

# Integrating early intervention for clubfoot deformity into national plans in under-resourced nations

Penny N., Lavy C., Mannion S., Mayo A., Morcuende J., Owen R.

**Clubfoot** is a congenital deformity affecting approximately 200,000 children worldwide each year.



An estimated 80% of these are born in under-resourced nations with limited capacity for identification and treatment of clubfoot.

The **Ponseti method** is a treatment technique for clubfoot which has been found to be up to **98% effective when started in babies**.

## The Ponseti method

**Correction of deformity:** Serial manipulation and casting the foot over 4-8 weeks, followed by a small surgery, an 'Achilles' tenotomy' to release the Achilles tendon.



**Maintaining correction:** Foot abduction braces are worn for 3 months full time, then at night-time only until age 4 years.

**National programmes for clubfoot:** Following the success of the Uganda Sustainable Clubfoot Care Programme a number of national programmes for clubfoot were established in under resourced nations. **The aim: to prevent disability caused by clubfoot through national programmes providing effective treatment.**

## Neglected (untreated) clubfoot:



- Pain
- Deformity
- Ulceration
- Difficulty walking
- Stigma

- Reduced access to education, work and marriage

## Clubfoot treated with Ponseti method:



- No visible deformity
- No walking disability
- Free from pain, deformity and stigma

## Methodology:

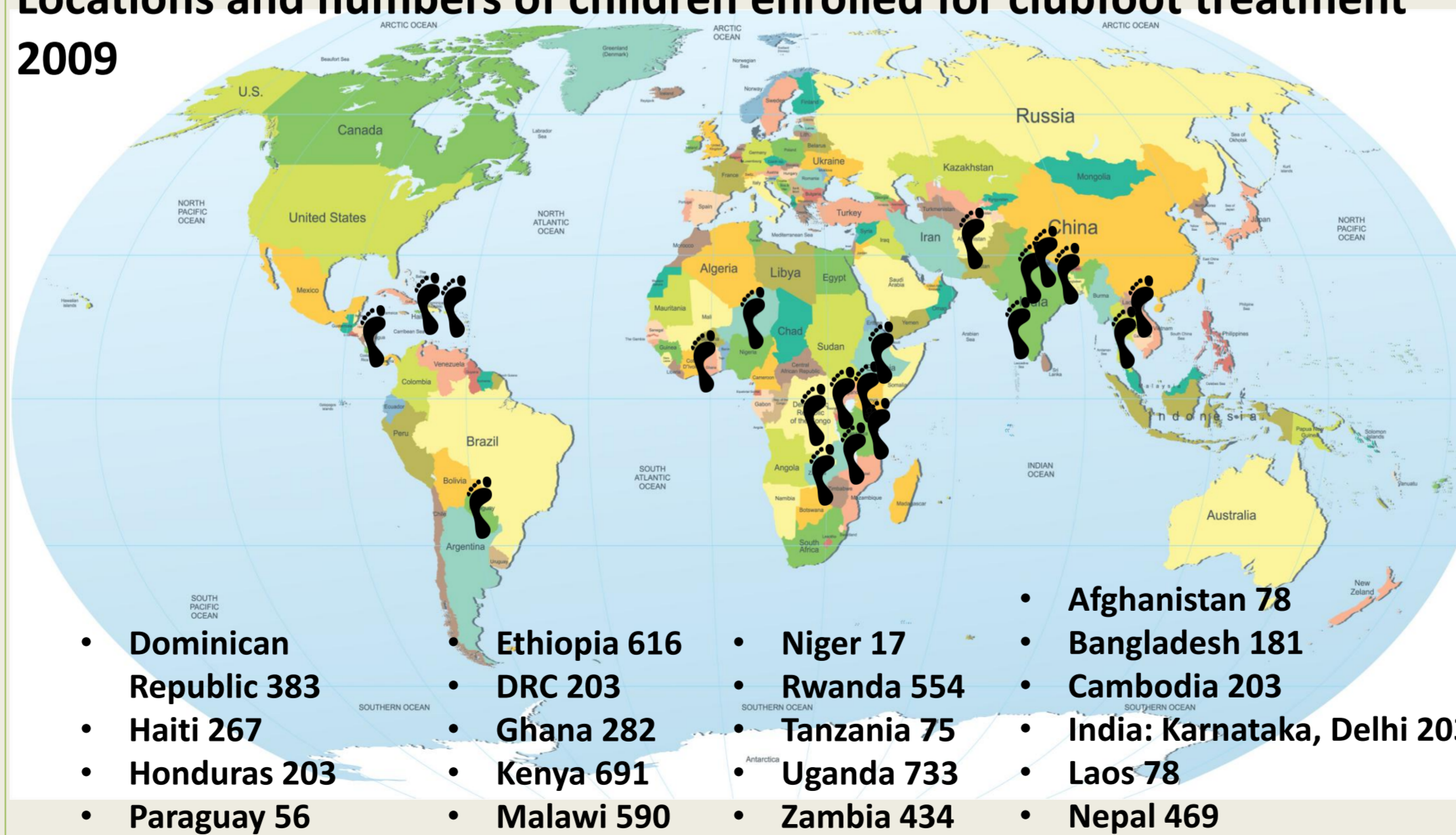
National programmes were established in 20 under-resourced nations using the following methods:

- **Forming partnerships** with Ministries of Health (MOH), community based rehabilitation networks and local non-governmental organisations (NGOs).
- **Appointing a medical director and a national coordinator** for the programme
- **Awareness raising** campaigns, training in clubfoot recognition
- **Training health workers** in all aspects of the Ponseti technique, including theory and practical training and providing ongoing support and supervision
- **Establishing clinics** throughout the country; clinical services provided in MOH, private and NGO centres as available.
- **Supporting treatment provision** by providing financial support for supplies of materials such as plaster of Paris.
- **International NGO support** for logistical, administrative and material needs.

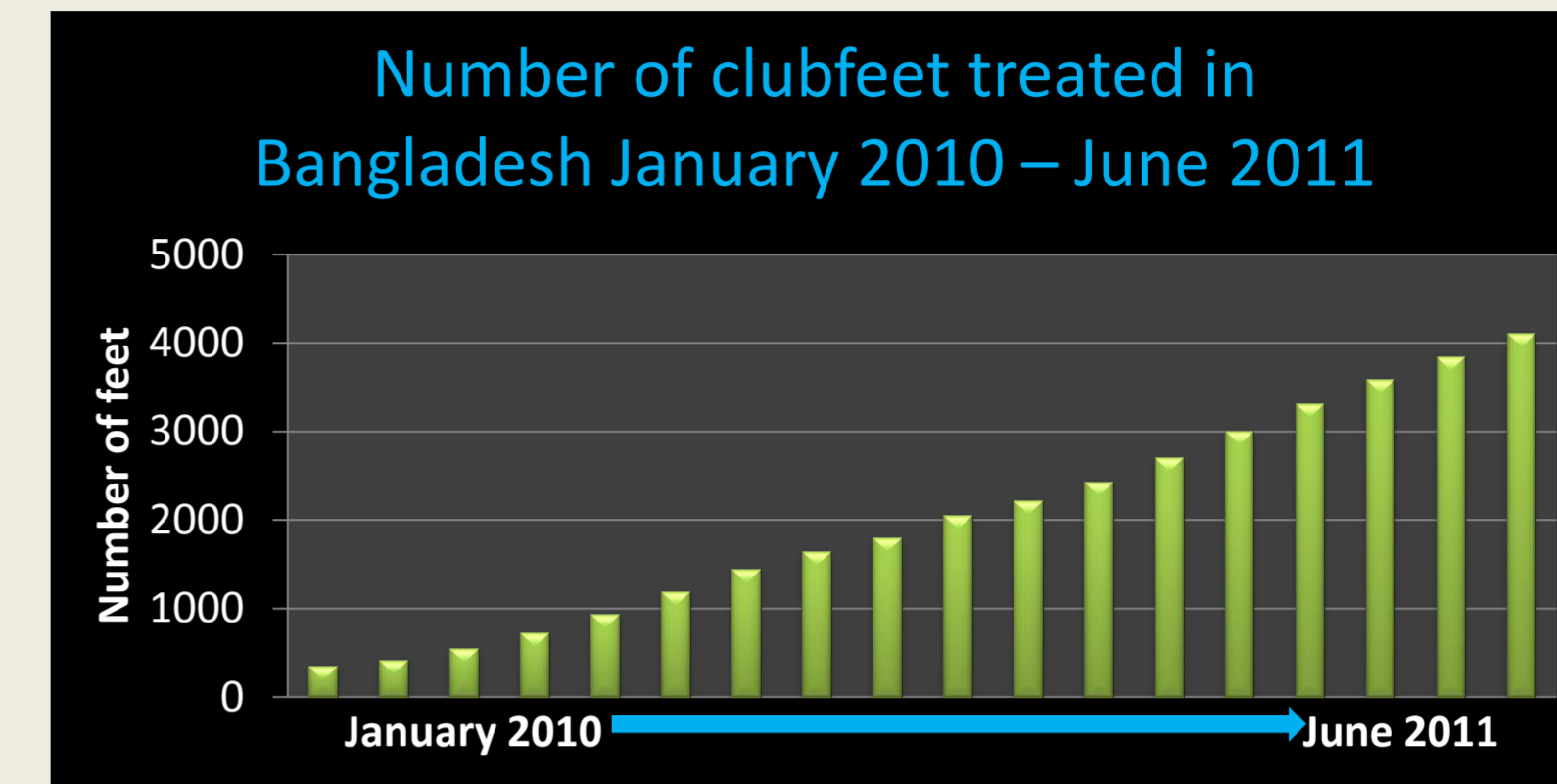
**Evaluation:** (1) data audit from all 20 countries. (2) 40 key informant interviews including service providers and users from 12 of the 20 countries, (3) observational visits to Ethiopia and Laos.

