# Twitter Thread by Nitin Arora #WearAMask





I'm going to tag this as a little tutorial for <a>@MichaelYeadon3</a> who keeps saying that there's no problem from the suppliers of medical 'gasses'

Most hospitals in the U.K. run their O2 supply from a Vacuum Insulated Evaporator (VIE)

### https://t.co/Lu9ktGFSSm

#### 1/n

This VIE is essentially a large thermos flask/ vacuum insulated cylinder at -180C O2 is supplied from (typically) BOC in liquid form; when required, allowed to evaporate into gas, & supplied to hospital outlets.

Most hospitals have a VIE big enough to meet their needs

2/n

The problem is the pipes

Most ~12 bed ICUs have pipes that allow ~400L/min flow

This is Ok because most ventilators don't use >20l/min; giving useful buffer capacity

Modern non invasive ventilation systems- CPAP, NIV, and High flow nasal Oxygen (HFNO), however, need more 3/n

A typical patient on HFNO will have 60-80Lmin flow. If they're on 90% O2, that's 60L O2 for 1 patient

6 of these patients will come very close to triggering the O2 flow alarm for this 12 bed unit.

Aside from breaking walls and re engineering the O2 supply for the whole hospital there's no easy way of solving this
problem
5/n
The next question being asked is 'can't we use 'oxygen bottles'

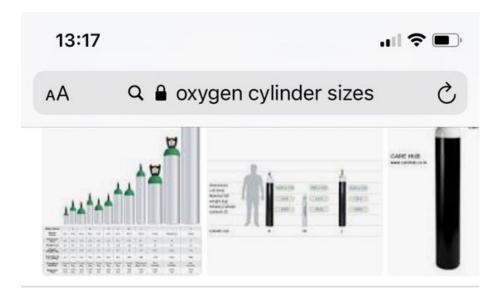
A typical F cylinder has 1360 litres Oxygen. And weighs 18KG.

That will last ~22 minutes for a patient on HFNO

That's 72 cylinders per patient per day.

That's not how you can run a service.

6/n



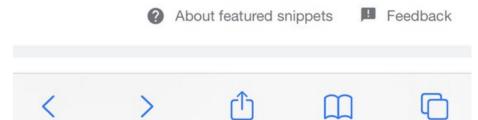
## Oxygen Cylinder, Medical Grade, Compressed Gas

- ZA (300 litres)
- D (340 litres)
- CD (460 litres)
- ZD (600 litres)
- E (680 litres)
- F (1360 litres)
- HX (2300 litres)
- G (3400 litres)

### More items...

www.boconline.co.uk - shop - oxy...

# Buy Medical Oxygen Cylinders Online | Gas Suppliers - BOC ... - BOC.com



Then you come to cost.
These 72 cylinders cost approx £2000. That's ~20x more than liquid O2 in a VIE.
Typical ICU tariff for a L2 patient is <£1500!
7/n
many hospitals (including mine) have had to plan around O2 supply (flow) and scatter patients- this leads to inefficiencies of dispersal if you have say 3-4 areas with 6-8 patients in them rather than one area with 30
Leads to problems with staffing and cover for safety
8/n
So what I've tried to explain is that when hospitals report they're running out of O2, the problem doesn't lie with suppliers of liquid O2. Don't ask them if there's a shortage.
The problem is infrastructure and old estate.
Please stop this misinformation.
9/n
TLDR: there isn't a problem with O2 supply from manufacturers. It's a problem with old estate and infrastructure in the hospital buildings
10/10
@iceman_ex @rupert_pearse @ShaunLintern @BBCHughPym @sbattrawden @charlot_summers @SepsisUK