

ECFS Neonatal Screening Working Group (NSWG)

Report for the Board, May 2018

Original aims of the Working Group

1. To support the implementation of newborn screening (NBS) for CF
2. To monitor performance and compare protocols to optimise effectiveness, whilst reducing negative impact
3. To encourage enrolment of all infants identified through NBS in clinical trials
4. To determine the optimal management of infants with an inconclusive diagnosis following newborn screening
5. Improving the processing of positive newborn screening results

The focus of work stream 5 will be on communication, establishing best practice for the different protocols that exist and disseminating this good practice. The work stream will also examine mechanisms for processing results, information for parent/carers and factors that impact on timeliness.

Additional objectives for the WG from 2018 onwards

6. To determine key outcome measures to evaluate the performance of CF NBS
7. To establish guidance and quality ranking on the collection of NBS outcome data
8. To assess knowledge of CFSPID in Europe
9. To provide resources to improve the evaluation and management of infants with CFSPID
10. To work with the ECFS Registry group to clarify definition and recording of CFSPID outcomes

Broader objectives

1. To continue to work in an open and inclusive manner
2. To encourage membership of the ECFS
3. To encourage participation from countries outside the EU

Summary of Completed Aims and Objectives to date:

1. *To support the implementation of NBS for CF.*

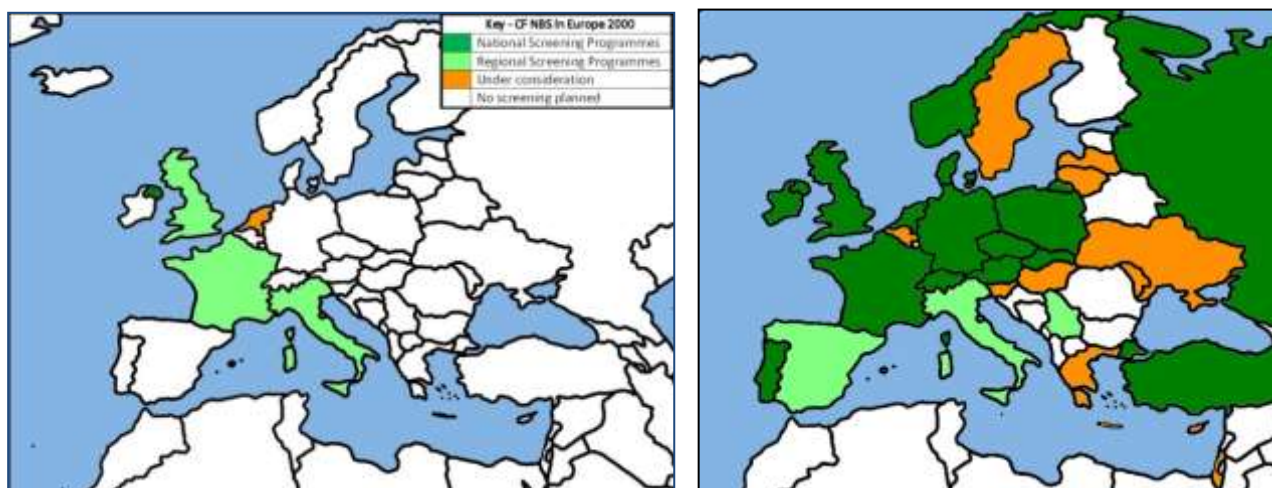
This is the primary aim of the WG and is being addressed by the following:

- a) We are continuing to improve on our information network through the NSWG database. We have over 50 **key workers** in 45 countries.
- b) Support at international and national meetings.

