

1 Problem

What	Problem(s)
When	Date
Where	Different, unusual, unique
	Facility, site
	Unit, area, equipment
	Task being performed

Bystander assistance - cardiac arrest
Effort launched 2005
Nationwide effort to promote CPR
Denmark
Everywhere
Treatment of cardiac arrest

Impact to the Goals

Patient Safety	Increased survivability after cardiac arrest
Patient Services	

NATIONAL EFFORT IMPROVES CARDIAC ARREST SURVIVAL RATES

In Denmark from 2001 to 2010:
 One-year survival rates increased from 2.9% to 10.2%
 30-day survival rates increased from 3.5% to 10.8%
 Patients arriving alive at the hospital increased from 7.9% to 21.8%
 Patients receiving bystander CPR increased from 21.1% to 44.9%

Cause Map

"Those who witness a cardiac arrest and start CPR can actually change the outcome of what happens to the victim."

- Suzanne Steinbaum,

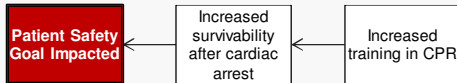
Director of the Program on Women and Heart Disease, Lenox Hill Hospital's Heart and Vascular Institute

2 Analysis

Basic Level Cause Map - Start with simple Why questions.

Basic Cause-and-Effect

According to the American Heart Association, "About 92 percent of sudden cardiac arrest victims die before reaching the hospital, but statistics prove that if more people knew CPR, more lives could be saved. Immediate CPR can double, or even triple, a victim's chance of survival."



More Detailed Cause-and-Effect

Survivability of SCA is dependent on the length of time between SCA and chest compressions that allow blood flow to the heart and brain. This can be accomplished by non-medical personnel using Cardiopulmonary Resuscitation (CPR), known as "bystander CPR", which can provide lifesaving treatment for a victim of SCA until medical personnel arrive.

In Denmark, the rate of patients who received bystander CPR in 2001 was 21.1%. The country embarked on a national initiative to improve SCA survivability. This initiative included increased training of residents as early as elementary school. Instructional kits were provided, and learning CPR was required in order to receive a driver's license. The percent of patients who received bystander CPR increased from 2001 to 2010 to 44.9%.

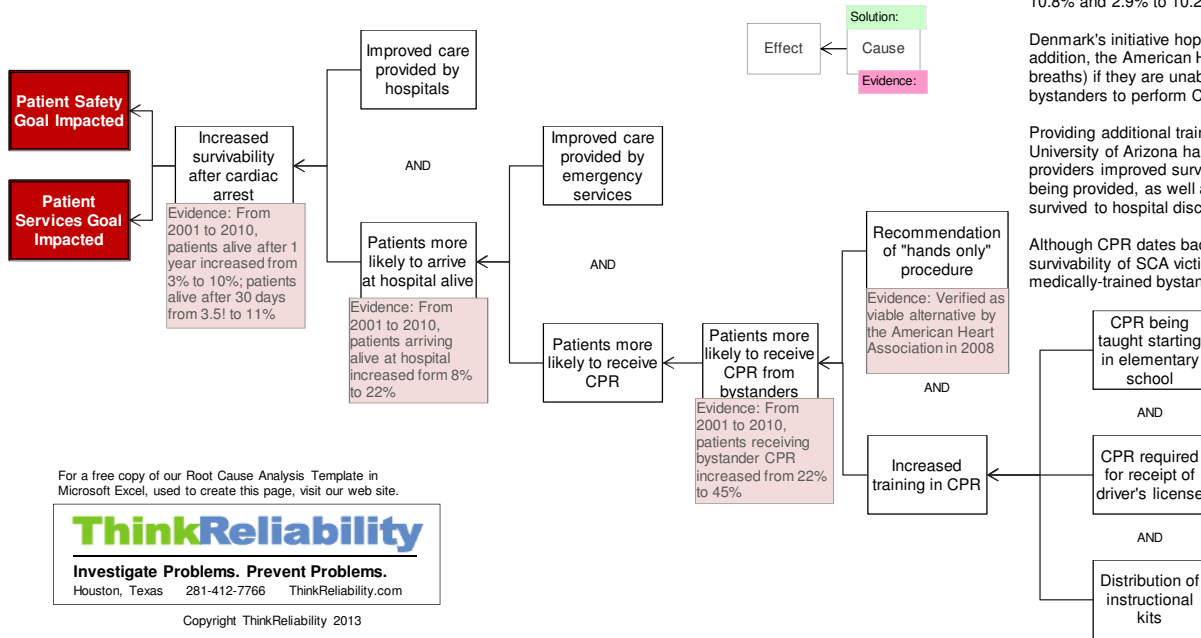
In addition to the increased education of the general population about CPR, changes were made to improve care provided after SCA by hospitals and emergency medical services. From 2001 to 2010 in Denmark, cardiac arrest patients arriving at a hospital alive increased from 7.9% to 21.8%. In addition, 30-day and 1-year survival also increased, from 3.5% to 10.8% and 2.9% to 10.2%, respectively.

Denmark's initiative hopes to lessen the reluctance bystanders may have to perform CPR due to lack of training. In addition, the American Heart Association recommended in 2008 that laypersons perform compression-only CPR (no breaths) if they are unable or unwilling to provide rescue breaths. This may have also decreased the reluctance of bystanders to perform CPR due to concerns about spread of disease, or feeling uncomfortable giving rescue breaths.

Providing additional training to emergency medicine providers can also improve survivability. Another recent study by the University of Arizona has found that improving the quality and effectiveness of CPR performed by emergency medicine providers improved survival rates. In the study, rescuers were provided real-time feedback as to the quality of the CPR being provided, as well as training that emphasized a team approach. Before these interventions, 26% of SCA victims survived to hospital discharge. After the interventions, 56% of victims survived to discharge.

Although CPR dates back to 1740, improvements in availability and quality are still being found that can increase survivability of SCA victims. Because of the importance in quick and effective action, the importance of action by non-medically-trained bystanders to the survival rate after SCA provides strong support for layperson CPR training.

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



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?

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

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