Testing Metrics

~~Blood bag~~

Spike

Connector: Spike-DC (squeeze)

DC (squeeze)

Connector: DC (squeeze) - DC (hard)

DC (hard)

Interface: DC (hard) - Filter

Filter

Connector: DC (hard) - Tubing

Tubing

Connector: Tubing-Luer lock base

Luer lock

Connector: Luer lock-needle

Needle

# Safety

## Bacteria Removal

Ability to remove bacteria from components 1, 2, 5, 10, 25, 50, 100, 150, 200x through autoclave

* Execute for
  + Negative control: surgical tool/ metal component
  + Our components
* Control: Swab component before adding bacteria, plate, incubate for 48 hours, check for colonies
* Testing: Pipette bacteria into components, incubate for 48 hours, check for colonies

## Blood Adhesion

Amount of blood that would get stuck in components 1, 2, 5, 10, 25, 50, 100, 150, 200x through autoclave

* Execute for
  + Negative control: metal tube
  + Our components
* Control: Measure weight of piece before testing and at every other point when measurement is conducted for the component, compare to the ratio of the metal

## Biocompatibility

* Epoxy resin
* Test for potential toxins

# Durability

Measure all at 1, 2, 5, 10, 25, 50, 100, 150, 200x through autoclave

## Tensile Strength

* Cut piece: measure stress/strain curve downstairs
* Cut piece, make sure can endure standard force set by tugging

## Flexibility

* Purpose: Make sure it is still as easy to move around, place in arm, store in spool
* Do a quality test: Have people score it on a scale of 1-10

## Color Change

* Qualitative observation at each cycle, compare to non-autoclaved material
* Passes test if color change does not impair ability to see level of blood

# Air Tightness

## Leakage

Measure without autoclaving, establish baseline

* Run PBS through at least 10x, check if liquid drips out

## Interface Stability

* Glues: torsion test

## Material Viability

Measure all at 1, 2, 5, 10, 25, 50, 100, 150, 200x through autoclave

* Plug into bag, run PBS through tubing after each cycle, make sure no liquid seeps out

# Use Requirements

## Ease of Use

Setup

Survey of doctors and nurses on how they use it

## Flow Regulation

# Community Standards

## Community Comfort

Survey of how comfortable they are with

## Local Sourcing

Contact client,

## Cost Efficacy

Less than $5 per use