**PROJECT TITLE:** Inpatient Rehabilitation Exergames in Children with Cerebral Palsy (CP) after Lower Extremity Orthopedic Surgery

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**RATIONALE:**
- Children with CP often need lower extremity orthopedic surgery as they grow and pain is commonly experienced during the recovery period, aggravated further by muscle spasms.
- The **Liberi Exergames**, a recumbent bicycling-based exercise video game, was designed specifically for children and youth with CP, powered by pedaling on a stationary bicycle and using game controllers.

**OBJECTIVES:**
1. Determine the feasibility of implementing exergames into inpatient rehabilitation for children with CP
2. Evaluate if the exergames can reduce pain and improve psychosocial wellbeing in comparison to standard physiotherapy

**THE LIBERI EXERGAMES:**

**METHODS:**
- Case-comparison with consecutive recruitment of children with CP recovering from lower limb surgery into 2 groups: the first 5 participants enrolled in “comparison group” and the next 5 participants enrolled in the “case group”
- Comparison group will receive standard physiotherapy and case group will engage in 30 minutes of exergames play 5 times a week for 3 weeks in addition to standard physiotherapy.
- Primary outcome measures will evaluate feasibility based on:
  1. If <40% of participants who are eligible will enroll and consent,
  2. If 80% of participants complete the pain questionnaires, and
  3. If 12/15 exergame sessions are completed for each participant in the case group.
- Secondary outcome measures are questionnaires looking at pain, quality of life, and engagement, to be completed by both groups.

**RESULTS (SO FAR):**
- 100% of potential participants who were eligible for the study enrolled and consented.
- 100% of the current participants have completed all pain questionnaires.
- All current participants have completed at least 12/15 exergame sessions.

**NEXT STEPS:** The final participant will be starting exergames in July and data analysis will be completed to determine whether the exergames can reduce pain and improve psychosocial wellbeing.

**RELEVANCE:** These results will provide the basis for developing larger research studies to evaluate the benefits of cycling using novel and interactive technology.