



## 2019 GiveWell Grants for Global Health and Development in Southeast Asia and Bangladesh

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I'm pleased to submit MiracleFeet's application for the 2019 GiveWell Grants for Global Health and Development in Southeast Asia and Bangladesh. Please see our answers to the questions below, and supporting documents can be viewed at this [Dropbox link](#). Please let me know if you have any questions or experience difficulty accessing the documents.

### 1. What does the charity do?

MiracleFeet partners with local healthcare providers in low- and middle-income countries (LMICs) to increase access to treatment for children born with clubfoot. Over one million children live with untreated clubfoot, and one in 800 children worldwide (approximately 175,000) are born with this condition every year. Approximately 8,800 total children are born with clubfoot each year (and an estimated 50-70,000 children aged 1-10 years old are currently living with untreated clubfoot) in the four Southeast Asian countries – Bangladesh, Cambodia, Myanmar, and the Philippines – where MiracleFeet currently works. (See *attached partner agreements and scopes of work*.)

Clubfoot causes one or both feet to turn inward and upward, making it difficult and painful to walk. Although clubfoot is routinely addressed at birth in developed countries, 90% of children born with clubfoot live in LMICs, where there is limited or no access to treatment. As a result, they live with lifelong disability. This highly vulnerable and disadvantaged group of children are often marginalized, illiterate, and at an increased risk of poverty, physical abuse, and sexual violence. Fortunately, treatment through the non-surgical Ponseti method is easy, cost-effective, and well-suited for low-resource settings. After treatment, the feet are fully corrected, and children are able to walk without pain, attend school, participate in their communities, and pursue the employment that they desire. (See *attachment: Global Clubfoot Strategy*.)

MiracleFeet provides organizational, technical, and financial support to clinics in public hospitals throughout the world. The efficiency of the MiracleFeet model combined with the effectiveness of the Ponseti method makes it possible to scale treatment in a way that is comprehensive, sustainable, and low-cost. The MiracleFeet model involves increasing treatment coverage for all children born with clubfoot in target LMICs, meeting global quality metrics for clubfoot treatment in MiracleFeet-supported clinics, and achieving sustainability in all programs by establishing a national clubfoot program in these countries. (See *attachments: Programs Operating Plan*.)

Other key components of MiracleFeet's model are our innovative tools and our monitoring and evaluation protocol. We have invested in tools to address some of the systemic hurdles to scaling clubfoot treatment globally, including the MiracleFeet Brace and a set of digital tools that are used for healthcare provider training and data collection. MiracleFeet has always placed great importance on collecting data to monitor quality of treatment, and our monitoring and evaluation protocol is designed to review treatment being implemented in the field, determine efficacy, and inform how we progress and expand within specific programs and regions. (See *attachments: MiracleFeet Brace - WHO Global Forum, MiracleFeet Brace – One Page Summary, MiracleFeet Tech One-Pager, Monitoring and Evaluation Protocol*.)

### 2. What is the evidence that the program works?

MiracleFeet's expansion across regions and within countries is evidence that we've been able to scale our programs consistently and effectively for clubfoot treatment. Since MiracleFeet began its work eight years ago, the MiracleFeet model has expanded to 26 different countries and enrolled 36,000 children in treatment.

- a. MiracleFeet retained Lean Data of the Acumen Fund to conduct an evaluation of the long-term impact of MiracleFeet's work. Lean Data spoke by phone to 470 families whose children started treatment over 2 years ago in three countries, Tanzania, India, and the Philippines, to learn how the children were doing in terms of their ability to participate in age-appropriate activities. These countries were selected because they had a large enough sample size of children who met the criteria; the questions were constructed to eliminate bias; and Lean Data conducted these surveys as outside evaluators. Additionally, they conducted an email survey soliciting feedback from our local partners across all programs. (See *five Lean Data attachments*)

Also, please see:

- b. the attached M&E Dashboards
- c. the following peer-reviewed academic articles, which address the following subjects in relation to clubfoot treatment:

#### The importance of treating clubfoot (i.e. argument in favor of treatment vs. no-treatment):

- Dobbs MB, Morcuende JA, Gurnett CA, et al. Treatment of idiopathic clubfoot: an historical review. *Iowa Orthop J* 2000;20:59–64. (<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC1888755/>)

- Sanzarello I, Nanni M, Faldini C. The clubfoot over the centuries. *J Pediatr Orthop B*. 2017 Mar;26(2):143-151. ([https://journals.lww.com/jpo-b/Abstract/2017/03000/The\\_clubfoot\\_over\\_the\\_centuries.8.aspx](https://journals.lww.com/jpo-b/Abstract/2017/03000/The_clubfoot_over_the_centuries.8.aspx))

