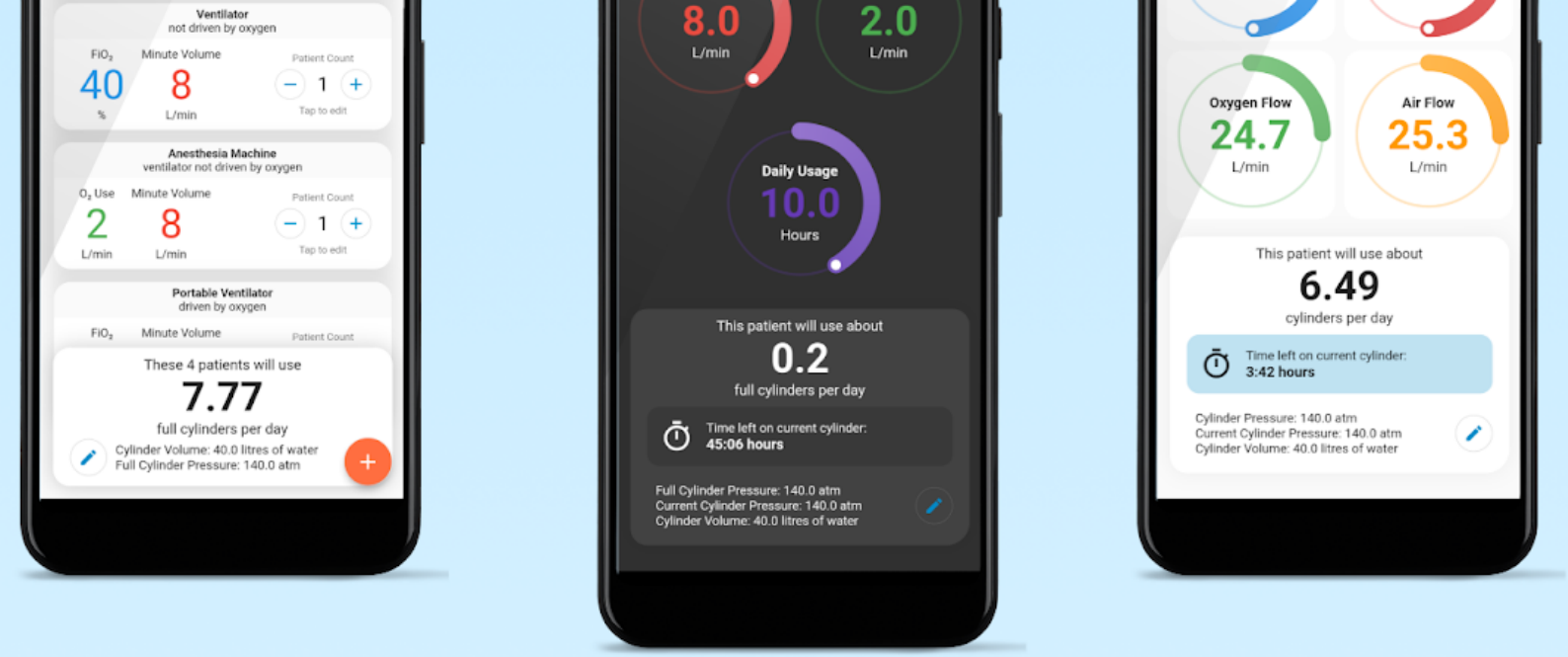
