

# Internet-based Naloxone Safety Kit

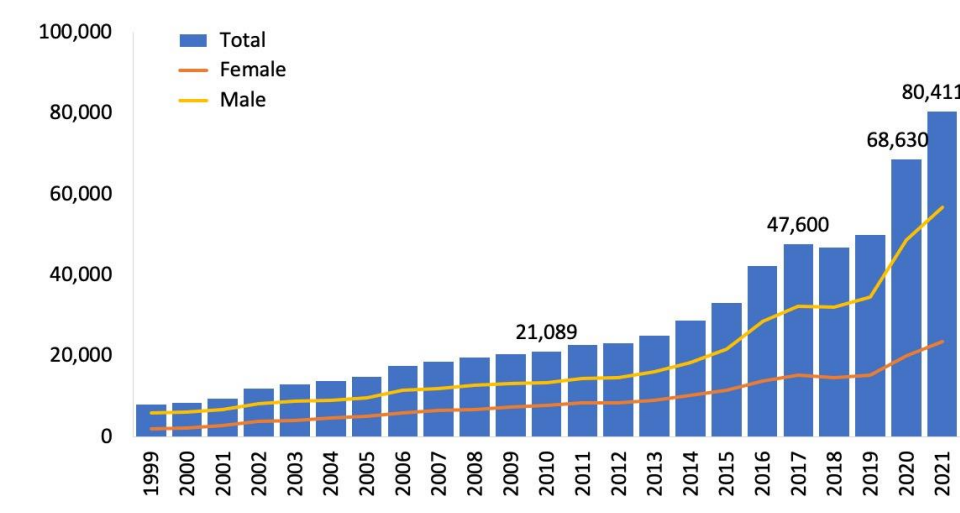
Empowering Communities to Fight Opioid Overdoses

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## Opioid Epidemic is a Silent Killer

- Opioid overdose deaths increased dramatically over the past decade.
- In 2021, there were 80,411 reported overdose deaths [1].
- The trend highlights the urgent need for effective solutions to address opioid epidemic.

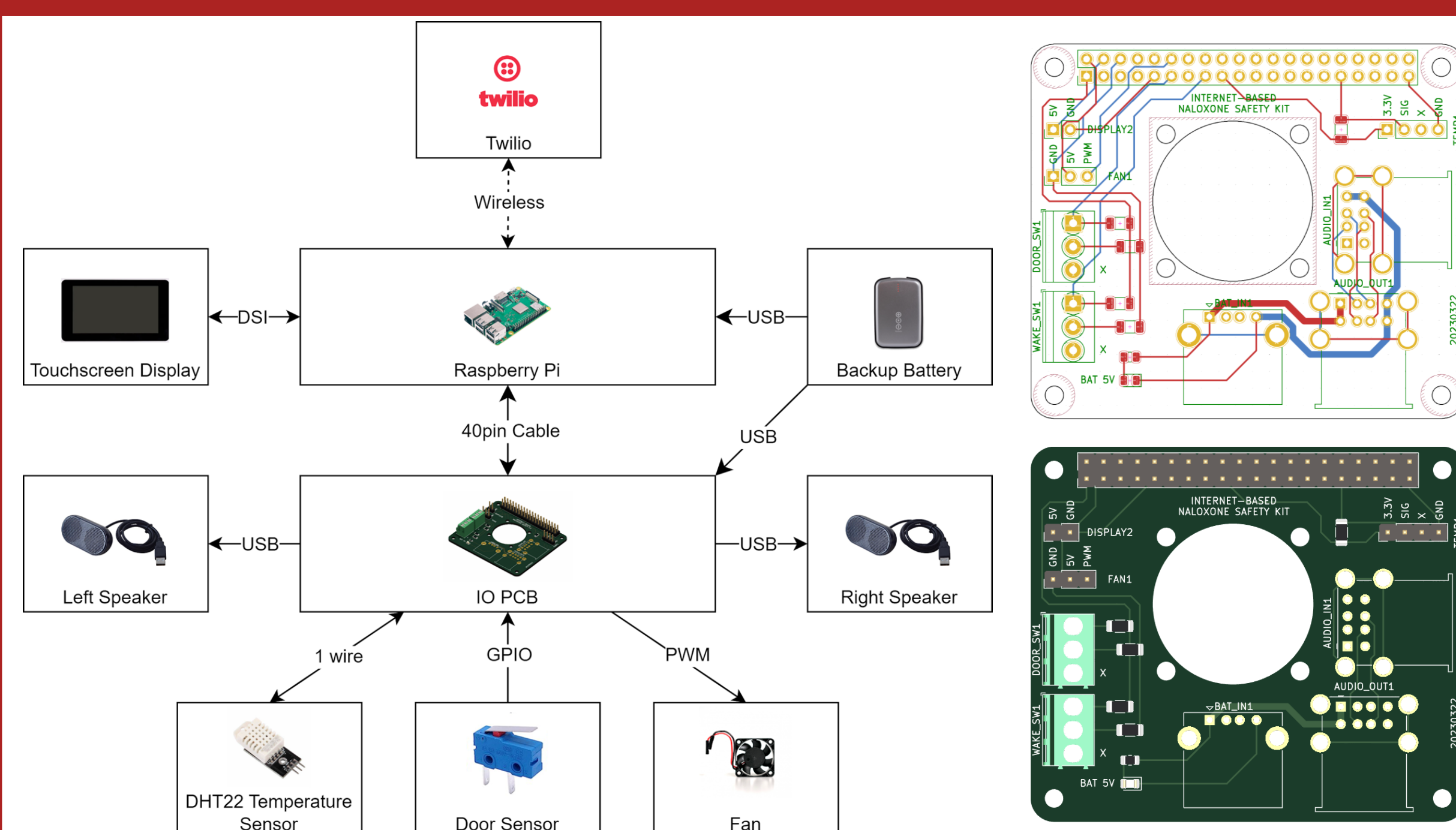
Figure 3. National Overdose Deaths Involving Any Opioid\*, Number Among All Ages, by Gender, 1999-2021



