

Africa Clubfoot Training

Course Report

London, 18-22 September 2017

Course Summary

A week-long series of Africa Clubfoot Training courses was held at Imperial College London on 18-22 September 2017, attended by a wide range of instructors and participants involved in clubfoot treatment and training in the following countries: Bangladesh, Cameroon, Dominican Republic, Ecuador, Guinea-Bissau, Honduras, India, Mexico, Paraguay, Philippines, Rwanda, South Africa, Tanzania, Uganda, UK & USA. The course was funded through supporters of the Africa Clubfoot Training OxReach crowdfunding campaign run by University of Oxford, with co-funding from other Global Clubfoot Initiative organisations.



Figure 1 Trainers and international participants

Monday 18 & Tuesday 19 September 2017

The week began with a 2-day Clubfoot Train The Trainer Course led by Linda Hansen for 18 international participants, which covered principles and skills of effective training with adult learners, and gave the participants opportunity to practice using the a new ACT clubfoot provider teaching materials.

Wednesday 20 & Thursday 21 September 2017

This was followed by a 2-day Basic Clubfoot Treatment Provider Course led by John Cashman and delivered by the TTT participants from days 1 & 2, and attended by a new cohort of 23 participants, a were a group of UK physiotherapists and surgeons involved in clubfoot care. The theory and practical

teaching sessions were divided up and delivered by new instructor team, with mentoring support from the lead instructors from the TTT course. The new instructors received feedback from their mentor and peers after each of their teaching sessions, to help integrate the principles and skills from the TTT course into their teaching practice. The practical sessions included manipulation of skeleton clubfoot models, plaster of Paris casting on rubber clubfoot models, and meeting families of children wearing braces to discuss brace-fitting.

Friday 22 September 2017

On the final day of the course, the lead instructor team, led by Guy Atherton, delivered the 1-day version of the Advanced Non-Surgical Clubfoot Treatment Provider Course, to the 18 international participants, who were joined by a new cohort of 26 UK physiotherapists and surgeons involved with clubfoot care. The day included a practical session on casting for atypical clubfoot, and case discussions.

Next Steps

- During the week, each region also discussed the potential for roll-out, translation or modification of the ACT course materials for use in training providers in Asia, Latin America, and the UK.
- Plans are underway for translation of the materials into Spanish in 2018.
- The UK Clubfoot Consensus Group are planning to use some of the materials for UK based training in 2018. Miraclefeet are working to develop animations to support the ACT materials, through funding from a grant from Google.
- The ACT materials have been adapted for use in a mass open online course run by Physiopedia, jointly with Global Clubfoot Initiative and ICRC.
- Another ACT Train The Trainer course is planned for 2018 in East Africa with co-funding from the ACT OxReach campaign and other partners.
- The French translations of the ACT materials were made available in November 2017.



Figure 2 TTT discussion group

With thanks to our project partners and the supporters of the ACT OxReach crowdfunding campaign, who include:



UK Clubfoot Consensus Group



We are also gratefully acknowledge funding from the Health Partnership Scheme funded by the UK Department for International Development through the Tropical Health Education Trust who funded the first phase of the ACT Project and development of the training materials. We would like to thank CURE Ethiopia Children's Hospital, CURE Clubfoot Rwanda, Ethiopia and Kenya programmes, and Chelsea & Westminster Hospital who all co-hosted the pilot courses.

Finally, we are very appreciative of the incredible effort and time given, not only by the instructor team for this course, but to all the experts, advisors, practitioners, organisations, pilot course participants, and patient families who have contributed to the development of the ACT course materials and given valuable feedback to the editorial team.

Contact: actproject@ndorms.ox.ac.uk or <https://globalclubfoot.com/>

OxReach Crowdfunding Campaign: <https://oxreach.hubbub.net/p/clubfoot/>

ACT Project: www.ndorms.ox.ac.uk/act.php

Images and text © Copyright University of Oxford



Figure 3 Preparing to start the Basic course



Figure 4 Henry Musoke from the Uganda Clubfoot Program teaching on the Basic Clubfoot Treatment Provider Course



Figure 5 Practising the Ponseti method of manipulation



Figure 6 Nick Veltjens, trainer from Mercy Ships



Figure 7 Practising casting on rubber models



Figure 8 Prof. Fred Dietz teaching on common errors



Figure 9 Mamun Chowdhury and Sharifal Khan from Walk for Life Bangladesh, with Michiel Steenbeek (CBM)