**Findings:** The sample year 2009 was selected for review.

## Locations and numbers of children enrolled for clubfoot treatment 2009



**A total of 6591 children across the 20 countries and regions were enrolled for treatment in 2009** with some national programs approaching and surpassing intervention for 50% of all babies projected to be born with clubfoot.



Awareness raising and establishing clinics results in steady increases in the numbers of children identified and treated for clubfoot.

## Factors for success in national programmes for clubfoot:

- Ministry of Health involvement
- Strong country leader (medical director)
- Country coordinator
- Geography – smaller countries with better transport links
- Strong NGO management support

## Barriers to success in national programmes for clubfoot:

- Parental adherence to treatment regime
- Difficulties with getting tenotomies done
- Irregular supply of materials and foot abduction braces

**Significance:** the initiatives fulfil a number of resolutions from the 58<sup>th</sup> World Health Assembly (as shown in the table below).

Strengthen national programs, policies and strategies	✓
Increase awareness of disabling conditions	✓
Participate in Prevention of Disability activities	✓
Promote early identification and intervention, especially for children	✓
Promote and strengthen community programs linked to primary health care	✓
Integrate into national programs	✓
Collect more reliable data	✓
Conduct studies of incidence, prevalence as a basis for formulation of strategies for intervention	✓
Strengthen collaborations with academia, the private sector and non-governmental organizations	✓

**The future:** The success of national programmes for clubfoot worldwide is now leading towards a global plan. The first evidence of this is the Global Clubfoot Initiative, a web based data collection and networking site established by the NGO consortium.



**References:**  
 1. Penny N (2005) The neglected clubfoot. *Techniques in Orthopaedics* 20 (2): 153-166  
 2. Pirani S, Maddumba E, Mathias R, Konde-Lule J, Penny N, Beyeza T, Mbonye B, Amoni J, Franceschi F (2009) Towards effective Ponseti clubfoot care: the Uganda Sustainable Clubfoot Care Project. *Clinical Orthopaedics and Related Research* 467: 1154-1163  
 3. Morcuende J (2006) Congenital idiopathic clubfoot: prevention of late deformity and disability by conservative treatment with the Ponseti technique. *Pediatric Annals* 35 (2): 128-136  
 4. WHO Disabilities and Rehabilitation Team (no date) Disability and Rehabilitation WHO Action Plan 2006-2011. Available at: [http://www.who.int/disabilities/publications/dar\\_action\\_plan\\_2006to2011.pdf](http://www.who.int/disabilities/publications/dar_action_plan_2006to2011.pdf). Accessed on December 4, 2010.