## These Deaths Can Be Prevented

- Quick administration of Naloxone can prevent opioid overdose deaths.
- We designed a wall-mounted medical infrastructure device, like a defibrillator, to provide quick access to Naloxone.
- The Naloxone Safety Kit is equipped with comprehensive features including emergency calling, Naloxone monitoring, and alarm synthesis to provide a quick and effective response in the event of an overdose.
- The kit promotes public health and safety by increasing accessibility to Naloxone, potentially saving countless lives.

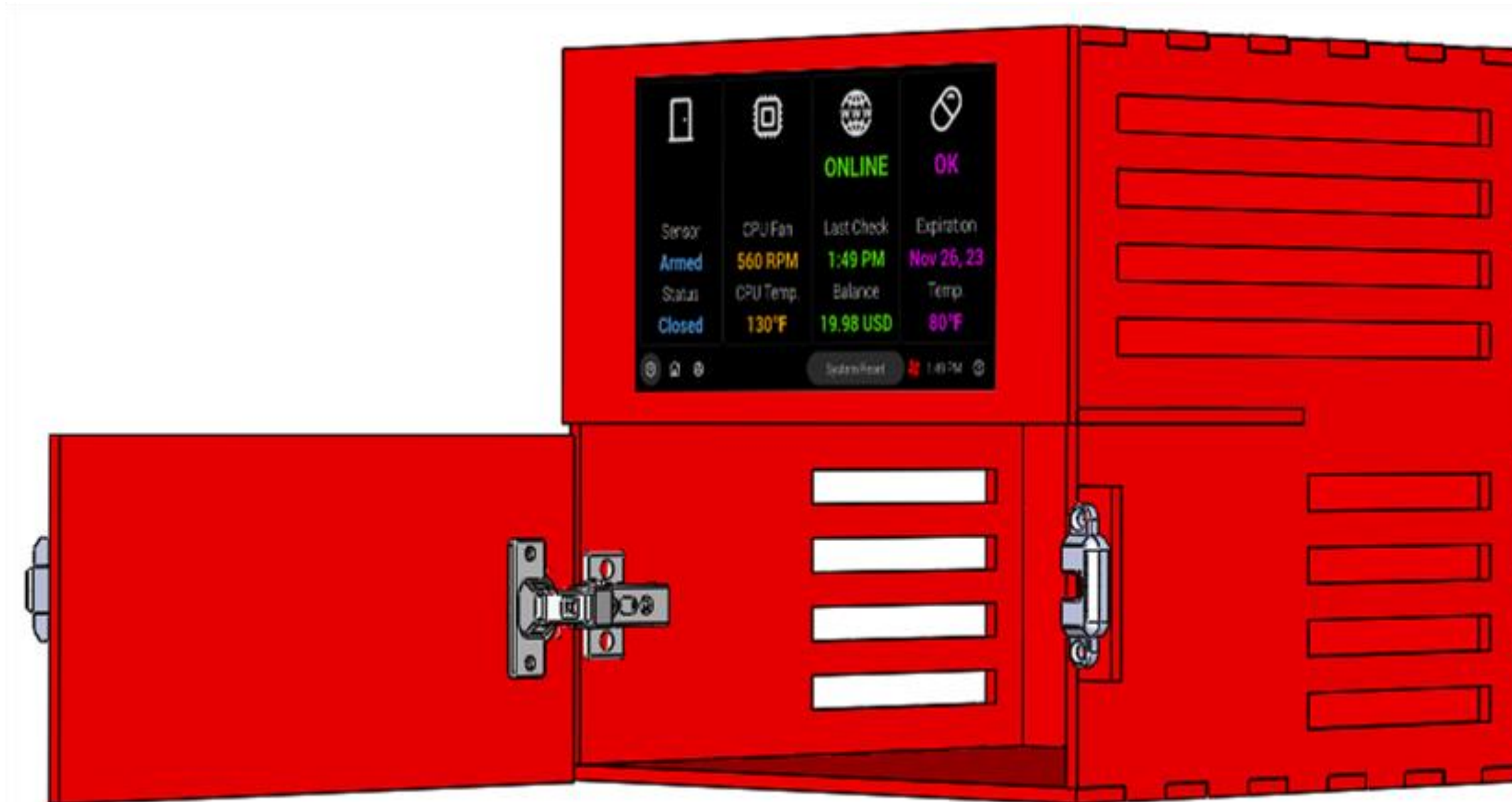
## A Closer Look at Naloxone Safety Kit



- The Naloxone Safety Kit uses a Raspberry Pi and PCB as an IO hub, connecting sensors and speakers for a comprehensive solution.
