



Home Health Device

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Project Motivation

Home health visits can be challenging for a variety of reasons including the amount of supplies needed to be carried along as well as where to place and how to handle the equipment. Many homes do not have sufficient seating or surfaces necessary for the care giver to work properly. A portable seat and storage device would help minimize these problems and lead to an overall improvement of the quality of the home health visit.



Figure 1: Example of existing home health bag

Project Requirements

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

Development

Box

- Constructed box from pine wood
- L-shaped brackets provide extra support
- Hinged door located on side of box
 - Opens from right to left rather than top to bottom
 - Handle attached to open easier
 - Door clasp allows more secure closure of door
 - No wood support on bottom of door
 - > Precaution due to wood warping over time
- White water-resistant, abrasive-resistant paint used
 - Easier to clean/keep sanitary
- Final outer dimensions: 20" by 16" by 14.5"



Figure 3: Box with side door and legs folded out

Storage

- Drawer
 - Main materials: Wire shelving, plastic cutting board, drawer slides
 - Wire shelving creates sides of drawer
 - Cutting board creates bottom of drawer
 - > Extra pieces used as connection for drawer slides
 - Final drawer dimensions: 14" x 18" x 12"
- Removable drawer lining
 - Material: Canvas
 - > Advantage: sanitation – washer friendly



Figure 3: Drawer with milk carton to demonstrate storage size

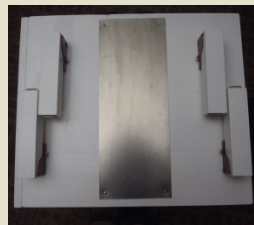
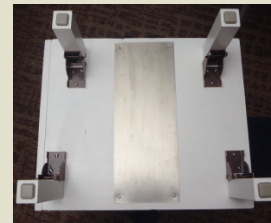


Figure 4: Legs folded and unfolded



Legs

- Complication: Adjustable legs
 - Most were too tall for chair
 - Height range not significant enough for expense
- Alternate approach used: Non-adjustable wood legs
 - 6-inch tall wood legs
 - Attached to bottom of box using foldable, locking metal brackets
 - Back legs farther apart in width than front legs
 - > Made folding of legs easier
 - Plastic chair sliders connected to bottom of four legs for protection of legs

Transportation

- Pre-manufactured luggage cart
 - Handle and wheels for ease of transportation
 - Temporary strap and cord secure seat during transportation
 - Will help tip chair backwards to fold legs out and in
- Metal plate attached to bottom of seat
 - Protects bottom of box from bars of luggage cart



Figure 5: In transportation

Extras

- Outside pocket
 - Provides extra temporary storage space
- Cushion
 - Added comfort for user when sitting
 - Removable
- Lifting handles
 - Attached to front and back sides of box



Figure 6: Side pocket located opposite of door

Testing

- Final Weight: 30 lbs



Figure 7: Testing of device in use

Future Work

- Adjustable legs with sufficient range
- Main frame material - plastic
- More secure attachment to luggage cart
- Reinforce drawer corners
- Add dividers and top flap to drawer lining



Figure 8: Adjustable leg consideration. Similar design could be implemented.

References

- <http://www.911care.com/nursingcrib.com/nursing-notes-reviewer/community-health-nursing/bag-technique>
- http://www.amazon.com/Products-013-135-Adjustable-Folding-Table/dp/B002N5YEZM/ref=pd_sxp_grid_pt_0_0

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