#### Use of the Ponseti Method, establishing it as the standard of care:

- Morcuende JA, Dolan LA, Dietz FR, Ponseti IV. Radical Reduction in the Rate of Extensive Corrective Surgery for Clubfoot Using the Ponseti Method. *Pediatrics* 2004;113:376-380. (<http://pediatrics.aappublications.org/content/113/2/376>)
- Zions LE, Sangiorgio SN, Ebramzadeh E, Morcuende JA. The Current Management of Idiopathic Clubfoot Revisited: Results of a Survey of the POSNA Membership. *J Pediatr Orthop* 2012;32:515–520. (<https://www.ncbi.nlm.nih.gov/pubmed/22706469>)

#### Ponseti method vs. surgery (specifically) to treat children under 2:

- Ippolito E, Farsetti P, Caterini R, Tudisco C. Long-Term Comparative Results in Patients with Congenital Clubfoot Treated with Two Different Protocols. *J Bone Joint Surg Am* 2003;1286-1294. (<https://www.ncbi.nlm.nih.gov/pubmed/12851354>)
- Smith PA, Kuo KN, graf AM, Krzak J, Flanagan A, Hassani S, Caudill K, Dietz FR, Morcuende J, Harris GF. Long-term Results of Comprehensive Clubfoot Release Versus the Ponseti Method: Which Is Better? *Clin Orthop Relat Res* (2014) 472:1281–1290. (<https://www.ncbi.nlm.nih.gov/pubmed/24249539>)
- See attachment: Ponseti Method is Superior to Surgical Treatment in Clubfoot – Long-term, Randomized, Prospective Trial. *Gait & Posture* 58 (2017) 346-351.

#### Establishing a clubfoot program (i.e. the need for MiracleFeet):

- Miller NH, Carry PM, Mark BJ, Engelman GH, Georgopoulos G, Dobbs MB. Does Strict Adherence to the Ponseti Method Improve Isolated Clubfoot Treatment Outcomes? A Two-institution Review. *Clin Orthop Relat Res*. 2016 Jan;474(1):237-43. (<https://www.ncbi.nlm.nih.gov/pubmed/26394639>)
- Mayne AIW, Bidwqu AS, Beirne P, Garg NK, Bruce CE. The effect of a dedicated Ponseti service on the outcome of idiopathic clubfoot treatment. *Bone Joint J* 2014;96-B:1424–6. (<https://online.boneandjoint.org.uk/doi/pdf/10.1302/0301-620X.96B10.33612>)

#### Cost-effectiveness of clubfoot treatment:

- Grimes CE, Holmer H, Maraka J, Ayana B, Hansen L, Lavy CBD. Cost-effectiveness of club-foot treatment in low-income and middle-income countries by the Ponseti method. *BMJ Glob Health*. 2016 May 26;1(1):e000023. (<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5321308/>)

### 3. What is the program's budget?

See attachments: MiracleFeet Budget Document (includes program budgets) and Partner Agreements/Scopes of Work.

### 4. How would the charity use an additional \$250,000?

MiracleFeet's long-term goal in every country is to expand our coverage to reach 70% of all children born with clubfoot. This is done by training healthcare workers in the Ponseti method, hiring and training parent educators, ensuring medical supplies are available (especially braces), adding more clinics to reduce travel time for families, investing in clubfoot awareness campaigns, and creating early diagnosis and referral processes. In the process, MiracleFeet creates a comprehensive national clubfoot program, which strengthens the national health system, and works closely with ministries of health to integrate the program into the local public health infrastructure for a long term and permanent solution to clubfoot management.

An additional \$250,000 would support key components of our expansion plans: healthcare provider trainings, treatment supplies and clinical equipment, awareness campaigns, early identification efforts, and monitoring and evaluation programs. This would provide MiracleFeet with more support to reach its target of 70% coverage in Bangladesh, Cambodia, Myanmar, and the Philippines. Currently, we are reaching 30% in Bangladesh (1,200 out of 3,900 children born with clubfoot each year), 39% in Cambodia (200 out of 508 children born with clubfoot each year), 36% in Myanmar (420 out of 1,166 children born with clubfoot each year), and 20% in the Philippines (650 out of 3,253 children born with clubfoot each year.) Expanding treatment coverage to 70% increases the total number of children treated in these countries to approximately 6,100 each year, and unleashes an average of \$68,615 in gained additional lifetime earnings per child. For an average treatment cost of only \$232 per child, this is a remarkable return on investment. Very simplistically, \$250,000 would totally change the trajectory of the lives of approximately 1,070 children, potentially generating an additional \$74M in future earnings, and contributing to a permanent solution to clubfoot for future generations in the Philippines, Myanmar, Cambodia and Bangladesh.

