"Know – How" to High-Flow

Improving General Paediatricians' Confidence with Troubleshooting Heated Humidified High Flow Therapy (HHHFT)

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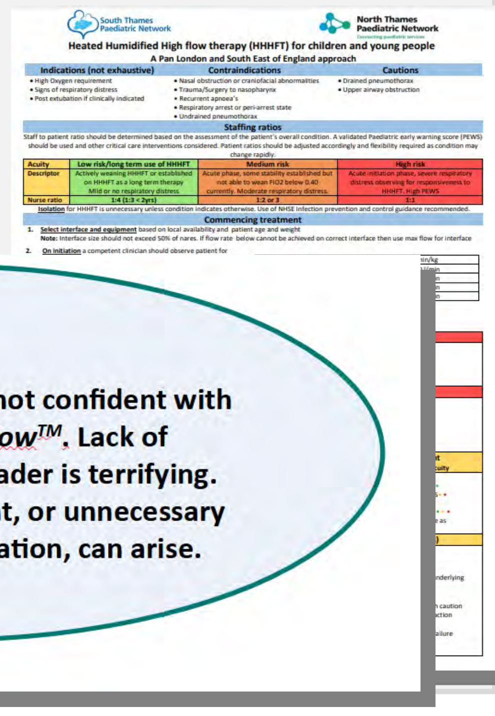
Breathe + Relax

BACKGROUND

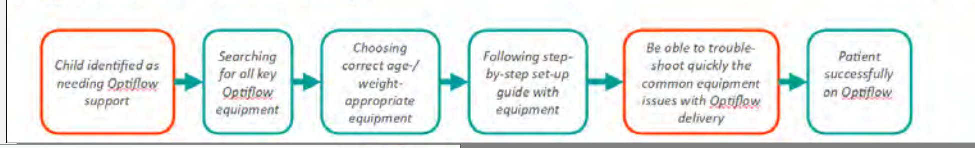
AIRVO 2 Optiflow™ HHHFT is increasingly being used as respiratory support for moderate-severe respiratory distress in children



General Paediatricians are not confident with troubleshooting *Optiflow*™. Lack of knowledge as the team-leader is terrifying. Delays in starting treatment, or unnecessary escalation to CPAP/ intubation, can arise.