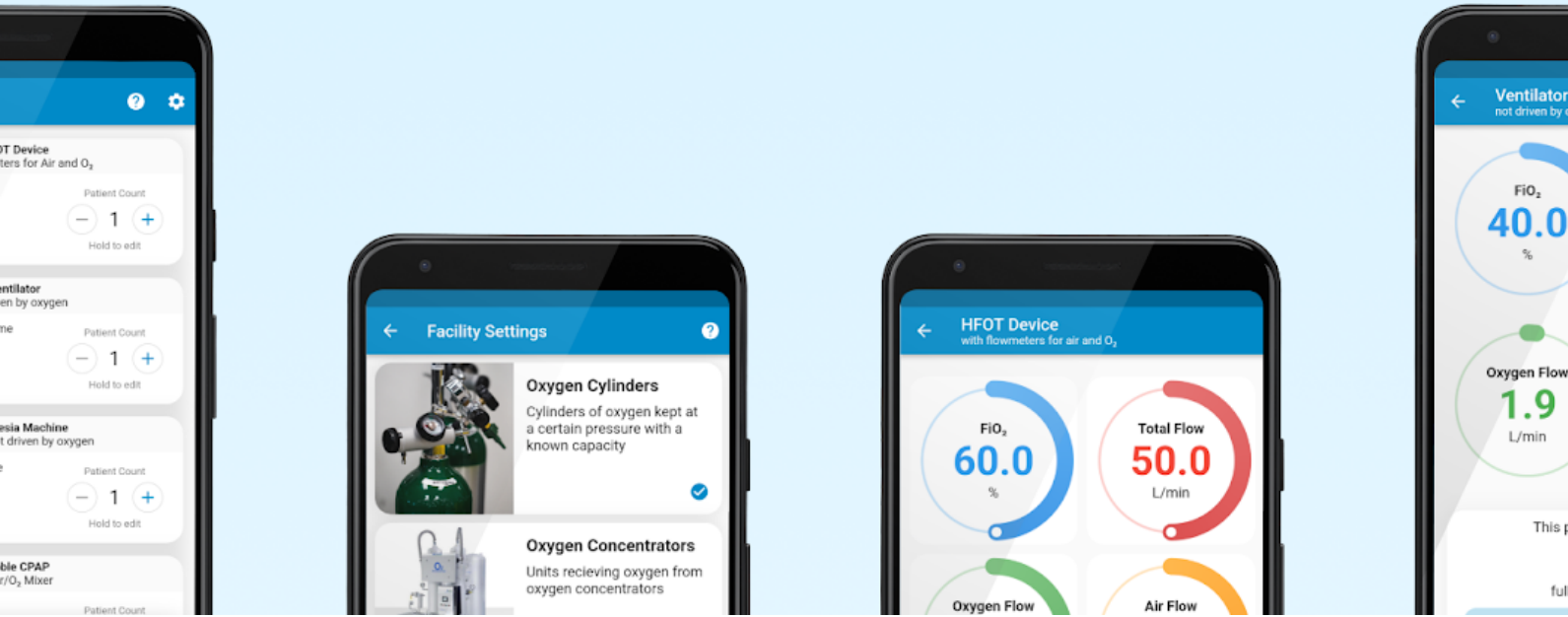