- The device is designed to prevent internal temperature from exceeding recommended levels using a fan, ensuring the efficacy of the Naloxone.
- In case of emergency, the device can automatically call emergency services or sound an alarm to alert nearby individuals.

## Mechanically Designed for Ease of Use & Replication

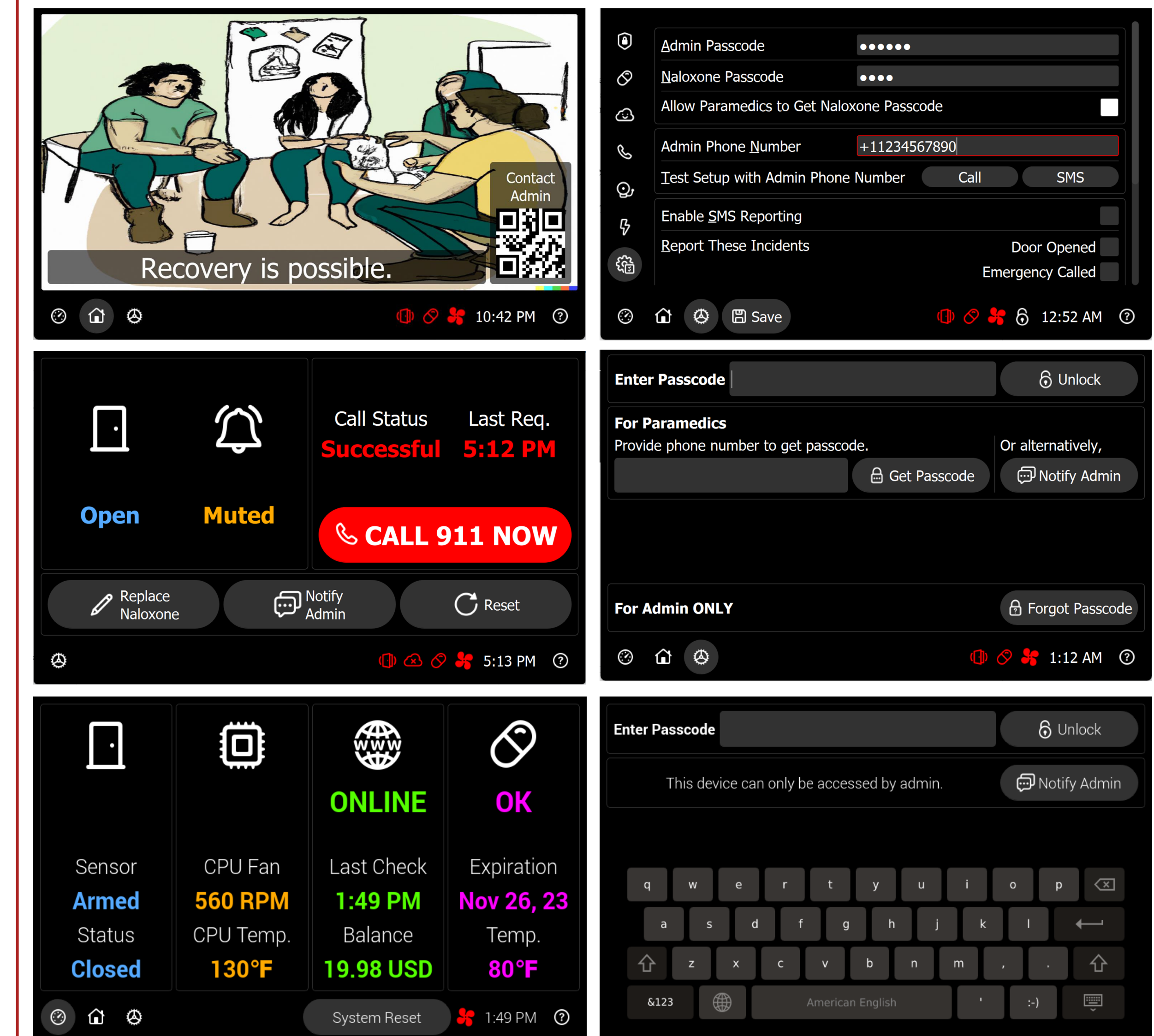
- Enclosure is designed for effectiveness and ease of replication
- Exterior fabricated using laser cutting for quick and easy production
- Locking mechanism manufactured using FDM 3D printing, easily replaceable with off-the-shelf alternative, and vents added to ensure appropriate temperature range for Naloxone.



