

## **Changing Pattern of Sweat Testing in the Post New-born Cystic Fibrosis Screening Era within a Regional Service 2007-2018**

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Objectives : To ascertain changing patterns of sweat test (ST) utilisation in a large regional service serving a population of 800,000.

Methods : We analysed the annual audits of ST from 2007 when newborn screening (NBS) was introduced for cystic fibrosis (CF) in our region to 2018.

Results:

Audit Year;ST numbers;Failure rate %

2007-08;149;17%

2008-09;110;12%

2009-10;88;11%

2010-11; 95 ;12%

2011-12; 94; 17%

2012-13;84;12%

2013-14; 67; 10%

2014-15; 70;14%

2015-16;52;21%

2016-17; 39; 2.6%

2017-18;28;21%

Data shows a decrease in number of ST of 72% from 2007-8 to 2017-8. ST sites decreased from 3 sites with 7 operators to 2 sites and 6 operators in 2009-10 and then 1 site 2016-17. Numbers of ST were kept high enough for quality control by analysing ST from an adjacent region in 2008 onwards so for example in 2017-18 34 ST were from the adjacent region maintaining sufficient numbers of ST (62). Failure rates of ST fluctuated ( should be less than 10%) and a recent high rate 21% in 2017-18 was addressed by review of operator technique ( skin cleaning and collection time ) with resultant improvement of failure rate to 6% in 6 months 2018-19 ( 15 ST ).

ST indications: 2014-15 versus (v) 2017-8

Respiratory. 38% v 37%

Failure to thrive 14% v 18%

Gastro symptoms 14% v 6.5%

Rectal prolapse. 10% v 11%

Nasal Polyps. 1.5% v 3%

Family history. 3.7%v1.5%

NBS. 4%v3%

CF monitoring. 0%v3%

Since 2010 there were 10 positive ST ; 6 indeterminate; 3 failures subsequently positive all NBS. This shows indications for ST are similar but CF monitoring of screen positive indeterminate diagnosis are accounting for a small but increasing indication.

Conclusion: Number of ST in our region since NBS in 2007 have decreased significantly and quality control has been maintained by reducing operators and sites and increasing numbers by analysing ST from adjacent region.