Figure 10 Andrew Myers and Linda Hansen from CURE Clubfoot, and John Cashman



Figure 11 Clubfoot trainers working in Africa



Figure 12 Clubfoot trainers working in Latin America

Appendix 1: Course Attendees

Team 1 – Lead Instructors & Organising team

Guy	Atherton	Bristol Royal Hospital for Children	Consultant Orthopaedic Surgeon
John	Cashman	Sheffield Children's Hospital	Consultant Orthopaedic Surgeon
Frederick	Dietz	University of Iowa	Emeritus Professor
Linda	Hansen	CURE Clubfoot Africa	Regional Director, Africa
Chris	Lavy	University of Oxford	Consultant Orthopaedic Surgeon
Grace	Le	University of Oxford	Programme Manager
Stephen	Mannion	CBM	Consultant Orthopaedic Surgeon
Rosalind	Owen	Global Clubfoot Initiative	Executive Director
Tracey	Smythe	LSHTM	Physiotherapist
Michiel	Steenbeek	CBM	Senior Advisor Physical Impairment & Rehabilitation
Denise	Watson	Chelsea & Westminster Hospital	Extended Scope Physiotherapist in Paediatric Orthopaedics

Team 2 - Train The Trainer Course Participants

Mohammad Mamun Hossen	Chowdhury	Walk for Life, Bangladesh	Program Manager (Physiotherapist)
Ana Lúcia	Costa Rodrigues	ICRC, Guinea Bissau	Physiotherapist
Christine	Douglas	Royal National Orthopaedic Hospital, Stanmore	Extended Scope Paediatric Physiotherapist
Catherine	Duffy	Musgrave Park Hospital, Belfast	Consultant Orthopaedic Surgeon
Alison	Hulme	Chelsea & Westminster Hospital	Consultant Orthopaedic Surgeon
Md. Shariful Islam	Khan	Walk for Life, Bangladesh	Program manager and Trainer(Physiotherapist)
Shah Alam	Khan	CURE Clubfoot India	Professor
Diriisa	Kitemagwa	Mulago Regional Referral Hospital, Uganda	Senior Orthopaedic Officer
Emmanuel	Kowero	Mbeya Zonal Referral Hospital, Tanzania	Physiotherapist Officer
Ramon	Lagos Andino	Hospital Escuela, Honduras.	Pediatric Orthopedic Physician
Gibran	Mancheno	Miraclefeet, Ecuador	Orthopaedic Consultant
Pieter	Maré	STEPS, South Africa	Head Clinical Unit, Paediatric Orthopaedics, Grey's Hospital
Anil	Mehtani	CURE Clubfoot India	Director Professor
Henry	Musoke	Gulu Regional Referral Hospital, Uganda	Orthopaedic Officer
Juan Agustin	Valcarce Leon	Miraclefeet, Mexico	Pediatric Orthopedics
Nicholas	Veltjens	Mercy Ships, Cameroon	Mercy Ships Ponseti Clinic Coordinator / Physiotherapist

Rosa Elizabeth	Vidal de Pericchi	CURE Clubfoot Dominican Republic	Medical Director
Rosalyn	Flores	Miraclefeet, Philippines	Orthopaedic Surgeon

Course Observers

Jen	Everhart	Miraclefeet, Africa	Senior Program Manager, Africa
Santosh	George	CURE Clubfoot India	Regional Director for Asia
Trine Boe	Heim	Miraclefeet	Technical Coordinator
Andrew	Myers	CURE Clubfoot Latin America	Latin America Regional Director
Scott	Reichenbach	CURE Clubfoot	Operations Director
Marie France	Roux Rivas	Miraclefeet, Latin America	Program Manager
Stephanie	Zimmerman	Miraclefeet	Manager of Digital Solutions and Innovations

Appendix 2: Clubfoot Train The Trainer Course, Monday 18 – Friday 22 September 2017

