The IRB at Boston Children’s Hospital generally conducts full review IRB meetings twice per month, and without the Principal Investigator in attendance. Due to the complexities associated with this protocol, the BCH had to adapt the review process in order to perform a more appropriate review.

**Overview of Proposed Research**
Bilateral hand transplantation in pediatric subjects

**Risks**
- Surgical and screening procedures
- Rejection of transplant
- Life-long Immunosuppression therapy
- Financial burdens after surgical costs and three months of follow-up care were provided by BCH

**Potential Benefits**
- Improved functional outcomes
- Improved health-related quality of life

**Principal Concerns of the IRB**
- Limited data available for long-term survival of grafts
- Compliance with immunosuppression
- Balanced discussion of risks and benefits in consent form
- Invasive screening procedures required
- Information provided on BCH website to be carefully reviewed as to not confuse research protocol with a treatment program within Hospital’s transplant department
- Age of subjects: younger subjects may be more compliant with immunosuppression therapy, but older subjects would be more involved in decision-making process

**Modified IRB Review Process**
- Four specially convened IRB meetings over the course of eight months to discuss this protocol only
  - Allowed for a devoted discussion of the complex nature and ethical concerns of this study
  - Ensured that specific IRB members with relevant expertise were in attendance
- PI attended IRB meetings
  - Dynamic discussion enabled issues to be worked through in real-time
  - Complex medical discussions were not “lost in translation” by IRB staff that would be documenting the meeting and writing the reports of action

**Specialty Expertise of IRB**
- Coincidentally, one member of the IRB has a congenital upper limb deficiency and was able to offer a unique potential subject perspective
- This IRB also has two surgeons serving as members

**Input from research team**
- Initiated a pre-submission meeting with IRB administrator in order inform process for IRB review
- Benefit of in-person meetings resulted in clearer understanding of IRB’s concerns
- Submission of data from other institutions researching adult hand transplantation

**Issues outside the purview of the IRB**
- Donor Considerations – BCH Post-Mortem Research Committee reviewed ethical considerations for pediatric hand donors, in coordination with the New England Organ Bank
- BCH Office of Public Affairs – Delicate balance between recruiting for research and informing the public about the hospital’s high-profile endeavors

**Conclusions**
- Importance of IRB Flexibility in Reviewing Complex Research – Adapting from our standard procedures for reviewing research allowed for more informed discussion and better resolutions of ethical concerns
- Subject Perspective – We were able to have a unique subject perspective, because one of our IRB members has an upper limb deficiency. This perspective greatly enhanced the review process. For first-in-human trials, IRBs may want to consider soliciting the perspective of a subject with the disease or disorder under study, even if only on a consultant basis.
- Collaborative effort between IRB, research team, and other departments in the hospital greatly facilitated the review and eventual approval of this research