The use of NIRS (non invasive respiratory support) in COVID -19 patients

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Background

- Recovery RS trial: (Perkins etal, 2021)
- Oxygen therapy for pneumonia in adults.(ZhangY etal, 2012)
- Conventional oxygen therapy versus CPAP (continuous positive airway pressure) as a ceiling of care in ward-based patients with COVID19. (P. Bradley et al., 2021)

Health inequalities

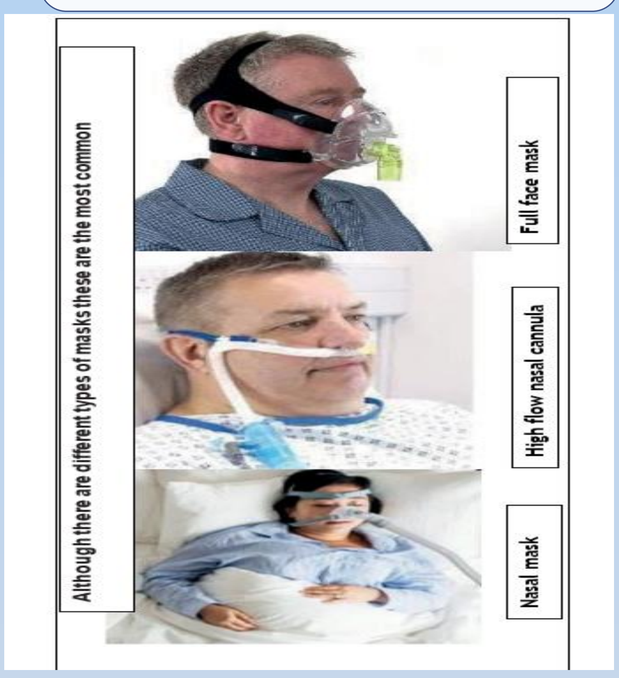
- Differences in chronic disease and disability (ONS, 2022).
- Health inequalities – North-West region vs the whole of England, 'North South Divide' (Whitehead et al, 2014)
- Lifestyle and behaviour, such as smoking; Mental health problems, such as anxiety
- Access to health care; Physician confidence (challenging to identify/measure)

Aim and objectives

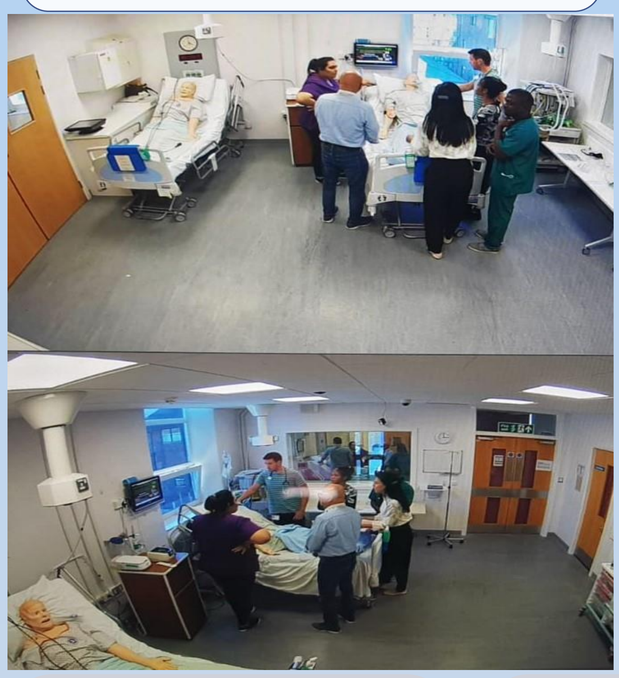
- To provide evidence for the effectiveness of NIRS in patients with COVID-19 or non-COVID-19 pneumonia and to increase the use of NIRS (CPAP, HFNO high flow nasal oxygen) in patients receiving ward-based ceiling of care.
- To increase patient compliance with NIRS treatment.
- To increase physician knowledge and confidence in terms of administering NIRS treatment

Supporting evidence:
Non-invasive respiratory support (NIRS) in the management of COVID-19: A synthesis of systematic reviews