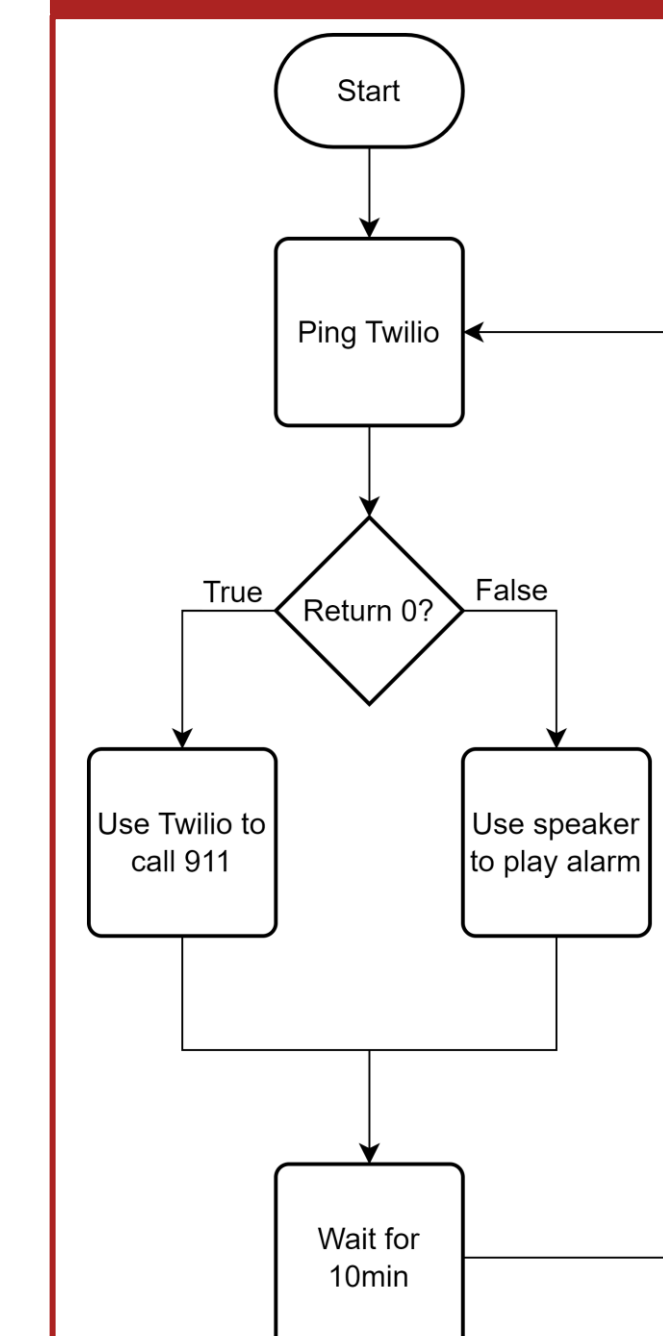
## An Intuitive User Interface

The Naloxone Safety Kit features an intuitive touchscreen display with labeled buttons and menus, allowing for effortless navigation and quick access to emergency calling and notification buttons. The user interface includes:

- Sleek touchscreen display with labeled buttons and menus
- Push buttons for emergency calling and notifying the admin
- Touch keyboard eliminates the need for a physical keyboard
- Comprehensive software settings for full user control
- Passcode screen for authorized personnel to modify settings



## Stay Alert During Power & Network Outages



- The Naloxone Safety Kit is designed to be prepared for any emergency, with a backup battery that can provide up to six hours of power during outages.
- It automatically switches to alarm mode if it cannot connect to the Internet or make emergency phone calls, alerting nearby individuals with its built-in speakers.
- With this feature, the Naloxone Safety Kit ensures that help is never out of reach, no matter the situation.

## References

[1] National Institute on Drug Abuse, "Overdose Death Rates," *National Institute on Drug Abuse*, Feb. 09, 2023. <https://nida.nih.gov/research-topics/trends-statistics/overdose-death-rates>