

Project Deliverable B:
Needs Identification and Problem Statement

GNG 1103

Group C6

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Introduction:

The opioid crisis has caused over 10 000 overdose deaths in Canada since 2016. 94% of those are accidental, and young Canadians aged 15-24 are the fastest-growing overdose population. Overdoses are happening with both illegal and prescription drugs and touches every sector of the population. The main signs of an overdose is a low respiratory rate and low oxygen saturation levels in the blood. (*Project background obtained from [Overdose Detection Module](#) file*).

The client needs a product that targets single men in the trade. These people could be experiencing emotional damage. It is crucial to keep in mind that the people that overdose on the drugs are not trying to commit suicide, they are people who use the drugs in hopes to function in their jobs and day to day life.

When someone overdoses, they have around three minutes before going into cardiac arrest. When someone is overdosing, they experience the following symptoms: they become sleepy, their oxygen levels drop (they breathe less), and they are unable to function (call for help). Often a person that is overdosing might not be aware that they are overdosing.

Table 1: Customer Needs, Statements, and Interpretation

Category	Customer Statement/Needs	Interpretation
Accessibility	I need a device that can be used by users who are alone.	The device needs to be easy and straightforward to use; the user shouldn't need help from another person to use it.
	I want a device that allows people to use 2 hands when preparing drugs.	The device needs to be unobtrusive to the user's abilities.
	I need the device to be affordable for average trades salary.	The device needs to cost around \$100.
Appearance/Design	I need the device to be small, so it will be less likely to be seen or stolen.	The device needs to not be flashy and be able to keep hidden.
	Due to stigma, I need the appearance of the device to make people not feel embarrassed about it.	The device needs to be discreet; looks like an everyday accessory (like a watch, bracelet, etc.).
Durability	I need the device to be resistant to day to day use.	The device needs to be water resistance, and not easily breakable.
	The device needs to have more than a day of battery life.	The device requires low electrical usage or a large battery.
	It needs to be able to be worn for at least 24 hours with no risk of failure.	Resistant to damage from regular everyday activities.

Efficiency	I need a device that provides the user with a quick response, be it calling for help or administering a drug.	The device must be able to work immediately, and can call the paramedics with a maximum time of three minutes.
	I need the device to work well so that it may be used to save someone.	The device needs to have accurate & reliable readings.
Functionality	I need the device to call the paramedics for help.	The device needs to have the capability to send the GPS location to proper authorities.
	I need the device to monitor the breathing of a person.	The device needs to monitor the oxygen saturation of the person.
	I need the device to use both oxygen and heart rate to measure if an overdose is occurring.	The device needs to be able to monitor heart rate and the amount of oxygen used by a person to accurately understand if an overdose is happening.
	Lights on the pulse oximeter must penetrate the skin.	The device needs to be used on a part of the body that light can penetrate.
Others	Due to the volatile circumstance of the product, I need the device to not be held liable so that distribution can be possible.	The device needs to not cause injuries or death to an individual using it.

(Priorities: Green cells mean it must be satisfied for the device; yellow cells are less important than the green cells)

Problem Statement:

A need exists for people who are taking opioids to monitor their health with a discreet, durable, and affordable device that can send their location to paramedics to call for immediate help when they are at risk of an overdose.

Conclusion:

The goal of the team is to satisfy all the client's needs. However, certain needs might have to be sacrificed for others, depending on priority. It must be kept in mind that some of the client's needs are more crucial than others because if these design needs are not met, then the product will fail its task. Based on the first meeting with the client, there are still some variables that need further clarification, such as certain design aspects of the device. The team will get in touch with the client to further understand the needs and gather more relevant information needed in the process of creating the product.