



Home Health Device

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Overview

- Project Motivation and Requirements
- Design Choices
- Design Matrix
- Final Design Choice
- Testing and Fabrication
- Future Work
- Questions?

Project Motivation

- Home health visits
- Limited work space and seating
- Portable seat and storage
- Home health bag technique

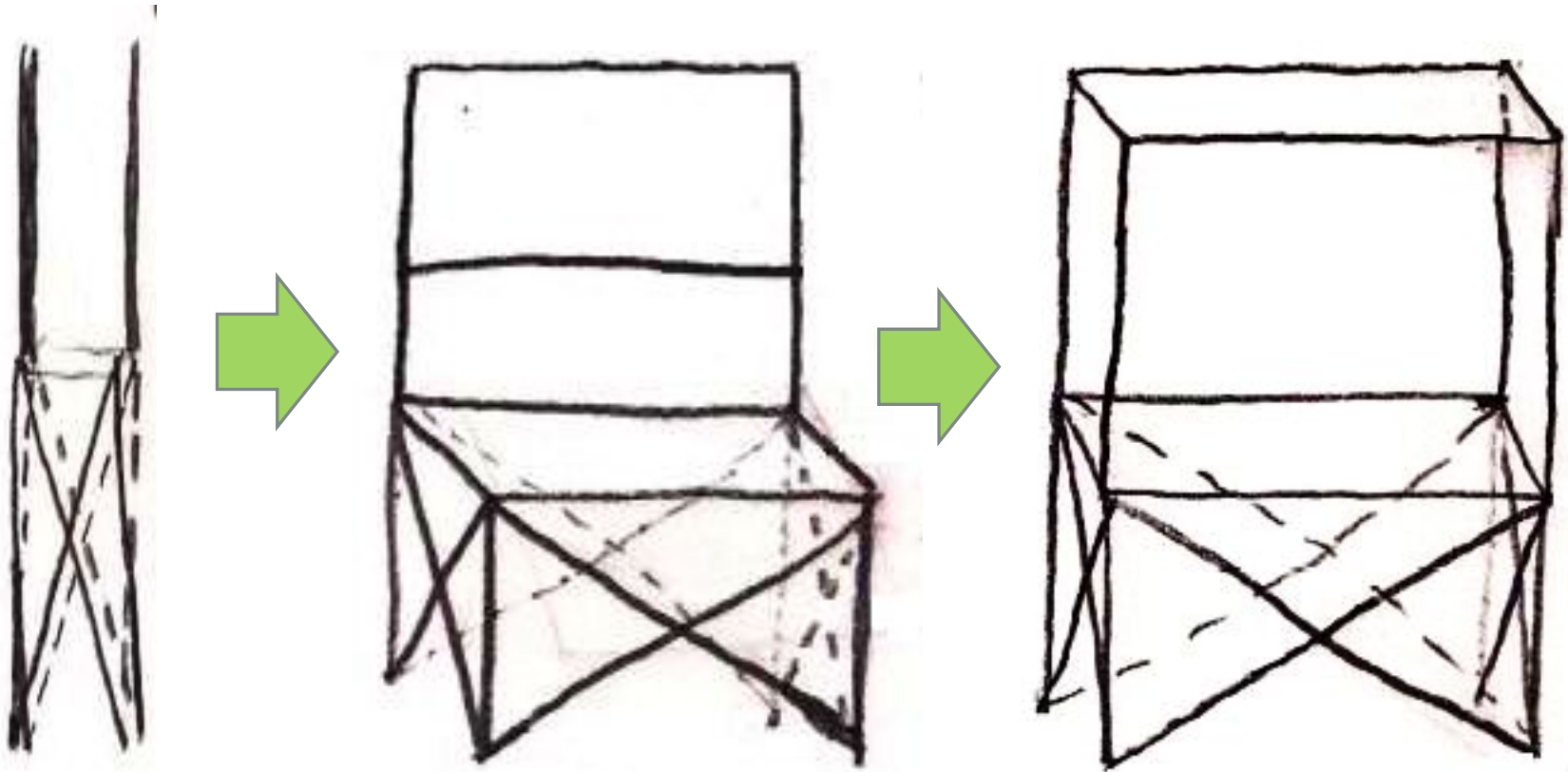




Project Requirements

- Portable and lightweight
- 18in x 18in x 16in
- Easily cleaned
- Seat and handle
- Non-allergenic materials