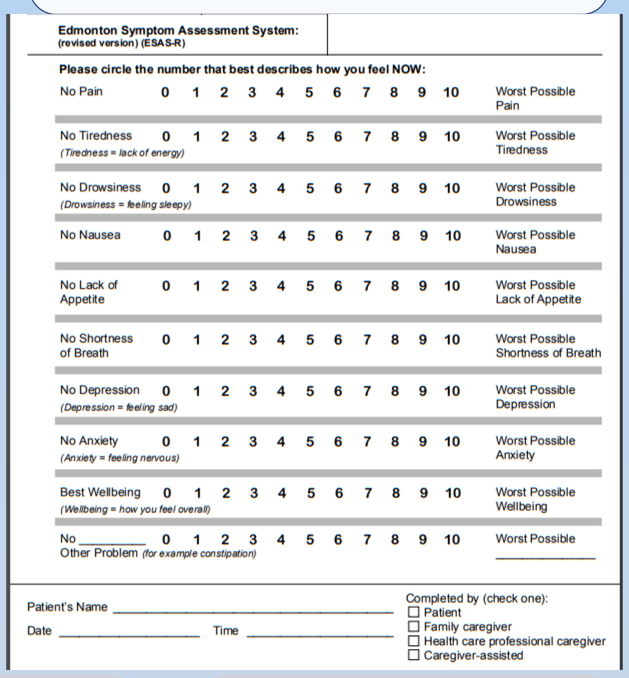
Patient information leaflet



Competency training framework



NIRS passport (ESAS)



Edmonton Symptom Assessment System: (revised version) (ESAS-R)

Please circle the number that best describes how you feel NOW:

No Pain	0	1	2	3	4	5	6	7	8	9	10	Worst Possible Pain
No Tiredness *(Tiredness = lack of energy)*	0	1	2	3	4	5	6	7	8	9	10	Worst Possible Tiredness
No Drowsiness *(Drowsiness = feeling sleepy)*	0	1	2	3	4	5	6	7	8	9	10	Worst Possible Drowsiness
No Nausea	0	1	2	3	4	5	6	7	8	9	10	Worst Possible Nausea
No Lack of Appetite	0	1	2	3	4	5	6	7	8	9	10	Worst Possible Lack of Appetite
No Shortness of Breath	0	1	2	3	4	5	6	7	8	9	10	Worst Possible Shortness of Breath
No Depression *(Depression = feeling sad)*	0	1	2	3	4	5	6	7	8	9	10	Worst Possible Depression
No Anxiety *(Anxiety = feeling nervous)*	0	1	2	3	4	5	6	7	8	9	10	Worst Possible Anxiety
Best Wellbeing *(Wellbeing = how you feel overall)*	0	1	2	3	4	5	6	7	8	9	10	Worst Possible Wellbeing
No _____ Other Problem *(for example constipation)*	0	1	2	3	4	5	6	7	8	9	10	Worst Possible _____

Patient's Name _____ Date _____ Time _____

Completed by (check one):
☐ Patient
☐ Family caregiver
☐ Health care professional caregiver
☐ Caregiver-assisted

Using the CFIR (Consolidated Framework for Implementation Research) to assess potential barriers and facilitators and to help develop a logic model

Inner setting	• Capacity of the trust to change • Compatibility of leaflet use in acute setting
Outer setting	• the extent to which the leaflet is perceived as a way to facilitate use of NIRS
Intervention	• Quality and validity of evidence • Fitting of training sessions within workload
Individuals	• staff belief in their own capabilities
process	• planning • Dedicated champions and sense of ownership

EVALUATION

Implementation outcome

Design quality and packing of leaflet

Appropriateness of training

Resources dedicated to the program

Goals and feedback

Observational protocols to assess fidelity

Service outcome

Assessing number of patients complying to (or withdrawing from) treatment within a set of time in comparison to previous data (3months data)

In situ SIM: simulated scenarios in a clinical environment itself rather than in training facilities to assess the extent of improvement in quality of service provided on a trust level rather than individual level

Patient outcome

Qualitative interviews with patients to assess their views and perceptions (to be conducted inpatient after weaning, or outpatient in follow up NIRS clinics)

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References:

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Zhang Y, Fang C, Dong BR, Wu T, Deng JL. Oxygen therapy for pneumonia in adults. Cochrane Database Syst Rev. 2012 Mar 14;(3):CD006607. doi: 10.1002/14651858.CD006607.pub4. PMID: 22419316.

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