#	Start	Mins	Session
			Day 1 – Monday 18 September 2017
	08:30		Arrival and Registration
1	09.00	30	Welcome & Introduction
2	09.30	15	Pre-Course Assessment
3	09.45	20	Meet your TTT Mentoring Group
4	10.05	30	Effective Training and Learning 1: Learning Theory
5	10.35	30	Effective Training and Learning 2: Interactive Teaching
	11.05	20	Tea
6	11.25	30	Leading Small Group Discussions
7	11.55	30	PRACTICAL 1: Leading Small Group Discussion
8	12.25	40	Giving Effective Feedback
	13.05	55	Lunch
9	14.00	30	Teaching a Practical Skill
10	14.30	60	PRACTICAL 2: Teaching a Practical Skill and Giving Feedback
	15.30	15	Tea
11	15.45	30	Giving a Large Group Presentation with Slides
12	16.15	45	Organizing Clubfoot Courses
13	17.00	15	PREPARATION FOR PRACTICAL 3: Teaching Large Groups (Assign Mini-Lectures)
14	17.15	15	Closing Session Day 1
15	17.30	30	Meet with Mentors (as needed for preparation of mini-lectures)
			Day 2 – Tuesday 19 September 2017
16	09.00	15	Opening Session Day 2
17	09.15	45	Supervision and Mentoring
18	10.00	60	Measuring Clubfoot Treatment and Clinic Quality
	11.00	20	Coffee
19	11.20	105	PRACTICAL 3: Teaching Large Groups and Giving Feedback (Give Mini-Lectures) (Comfort break halfway)
	13.05	55	Lunch
20	14.00	15	Post-Course Assessment
21	14.15	15	Pre- and Post-Course Assessment – Correct Responses
22	14.30	15	Reflection in Mentoring Groups
23	14.45	15	Closing Session Day 2, Including Evaluation Forms
24	15.00	30	Basic Provider Course Standardization
	15.30	15	Tea
25	15.45	60	Briefing Session on Teaching the Basic Clubfoot Treatment Provider Course
26	16.45	30	Meet with Basic Course Mentors (as needed for preparation of Basic Course allocated sessions)

Appendix 3: Basic Clubfoot Treatment Provider Course (BPC) Timetable 20 & 21 September 2017,

Start	Mins	Number	Session
			DAY 1. Wednesday 20 September 2017
08:30	30"		Registration
09:00	15"	1	Day 1 Opening Session (Welcome, course overview, introductions, ice-breaker, & formation of small groups)
09:15	15"	2	Pre-course Assessment
09:30	30"	3	Introduction to Clubfoot and the Ponseti Method
10:00	30"	4	Anatomy and Definitions
10:30	30"		Tea
11:00	20"	5	The Clubfoot Deformity – CAVE
11:20	30"	6	How to Assess the Severity of a Clubfoot Using the Pirani Score
11:50	40"	7	The Ponseti Method of Manipulation
12:20	30"	8	Practical Session 1: Small group hands-on manipulation of rubber models and skeleton models
12:50	40"		Lunch
13:30	30"	9	Applying Clubfoot Casts
14:00	15"	11	Room Set up for Practical Session 3
14:15	60		Practical Session 3: Casting on rubber models (in small groups of 3)
15:15	30"		Tea
15:45	30"	12	Practical Session 3 Continued
16:15	30"	13	Practical Session 4: Ponseti video
16:45	15"	14	Day 1 Closing Session

			DAY 2. Thursday 21 September 2017
08:30			Instructors (Team 2) and Mentors (Team 1) arrive.
08.45			Participants (Team 3) arrive
09:00	20"	15	Day 2 Opening Session (Review)
09:20	30"	16	The Tenotomy and When to Do it [Choose generic or detailed tenotomy lecture or merge]. Plus show tenotomy video.
09:50	40"	17	Maintenance Phase: Bracing and Relapse
10:30	30"		Tea
11:00	120"	10 19	Practical Session 2: Demonstration of Pirani score and casting (with patients) - 45-60mins Practical Session 6: Brace fitting
13:00	60"		Lunch
14:00	30"	20	When to Stop and Rethink Treatment
14:30	15"	21	Post-course Assessment
14:45	30"	22	Day 2 Closing Session (Review, evaluation forms, and certificates)
15:15	30"		Tea [Team 3 Basic Course UK Participants Depart]
15:45	60"	23	New session/discussion to add - Implementation Considerations: How to run the Basic Course practicals with live patients How to run the Advanced practicals and case studies with live patients Running TTT courses
16:45	45"	24	Day 2 Closing Session for Team 1, 2, and Observers Discussion around adaptation of the course for other regions (Asia, LatAm)
17:30			End of Day 2.
			Team 1 Debrief & Prep for Advanced Course

