Project Statement

Wheel Me Up Scotty

Team #1

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Statement of Need –

People with disabilities face serious obstacles when undergoing various medical examinations. Standard examination equipment does not present a feasible option for examining patients with disabilities. This is most prevalent with people who are confined to wheelchairs and don’t have the range of mobility necessary to access forms of modern health care. Therefore, a great need exists for devices to assist people with said disabilities.

To make the project worthwhile for the customer the wheelchair platform device must be able to elevate the patient to the height of a standing person. Furthermore, the device must have 360° of rotation to maximize the ease of examination.

Basic Preliminary Requirements –

Wheelchairs are designed to assist people with disabilities by making daily tasks easier for them. The problem is that many health care procedures are not readily available to those confined to a wheelchair. A patient going to get a mammogram would be asked to stand, which poses a problem for someone in a wheelchair. This device will be used in any place that does not have appropriate accessibility.

While other products exist to aid people with disabilities in their daily routines, they do not provide the necessary assistance required in the healthcare field. Many similar products simply adjust the seat height or angle of the chair. While this assists patients in getting into the chair, its limited vertical range does not provide the necessary height for a proper medical examination.

To make the product feasible for everyday use, there are several requirements to bear in mind. The device must be portable, to do this it must be lightweight, i.e. under one hundred pounds. Additionally, the device must fit through standard doorframes. Concurrently the device should be produced at a cost to make it available to the average consumer. Finally, the device should be designed such that anyone can operate it.

Basic Limitations –

There are certain parameters to which this device must adhere. The device must move both vertically and rotationally at a speed that is both comfortable and practical to the user. The vertical elevation speed must lie between one foot per second and one foot per hour. The rotational speed must lie between one rotation per second and one rotation per hour. The device must be able to support both the weight of the person and the weight of the wheelchair. The stage area of the device and the angle of the ramp leading up to the device must comply with ADA standards. The device must be able to be powered by standard electrical outlets and/or battery.
Questions –

The first unresolved issue is whether or not this device will be purchased by the health care provider or the user. The materials that will be used to create the platform and the lift are unknown, the number of gears and motors are also unknown. Therefore, the size and weight of the final product has yet to be determined. Finally, the battery type is unidentified.