for gang members. There are estimated to be more than 100,000 gang members in Honduras.



The heat for the fire was provided by an overheating refrigerator motor. The fuel was provided by large amounts of clothing and bedding materials - more than usual, due to the prison overcrowding.

Once the causes for the impacted goals have been determined, solutions can be brainstormed. In this case, prisoner advocates have been long calling for alternatives to jail sentences for gang members. This would, of course reduce the prison population. Another option to reduce prison overcrowding would be to build more prisons. To reduce the risk of fire, motorized equipment should be kept away from flammable objects, like clothing and bedding. Last but not least, any facility has to have an effective egress plan in the case of fire or other emergencies. These procedures are especially important in the case of a prison, where the potential of prisoner escape has to be considered as well as prisoner safety.

3 Solutions

No.	Action Item	Cause	Owner
1	Seclude machinery from flammable objects	Overheated refrigerator motor	Prison officials
2	Build more prisons	Overcrowded cell block	Government
3	Egress plan for fires	Prisoners unable to escape	Prison officials
4	Alternatives to jail	12-year minimum sentence for gang members	Government

Copyright ThinkReliability 2012

For a free copy of our Root Cause Analysis Template in Microsoft Excel, used to create this page, visit our web site.

ThinkReliability
Investigate Problems. Prevent Problems.
Houston, Texas 281-412-7766 ThinkReliability.com