

Technology in medical clinics has changed dramatically in the last 25 years. Despite this, ways to pass the time in waiting rooms has changed very little. Exciting and affordable advances in digital entertainment have opened up new possibilities. A projector mounted on the ceiling can cast a large image onto either the floor or a wall space. By connecting it to a small computer and special motion capturing camera, a wide array of interactive games can be displayed onto otherwise unused area. Updating in this way will have several advantages for the hospital and the families it serves. The waiting area in the Cancer and Blood disorders center should be modernized in this way, with new projector based entertainment.

First is the aesthetic appeal. The waiting area is often one of the first impressions a family will have of the hospital. Having modern technology on display signals that the organization is wealthy and cutting edge. Having top rate entertainment in the waiting area helps perpetuate the persona of a world class organization. With construction about to begin on the new Cancer and Blood disorders building, an upgrade of this kind will also act as a preview of what is to come.

A second benefit is keeping the waiting area clutter free and organized. A lack of large and small toys around the floor and walls, keeps the room not only nice to look at but also reduces congestion and tripping hazards caused by these objects. By focusing the entertainment in one area we can consolidate the children at play leaving the rest of the room clear and more accessible for wheelchairs and wagons to navigate. This consolidation, coupled with the interactive nature of the games, has the added advantage of encouraging the children to interact with one another, building relationships in a place where they are likely to see one another frequently.

The low cost of adding new games and programs is the third benefit. With the price of games ranging from \$7-\$50 adding new options is very affordable. This platform would allow for the entertainment to change with the theme of the waiting area depending on the time of year. Keeping things fresh, new and exciting for our families is a small detail that goes along way when many of them are here to see us several days each week. If projector based entertainment was added to other areas of the hospital the investment cost on games drops even more as they can be used in more than one location.

Fourth deals with patient safety. This type of entertainment is more sanitary than traditional toys. Much of the interaction comes through movement and not physical contact with an object. The potential reduction of spreading harmful germs is huge. This is especially important to the patients who visit the Cancer and Blood disorder center as many of them have compromised immune systems.

The final part is the cost savings which comes from not needing to clean and sanitize the traditional toys¹. Even with the upfront equipment cost, and the energy usage, the projector breaks even in just over a year's time and saves approximately \$5,950 over the life of the projector bulb (when compared against the cost of labor over that same amount of time) after the projectors cost has been covered².

Given the points presented above the Cancer and Blood Disorder Center should modernize their waiting area by investing in a projection entertainment system to not only modernize, better serve our patients and families but reduce spending as well. I am requesting an authorization of \$1500 to make this project happen; broken down as follows:

1. Projector: \$700
2. Mini computer: \$300
3. Motion capture camera: \$150
4. Games and programs: \$50
5. Installation labor: \$300

Authorization for projector entertainment of \$1500. _____ Date: _____

¹ Labor cost calculation assumed ¼ of an hours work per day, five days a week, four weeks per month and twelve months. Pay rate used was Seattle minimum wage of \$15 per hour for a total cost of \$900 a year.

²Cost calculations were used from the product recommendations from the Lumo Play website. Costs were assumed at \$150 for the mini computer, \$150 for the motion cam and \$700 for the projector. Life of the projector based on the manufacturer's bulb life of 20k hours. Running time was assumed at ten hours a day five days a week for a total of 2400 hours a year. This gives the bulb a life span of approximately 8.3 years (rounded down to 8 for calculations). Projector manufacturer says it uses 180 Watts. Using this it was determined to use 9 kWh per week at ten hours per day and 432 kWh per year. This was multiplied by the Seattle area average for September 2018 or 11.1 cents per kWh according to the Bureau of Labor statistics website. This gives the projector a annual electricity cost of \$47.95 rounded to \$50 for this cost calculation. Upfront cost plus running cost over eight years for the projector is \$1,400. Eight years of cleaning costs using the calculations above is a total of \$7,200.