**Interventions to Improve Clinical Care: Neonatal Screening, Vaccination, PCN Prophylaxis**

**Rationale:**

Important opportunities exist to improve outcomes for patients with SCD in Africa. Comprehensive neonatal screening has thus far only been carried out in the Ashanti region of Ghana. While physicians caring for patients with SCD, recommend vaccination for pneumococcus and routine PCN prophylaxis, this is often difficult to achieve on a consistent basis. Intervention studies that could serve as guides to improvement of care for SCD might influence policy by demonstrating the magnitude of benefit of low cost, simple interventions and creating model programs where non-physician personnel could provide these routine services. Use of placebo control groups would be unethical for therapies that have well-established benefit so the design of appropriate trials will be a major challenge.

Given the very substantial mortality in children with SCD historical trends in genotype in the population – both SS and AS – could potentially provide an estimate of the magnitude of the benefit, however such a design would likely require a large sample size and relatively long follow-up. We can learn from the extensive experience of the Jamaican Sickle Cell Cohort Study providing high rates of pneumococcal vaccination and penicillin injections as prophylaxis in low-resource conditions, but obviously need to adapt this experience to the local health system. We recognize that implementing chronic preventive therapy requires extensive efforts in community engagement and health education.