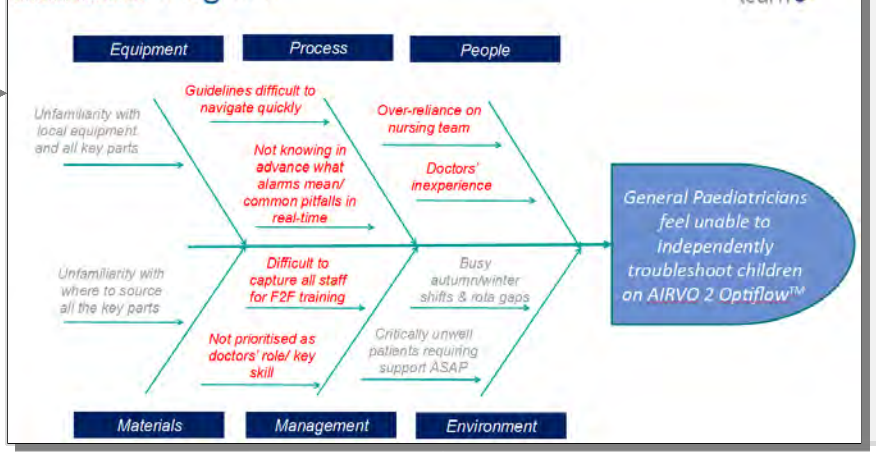
DIAGNOSTICS

High level Process map

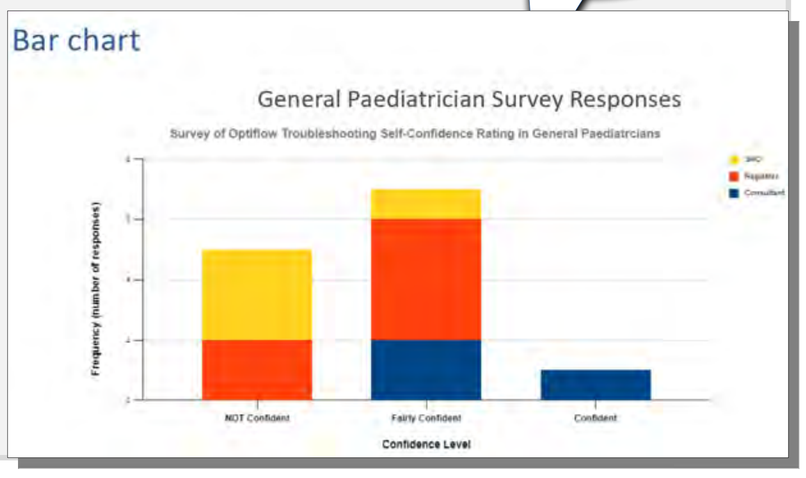


Parent perspective
"Felt helpless when the machine kept beeping/ they're not settling"

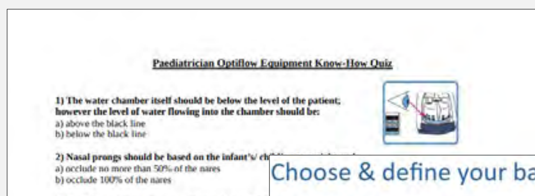
Fishbone diagram



Bar chart



AIM & MEASUREMENT DEFINITION



Aim statement

What are we trying to accomplish?

Paediatricians to become more confident with troubleshooting Optiflow → Paediatricians to know how to identify and tackle common equipment issues when a child is started on Optiflow (high score on equipment knowledge quiz) → **Increase the proportion of General Paediatricians who have confidence in troubleshooting common equipment issues with *AIRVO 2 Optiflow*™ by February 2023**

An iterative process

Choose & define your baseline measures

Aim: *Increase the proportion of General Paediatricians who have confidence in troubleshooting common equipment issues with AIRVO 2 Optiflow™ by February 2023*

Chosen measures:
Self-Confidence Rating
Paediatrician AIRVO 2 Optiflow™ Equipment Know-How Quiz score

Inclusions: *Career Paediatric Doctors (Ward and PED) in the Trust who look after Paediatric patients on AIRVO 2 Optiflow™*

Exclusions: *FY1/ FY2/GP trainee doctors/ Paediatric Nurses/ Advanced Nurse Practitioners*

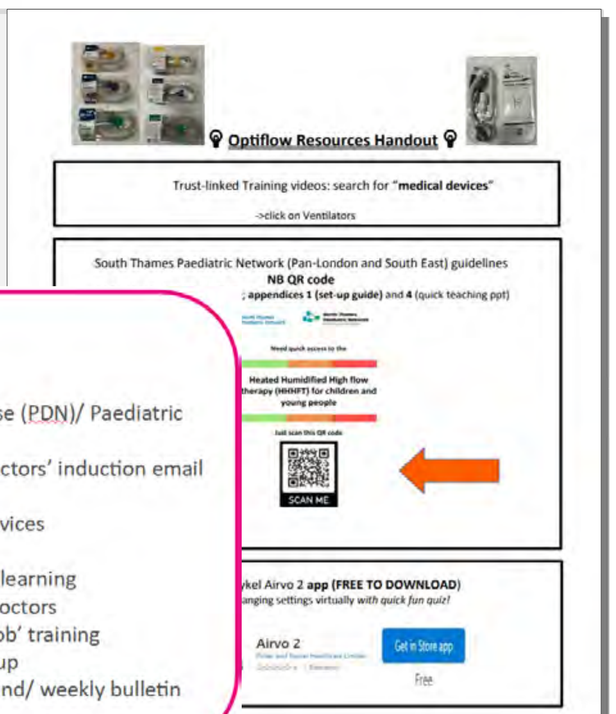
Sampling method and frequency
Baseline self-confidence rating and knowledge quiz score; both repeated again (after introduction of different change ideas)

CHANGE IDEAS

PRACTICE

CHANGE IDEAS

1. Face-to-face Equipment training sessions with Practice Development Nurse (PDN)/ Paediatric Emergency Department Nurse in Charge (PED NIC)
2. Creating a short training video for sharing via email/ Whatsapp/ junior doctors' induction email
3. Signposting to STPN HHHFT guideline https://stpn.uk/hhhft-guideline/
4. Attaching QR code for STPN HHHFT guideline to all *AIRVO 2 Optiflow*™ devices
5. Signposting to Trust Medical Devices training resources and video links
6. Signposting to *F&P Airvo 2* App (free to download) for quick self-directed learning
7. Creating 1-sided resource guide of above (points 3-6) for distribution to doctors
8. "Doctor buddy" for any nurse setting-up *AIRVO 2 Optiflow*™ for 'on-the-job' training
9. PED Simulation Sessions to include scenario with *AIRVO 2 Optiflow*™ set-up
10. Reminder *AIRVO 2 Optiflow*™ training/ available resources at Grand Round/ weekly bulletin