Meetings since July 2015 have included;

- ECFS NSWG Annual Meetings, Basel, Switzerland, June 2016
- Baltic CF Meeting, Latvia, Riga, October 2016
- Harmonisation meeting at the NACFC, Orlando, USA, October 2016
- UK Special Interest Group Meeting, November 2016
- ECFS Steering Committee Meetings, Lisbon, Portugal, January 2017
- DNWG (joint NSWG morning) meeting, Ljubljana, Slovenia, February 2017
- Belgian CF Meeting, Brussels, April 2017
- LEAD meeting, Lisbon, Portugal, May 2017
- ECFS NSWG Annual Meeting, Seville, Spain June 2017
- Turkish Thoracic Society, Istanbul, Turkey, September 2017
- NSWG Core Group meeting at the NACFC, Indianapolis, USA, October 2017
- UK Special Interest Group Meeting, March 2018
- ECFS NSWG Annual Meetings, Belgrade, Serbia, June 2018
- Teleconferences and face to face meetings of the Core Committee to discuss the management of projects and future directions

Figure 1: CF Newborn Screening programmes across Europe 2000 & 2018



Dark Green National Programmes
 Light Green Regional Programmes (variable coverage)
 Orange NBS considered or pilot study
 White No plans for NBS reported

2. To monitor performance and compare protocols

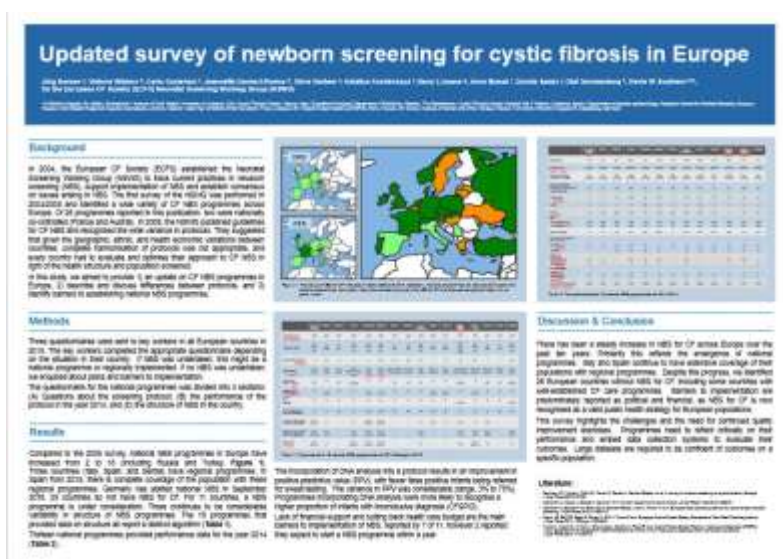
We have addressed this specific aim through the following strategies:

The paper “The expansion and performance of national newborn screening programmes for cystic fibrosis in Europe” Barben, J et al. was completed in August 2016 and published online in the Journal of Cystic Fibrosis at the end of December 2016.

Three questionnaires were sent to key workers in all European countries in 2015. The key workers completed the appropriate questionnaire depending on the situation in their country. If NBS was undertaken, it could be a national programme or regionally implemented. If no NBS was undertaken, we enquired about plans and barriers to the implementation of NBS.

The questionnaire for the national programmes was divided into 3 sections: (A) Questions about the screening protocol, (B) the performance of the protocol in the year 2014, and (C) the structure of NBS in the country.

Figure 2: The poster “Updated survey of newborn screening for cystic fibrosis in Europe” presented at the NACFC, Orlando, USA by Jürg Barben



3. *To encourage enrolment of all infants identified in clinical trials*

This aim is being addressed by the following:

- A. Establish close links with emerging Registries. Provide database information for the purpose of encouraging recruitment to clinical trials, working closely with the ECFS Clinical Trials Network.
- B. CF START – A UK trial to examine routine use of anti-staphylococcal antibiotic prophylaxis (£1.4 million HTA award). This trial will utilise NBS and the UK registry in an innovative manner, setting the template for future comparative effectiveness studies (see <http://www.cfstart.org.uk/>).

4. *To determine the optimal management of infants with an inconclusive diagnosis following newborn screening*

The WG published the paper on infants with the designation, CF Screen Positive, Inconclusive Diagnosis (Munck et al. 2015 Pubmed ID number 25630966). This has had a major impact on the designation of these infants and provides a more consistent approach to management. The NSWG worked with colleagues from across the globe to establish more consistency across the globe and to that end the CFF organised a group, in partnership with the ECFS NSWG to establish a clearer global approach to diagnosis, especially following newborn screening.