Design Alternative #1: Lawn Chair



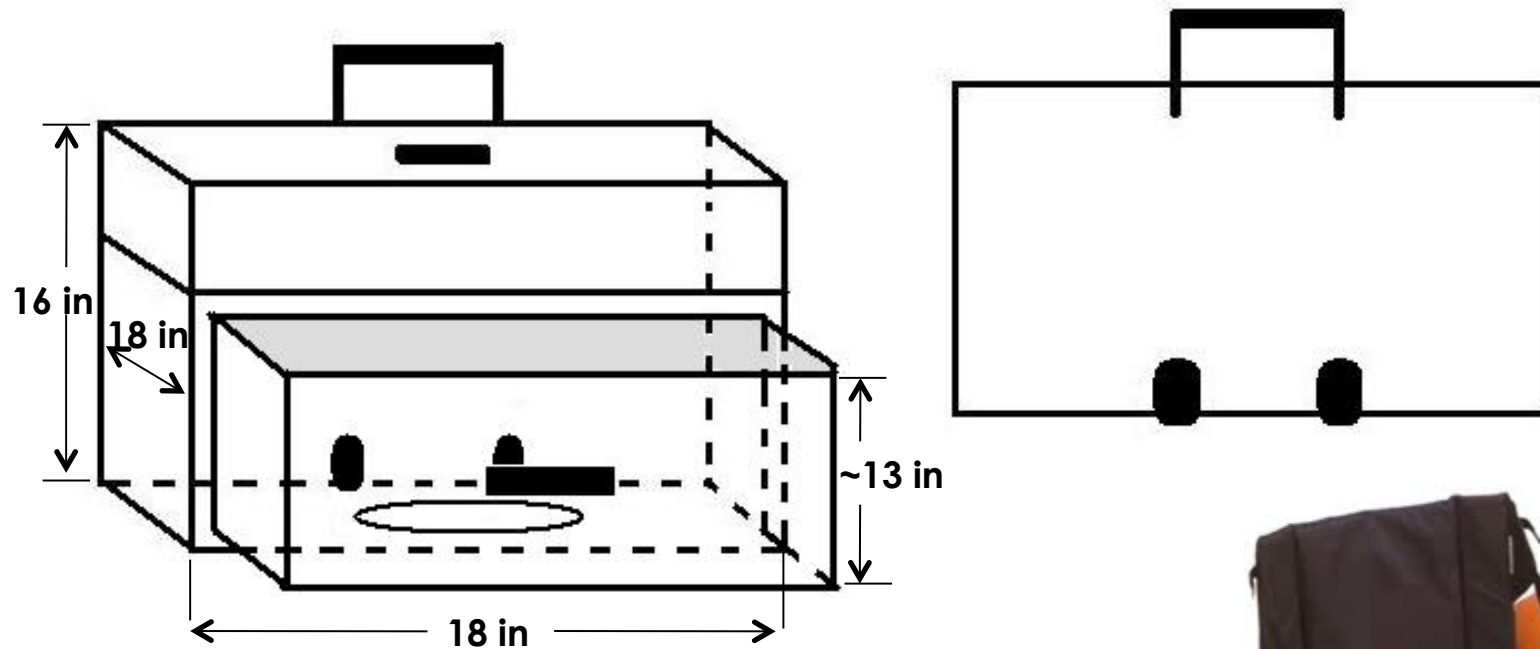
Pros:

- Easy to build
- Inexpensive

Cons:

- Does not include storage
- Risk of tipping at standing height

Design Alternative #2: Box with Drawer



Pros:

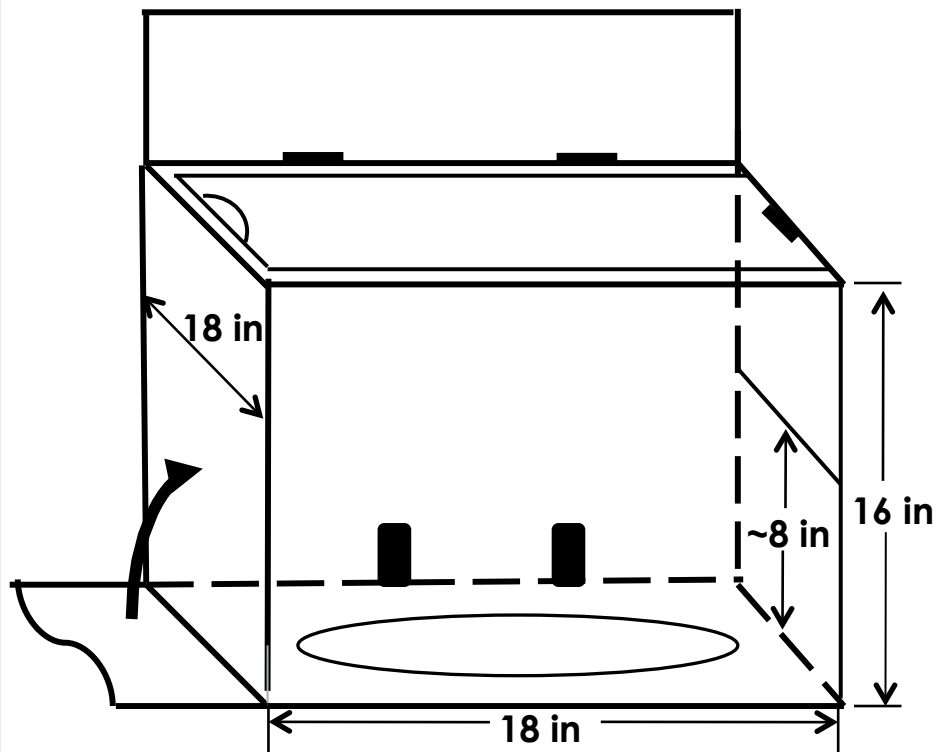
- Easy transport
- Features storage

Cons:

- Exact design will vary



Design Alternative #3: Box with flip top

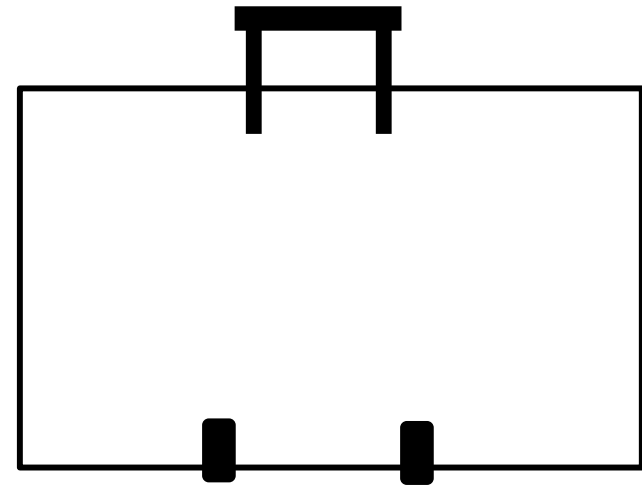


Pros:

- Easy transport
- Storage area to place bag
- Lightweight
- Cost efficient

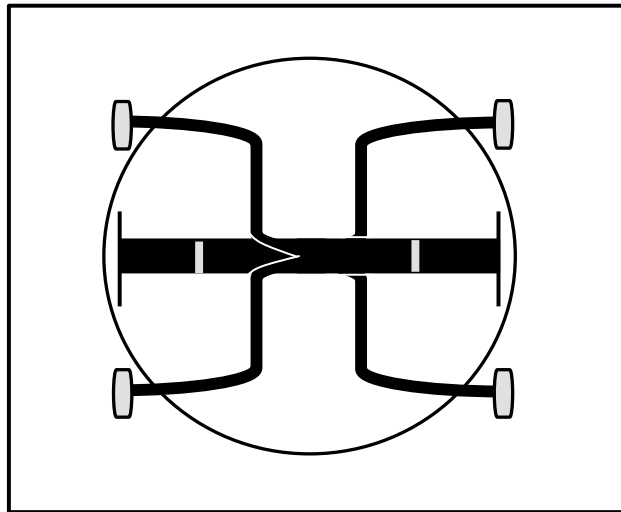
Cons:

- Seat won't be able to hold as much weight
- Less convenient access to storage
- Height for extra surface



Leg Alternative #1: Adjustable Legs

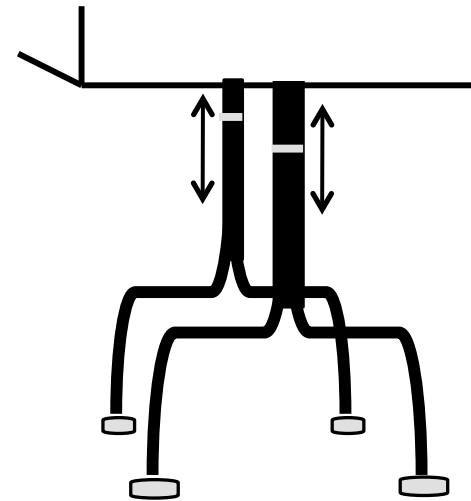
Bottom View:



Pros:

- Sturdy
- Good Balance
- Ease of Production
- Height Adjustment

Side View:

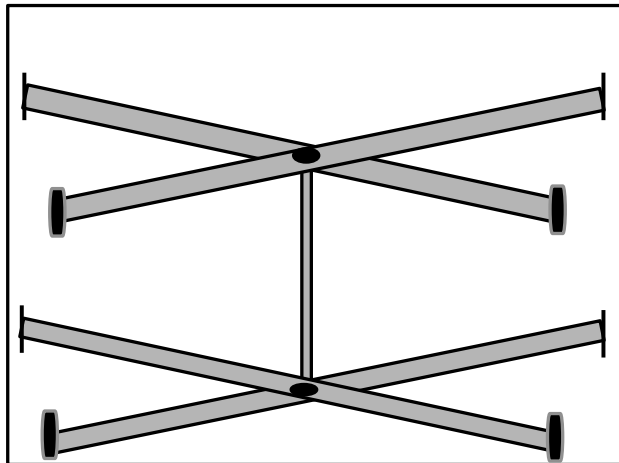


Cons:

- Less convenient to open legs

Leg Alternative #2: Collapsible Legs

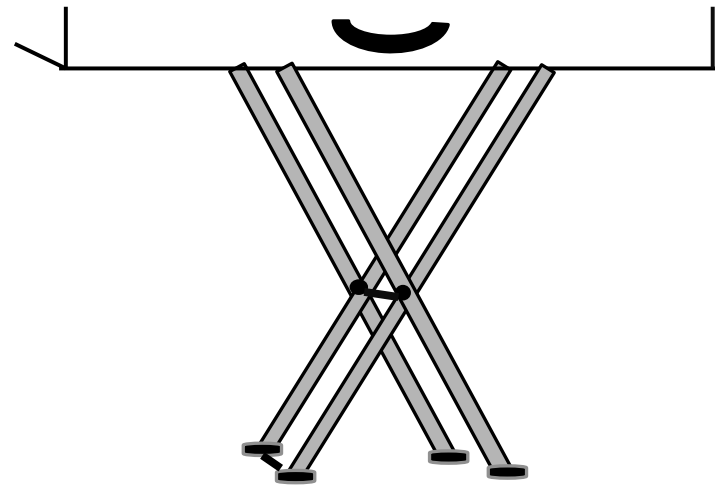
Bottom View:



Pros:

- Good Balance
- Foot pedal – used with handles to open chair easier

Side View:



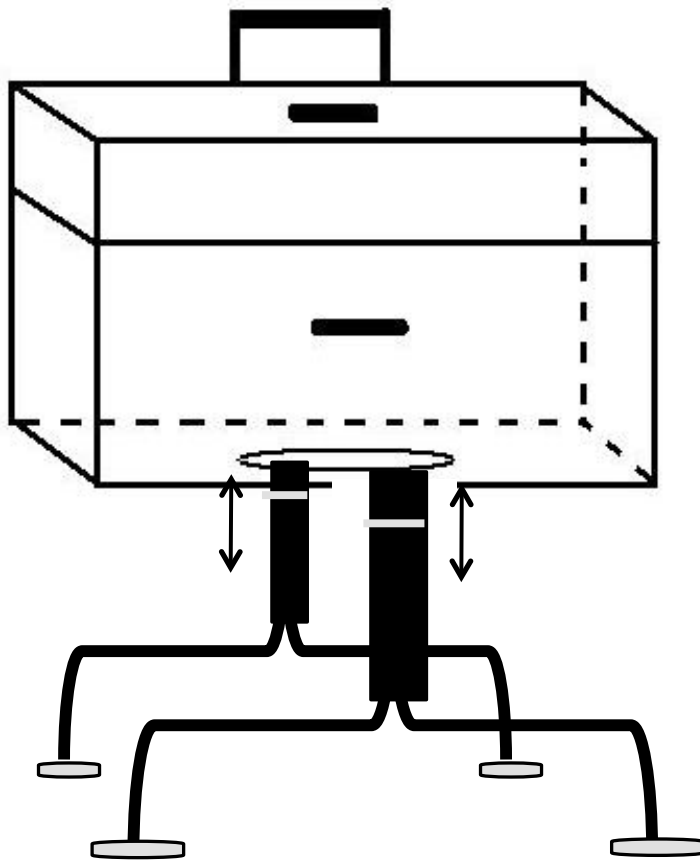
Cons:

- Only one height
- Stability
- Difficult to have legs connected to swivel mechanism

Design Matrix

Weight	Categories	Lawn Chair	Box w/Drawer		Box w/Flip Top	
			Leg 1	Leg 2	Leg 1	Leg 2
15	1) Ease of production	14	10		8	
10	2) Dimensions	8	10		10	
15	3) Cost	14	10		10	
15	4) Ease of transportation	10	14		14	
5	5) Aesthetics	4	5		5	
5	6) Client Preferences	1	5		2	
20	7) Load	13	17	13	17	13
15	8) Adjustability	12	12	7	12	7
100		76	83	74	78	69

Final Design Choice



- Box with drawer
- Adjustable legs
- Possibly include side surfaces



Future Work

- Finalize design details with client
- Collection of materials and supplies
- Campus resources
 - Student Machine Shop (ECB)
- Functionality Tests



Acknowledgments

- Michael Toepke
- Donita Croft, MD
- Ann Tomashek, APNP



References

Images:

- <http://www.bakati.com/s~q-stadium-seats.aspx>
- <http://www.911care>

Bag technique:

- <http://nursingcrib.com/nursing-notes-reviewer/community-health-nursing/bag-technique>

Questions

