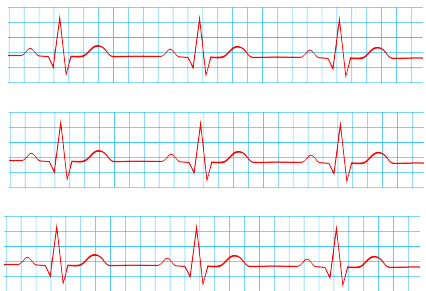


1

## Real Patient Heart Data



## Parameterized Heart Model



2

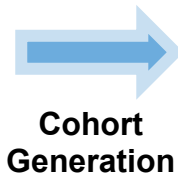
## Parameter Constraints

Parameter Constraints for Heart Condition 1

Parameter Constraints for Heart Condition 2

⋮

Parameter Constraints for Heart Condition  $N$



3

## Synthetic Heart Model Library



H1



H5

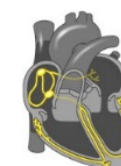


H2

⋮



H3



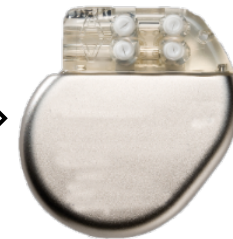
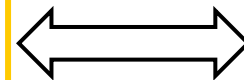
HN



H4

4

## Closed-loop Device Testing



Implantable Cardiac Device