Reports and preliminary statements were presented at the NACFC in Arizona, 2015 and a follow up meeting took place in Orlando 2016. The important papers from that exercise were published in the Journal of Pediatrics (PMID 28129812 and 28129811).

Challenges achieved

1. An information network for associate members of the NSWG is now established.
 2. Support provided for many meetings on CF Newborn Screening globally.
 3. The performance recorded for the 2015 European CF NBS Survey, has now been published as stated previously.
 4. With the data from the ECFS NSWG Survey 2015, a poster and ePoster was presented by Jürg Barben at the NACFC 2016 – “Updated Survey of Newborn Screening for Cystic Fibrosis in Europe” and at the ECFS NSWG Annual meeting 2017 – “Protocols and performance; lessons from the 2015 survey”
 5. A national clinical trial (CF START) has commenced in the UK.
- CF NBS has gone from a regional programme to a national programme in Germany in the last quarter of 2016.

Objectives still require to be achieved:

- The Neonatal Screening Working Group has established a robust network across Europe that has successfully lobbied for the implementation of NBS in many countries.
- We have supported implementation at all stages, from engaging with stakeholders and policymakers to early protocol development.
- The Working Group has provided a forum for quality improvement and the next five years will be critical in expanding these exercises across Europe.
- The experience of the Group is vast and this has been used in an inclusive manner to set the agenda for the objectives of the WG over the next five years.
- From our efforts to collect international outcome data, we have recognised that an exercise is required to develop a robust outcome dataset.
- We will achieve this using a consensus approach supported by the infrastructure of the Group (a methodology we have used successfully in the past).
- Once established we will move to a quality ranking system, with guidance for all countries on the “best practice” with respect to data collection.
- This will enable us to collect international data in a more valid manner and produce a stronger evidence base for recommendations.
- The second major exercise to be undertaken by the Group will be to address the evaluation and management of infants with an unclear diagnosis following NBS, CFSPID.

- The group has produced several leading articles on this topic and the next phase is to assess the real world implementation of this guidance.
- Once we have established the requirements for QI, to develop and distribute resources to improve the evaluation and management of these infants.

These two sizeable projects will be undertaken in addition to all the standard activities of the Group

- Encouraging implementation of NBS
- Assessing performance
- Facilitating access to clinical trials
- Improving the processing of positive NBS results

The additional outputs for 2018 onwards

Outputs 6&7

A quality exercise to compare outcome measures of CF NBS in Europe with a quality of data scoring system - this will be done via a questionnaire to each country screening in Europe. We will establish a core set of outcomes required to determine the performance of NBS for CF. We will also establish guidance on the standards expected for the collection of these data.

Outputs 8&9

CFSPID - an online questionnaire to be developed by the working group to evaluate knowledge amongst Paediatricians in Europe on CFSPID. This will inform subsequent training needs and if there is a need for a further consensus exercise.

Output 10

To work with the Registry group to improve definitions and CFSPID outcomes.

In addition, the WG will continue core activities of supporting developing programmes, organising meetings and producing newsletters.

What meetings/networking is required to complete the objectives (where meetings are involved, please state probable location and number of participants):

Two separate sub-groups have been established to organise the above activities

- 1) Establishing core outcome set and standards for data collection
Leads; Dr Anne Munck, Professor Kevin Southern
- 2) Evaluating training needs for CFSPID
Leads; Dr Silvia Gartner, Dr Carlo Castellani

On an annual basis we will continue to organise the following meetings;

- At the NACFC – satellite meeting for core committee members of the NSWG
- Teleconference meetings (bi-annual) – core committee members
- ECFS NSWG Annual Meetings at the ECFS Conference (100 + participants)

New members of the Core committee have been appointed and we are open to further applications.