PDSA cycles

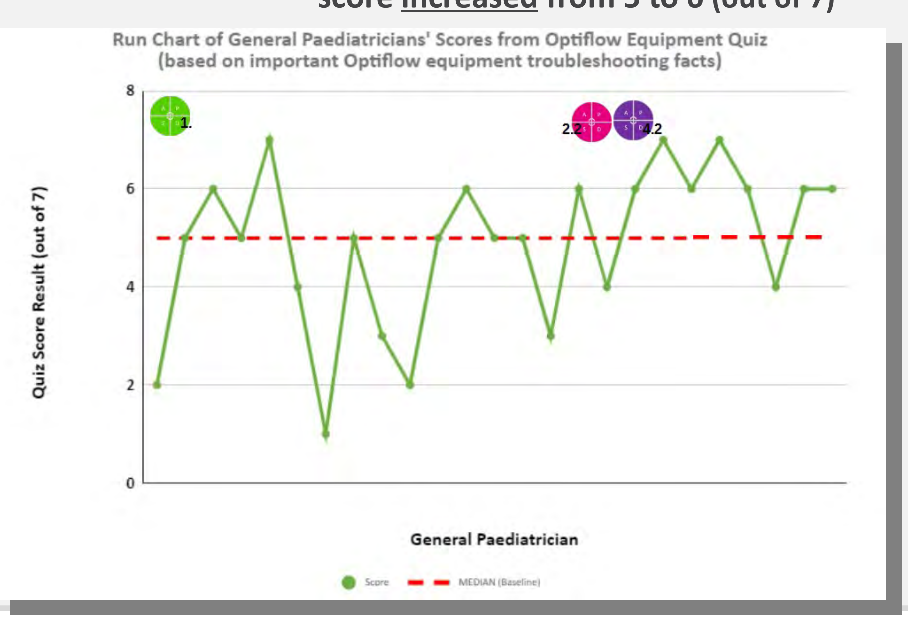
PDSA Test #	PLAN	Do	STUDY	ACT
1.	**Increase awareness** of problem statement	**Share & learn** pitch with nurses, consultants and doctors, including proposing initial idea of creating a **training video**	**Initial audience hesitancy… "not** doctors' remit". Gained Suggestions to create a quick self-confidence poll.	Created **self-confidence poll**. Identified **noticeable lack of confidence within medical team**. GP trainee induction adjusted accordingly by PDN. Plan to explore video. **ADOPT**
2.1	Create a **short training video** with PDN/ PED NIC	Discussed feasibility with PDN & PED NIC; was signposted to **existing short videos** (Trust Intranet) and helpful **free interactive App.** Observed junior nurses' *Optiflow* set-up training session	Reviewed existing training videos and I trialled App – very useful virtual practice. → With PDN and Consultant Colleague: devised a **short equipment knowledge quiz** of important troubleshooting facts (proxy marker for confidence). Valuable learning from **observing a training session**; and senior nurses' advice of **regular hands-on practice** being key to their juniors' success.	No need to create a new video; more worthwhile to **signpost to and highlight links** to existing videos and App. Use equipment knowledge quiz as a further **(proxy) measure** of self-confidence. Envisaged **"Doctor-Buddy" System**. **ABANDON & ADAPT**
2.2	Suggested new practice of **actively seeking a "Doctor Buddy"** for any nurse setting-up *Optiflow* for 'on-the-job' training	Approached PED NIC and PDN about **new initiative** – who agreed to **cascade** amongst nursing colleagues (via nursing team email, word-of-mouth and Whatsapp). Alerted junior doctors via trainee Whatsapp	Reviewed after 1-2 weeks: **v few instances occurred but general positive feedback**	**Remind** Nursing Leads to continue new initiative. ?Request to incorporate reminder into departmental bulletin to emphasize **"new norm"** **ADOPT & EXTEND**