Appendix 4: Advanced Non-Surgical Clubfoot Treatment Course

Friday 22 September 2017

	mins	#	Session
08.30-09.00			Registration
09.00-09.30	30	1	Welcome, intro, MCQs
09.30-10.00	30	2	Review of Ponseti Method
10.00-10.30	30	3	Advanced Ponseti method for idiopathic clubfoot
10.30-11.00	30	4	Common Errors
11.00-11.30	30		Tea
11.30-12.15	45	5	Atypical Cases inc video
12.15-12.45	30	6	Relapse inc case study
12.45-13.15	30	7	Treating Older Children inc case study
13.15-14.00	45		Lunch
14.00-15.15	75	9	Practical 1: Part 1 is refresher of casting (on rubber legs), and part 2 is demo and practise new handholds & atypical casting
15.15-15.30	15		Tea
15.30-16.00	30	8	Secondary/syndromic cases
16.00-16.15	15	10	Parent education and compliance
16.15-16.45	30	11	Clinic and treatment quality
16.45-17.00	15	12	Closing session - MCQs, Review of the day, Evaluation forms, and Certificates

Appendix 5: Background to the ACT Course and Training Materials – Preface from the ACT Course Manuals

Preface

This provider course manual covers the material taught in the ACT (Africa Clubfoot Training) basic and advanced non-surgical provider courses. If you are able to read the chapter before the linked section of the course you will understand the material better. The manual has however been assembled so that it is useful to those who have not been on the course, and as a reminder and revision aid for those who have finished the course.

A. What is the Africa Clubfoot Training course?

Welcome to the Africa Clubfoot Training (ACT) course materials, which are a complete set of teaching resources designed to help train health care workers in Africa from a wide range of levels in effective non-surgical treatment of clubfoot. It comprises the following 3 integrated courses:

Course name	Objectives	Intended participants	Length
Clubfoot Train the Trainer Course (TTT)	<ul style="list-style-type: none">• To develop understanding and skills in effective teaching & training with adult learners• To develop skills in mentoring clubfoot practitioners• To prepare participants to organize & deliver the ACT Basic & Advanced Clubfoot Treatment Provider courses	<ul style="list-style-type: none">• Have attended a Basic and Advanced Clubfoot Treatment Provider Course (or equivalent)• Have been working as a clubfoot practitioner for at least 2 years using the Ponseti method• Have (or will have in the future) responsibility for training other clubfoot practitioners	2 days
Basic Clubfoot Treatment (BPC) Provider Course	<ul style="list-style-type: none">• To give a simple introduction to the core concepts and technique of the Ponseti method in a non-complex, idiopathic case of clubfoot in a child under 2• To give hands-on practice in manipulation, scoring, casting, bracing (and tenotomy where relevant) on training models and patients• To be accessible to all health care workers allowed to treat clubfoot in their country.	<ul style="list-style-type: none">• Have been trained as a health worker at level deemed appropriate by MOH for treatment of clubfoot• May have limited knowledge about clubfoot treatment• Will be involved in clinical treatment of clubfoot• Will have opportunity to apply skills learned on this course in an appropriate clinical setting as soon as possible, supported by access to ongoing clinical	2 days

		supervision and mentoring from an experienced clubfoot practitioner	
Advanced Non-Surgical Clubfoot Treatment Provider Course (APC)	<ul style="list-style-type: none"> • To refresh understanding and skills in basic Ponseti treatment, and to add advanced knowledge to these • To develop understanding and skills in non-surgical management of challenging cases such as atypical, recurrent, neglected, and secondary clubfoot • To facilitate exchange of knowledge through case discussion of challenging cases • To establish a common approach to measuring and improving quality of care in clinics, to encourage reflection on what is (and isn't) working well in own practice / clinic setting, and to identify priority actions 	<ul style="list-style-type: none"> • Have attended a Basic Clubfoot Treatment Provider Training Course (or equivalent) • Have treated at least 20 clubfoot cases • Have been working as a clubfoot practitioner for at least 6 months, and have received mentoring / supervision in this time 	2 days

B. Why was the Africa Clubfoot Training course created?

The project is in response to the following feedback:

1. **More training capacity is needed in Africa.** An estimated 30,000 children with clubfoot are born each year in Africa, many of whom have no treatment because it is not available locally. To improve this situation, many more health workers need to be trained and mentored.
2. **Training courses need to be standardized, quality assured, and developed through consensus.** Ministry of Health and non-governmental organizations involved in clubfoot treatment have run training courses over the years but there has been a lack of consistency in what was taught and how it was taught. Many courses used material that experienced trainers had accumulated over the years but was not available to new trainers.
3. **Training courses need to be better tailored to the needs of the region, by streamlining content for an introductory course, and then building on that with an advanced course.** Some of the existing materials used are very advanced and assume a level of anatomical or pathological knowledge that is not present in all health workers providing clubfoot care.
4. **Training courses need to have better, and more integrated, trainer and trainee support materials.**
5. **Trainers need to be better supported and equipped.** Trainers need to be trained to present course material effectively, delivering training courses in ways that are suitable for adult learners, to enable the best learning outcomes.

C. How was the Africa Clubfoot Training course created?

These course materials have been developed as part of a 2-year project running from 2015–2017, called the Africa Clubfoot Training project. The partners are University of Oxford, CURE Clubfoot and CURE Ethiopia Children's Hospital, and Global Clubfoot Initiative (GCI) with collaboration and support from UK and Africa clubfoot practitioners across the region and the UK Clubfoot Consensus Group (UKCCG).

The editorial team used a Delphi process with experienced clubfoot trainers across Africa to collect clubfoot training materials that these trainers used and had found helpful, including the Global HELP Red Book, the GCI Ponseti clubfoot training materials, the CURE clubfoot training resources, and many others. A team reviewed these materials, conducted surveys and interviews with trainers across Africa, and then drafted the 3 courses outlined above. These new courses were then made available online to the project's Africa Technical Advisory Group of trainers in 15 countries for critical review over a period of 3 months. Members of the UK Clubfoot Consensus Group (UKCCG), a network of experienced NHS clubfoot clinicians, also reviewed the materials. The materials were assembled in draft form and the 3 courses were piloted in English and French in Ethiopia, Rwanda, and Kenya between September 2015 and January 2017, using trainers who came from 20 different countries. Extensive feedback was collected from trainers and participants after each pilot course, and the materials were subsequently revised. Each changed version was then tested at the next course delivery until the final version was reached.

D. How should the Africa Clubfoot Training course be used?

Anyone or any organization that is running clubfoot treatment training is welcome to use the course. The courses have been designed to facilitate interactive adult learning, large and small group discussions and to maximize hands-on participation for all learners in practical skills sessions and opportunities to receive feedback from course trainers. Therefore, for best results, we have included recommendations for ideal maximum and minimum course sizes and ratios of trainers to participants for each course (details are found in the faculty manual for each course). The ACT course materials include slide presentations, faculty and participant manuals, and videos.

- There is a set of presentation slides and participant and faculty (trainer) **manuals** for each of the courses.
- The Basic and Advanced Clubfoot Treatment Provider Courses can be delivered in **modules**, in a clinic setting, in addition to traditional workshop formats.
- The basic, advanced, and TTT courses are linked to **follow-up mentoring and supervision in clinics** to improve quality of treatment.
- The basic course is designed to be delivered in a **highly standardised way**, i.e. it teaches 1 main method of manipulating the foot.
- Attending this course does not give legal licence to practice clubfoot treatment, although participants who complete the whole course will be given a certificate of attendance.
- It is essential that new practitioners receive ongoing mentoring and supervision in a clinic setting after the course to practice, consolidate, and refine their skills.

The TTT course is challenging to run without external support, due to the nature of the course being very different from traditional course designs. As such the materials will be made available only once a plan has been made for delivery with appropriate support from trainers who have delivered it before.

All the materials are copyright but available free of charge to those working in low- and middle-income countries, as our aim is to make effective clubfoot training and mentoring resources widely available, to help treat as many children as possible. We do, however, ask that material is acknowledged, and that it is not altered in any way. We welcome your feedback on the materials, as this will inform revisions for future editions.

Please contact Global Clubfoot Initiative for all enquiries about the materials at <http://globalclubfoot.com/>.

Professor Chris Lavy

University of Oxford

On behalf of the Africa Clubfoot Training Team