PDSA Test #	PLAN	Do	STUDY	ACT
3.	**Face-to-face Equipment training** sessions with PDN/ PED NIC	PDN incoporated slightly longer *Optiflow* session into incoming **GP/Foundation trainees' induction** programme	Feedback from 2 GP junior doctors – found demonstration session **helpful to become more visually familiar** with the equipment. More beneficial to have **hands-on practice.**	Feedback to PDN: - for next Paediatric doctor induction cohort – to perhaps **offer a longer *Optiflow* equipment session with more hands-on practice.** - offer more short **ad-hoc/ refresher training sessions** to the medical team throughout year. ? Incorporate *Optiflow* equipment training **within PED simulation session/ SpR teaching** programmes. **ADAPT & EXTEND**

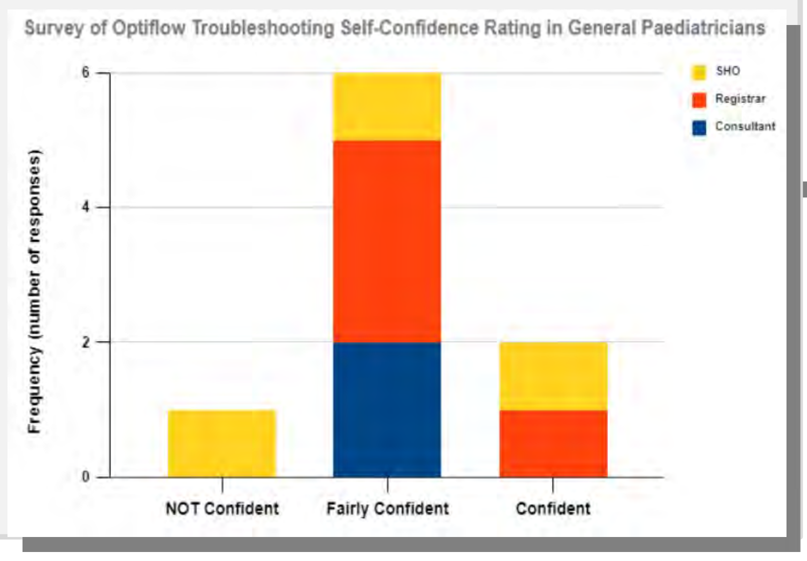
PDSA Test #	PLAN	Do	STUDY	ACT
4.1	**Attaching QR code for STPN HHHFT guideline** https://stpn.uk/hhhft-guideline/ to all *Optiflow* devices	Discussed with PDN and checked machines on ward and in PED	Guideline printout already attached to all machines. To incorporate instead within a **1-sided resource/ handout**	Design and create 1-sided resource handout **ABANDON & ADAPT**
4.2	Create a **1-sided *Optiflow* resource** handout incorporating: • link to Trust training video • STPN HHHFT guideline QR code • reminder of free downloadable manufacturer's App • visual reminders of different nasal interfaces	Created and printed copies in **colour and laminated**; reviewed and discussed with PED Consultants, PDN and Clinical Lead and had: • stuck as **posters in key clinical areas** • circulated in upcoming **departmental email bulletin** • circulated amongst **trainee Whatsapp group**	**Positive feedback** received from PDN and fellow trainees on usefulness of resource (to allow for **self-directed learning** and **handy reminder of local network guideline**)	**Keep posters in place** Suggest to incorporate resource as an **attachment within junior doctor welcome induction email** bundle. Suggest to **regularly recirculate** in departmental email bulletins at the start of peak autumn/ winter respiratory virus seasons **ADOPT & EXTEND**

RESULTS

AIRVO 2 Optiflow™ equipment quiz median score increased from 5 to 6 (out of 7)



Proportion of General Paediatricians who have confidence in troubleshooting *AIRVO 2 Optiflow*™ equipment increased from approximately 60% to 90%



REFLECTIONS & LEARNING

- General Paediatricians (especially trainees) are **keen and receptive** to improving their practical knowledge of HHHFT equipment
- Most value regular **hands-on training** (e.g. via Induction/ PED simulation/ SpR teaching; continuation of "Doctor Buddy" initiative)
- **Effective change ideas do not have to be big** e.g. maximising "on-the-job" training opportunities; and collating/ signposting to existing resources for self-directed learning
- To consider in the future extrapolating change ideas to develop General Paediatricians' confidence also with CPAP

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Acknowledgements: Fisher & Paykel AIRVO 2 Optiflow™

LSP QI Change Champion — Supported by QIC learn