Oxygen Planner

Calculate Oxygen Demand

User Manual



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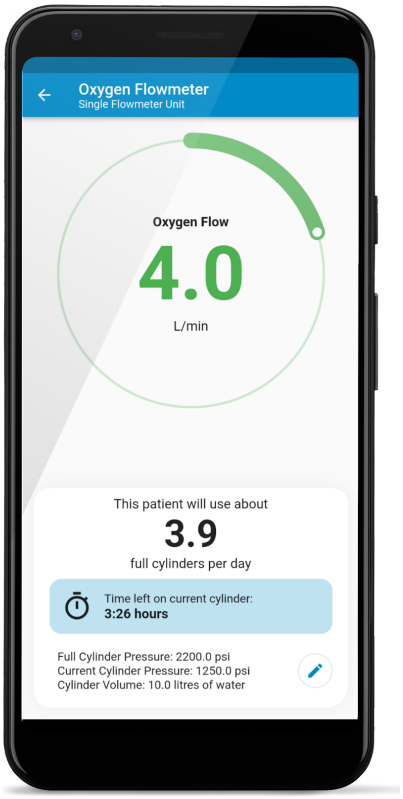
Calculate Time Remaining on an Oxygen Cylinder



1. As you open the App, the Facility O_2 Demand page appears with a list of available oxygen delivery devices. Choose a device from the list. Say you are using an oxygen cylinder with a flowmeter in your home. Click the item 'Oxygen Flowmeters', and the Oxygen Flowmeter page will open
2. Now adjust the flow that is being administered, say 4 L/min
3. Press Edit button to input the cylinder related data overwriting any existing data that may be showing up.
4. When the window appears, provide inputs such as supply cylinder volume, say 10 Ltr water capacity, Full cylinder pressure say 2200 psi and Current cylinder pressure : say 1250 psi. Press OK
5. The result shows how many cylinders are required per day if used 24 hrs per day, (in this example 3.9 cylinders) and especially the time the current cylinder in use will last (3 hrs 25 min)
6. You can now plan availability of cylinders accordingly.
7. For **liquid oxygen flasks**, navigate as follows:
    a. Press the back arrow on the top left to return to the 'Facility O2 Demand' page.
    b. Press the gear icon on top right to choose a supply type. Choose liquid oxygen and return back.
    c. The result shows how much Liquid Oxygen you will require per day (in this example 7.2 Ltr of cryogenic liquid oxygen).
8. For **oxygen concentrators**, navigate as follows:
    a. Press the back arrow on the top left to return to the 'Facility O2 Demand' page.
    b. Press the gear icon on top right to choose a supply type. Choose oxygen concentrators and return back.
    c. The result will show the concentrator capacity you will need.
9. If you adjust total flow or FiO_2 as in step 2, the results will change dynamically - this may help in decision making in times of supply scarcity
10. Return to the Facility O_2 Demand page
11. Swipe the Oxygen Flowmeter window horizontally to delete.
12. To replace it with another device, press + at the bottom right corner.

Adjust O_2 and Air Flowmeters to Achieve Desired Total Flow and Percentage of FiO_2

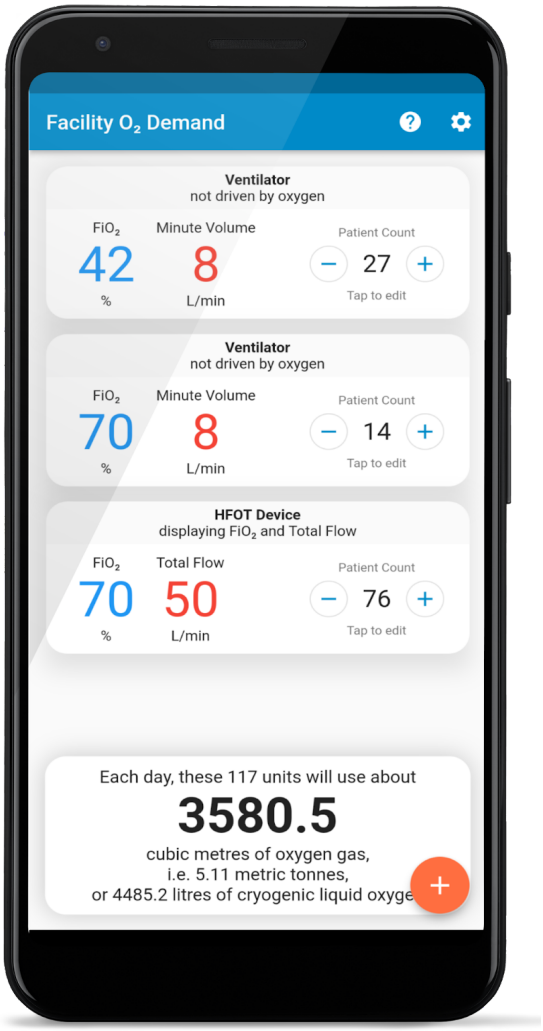
It may be difficult to calculate required flow rates of Air and O2 for HFOT devices or Bubble CPAP devices without the help of calculators or without use of an O2 analyzer. If you are having this difficulty, follow these steps.

1. Go to the Facility O_2 Demand page
2. Press ' +' and choose **HFOT Device with Flowmeters for Air and O2**
3. Adjust input dials for desired O_2 % and Total Flow. For example, set them to 50% FiO_2 and 60 L/min.
4. As displayed on the screen, you need to adjust the oxygen flow of your device to 22 L/min and the air flow to 38 L/min to achieve the previously set results.
5. The requirements of daily cylinders and time remaining of current cylinder appears at the bottom of the screen
6. In the case of Bubble CPAP, the adjustable inputs are oxygen and air flows through flowmeters and the outputs are FiO_2 and total flow.
7. Return to Facility O_2 demand page, swipe to delete HFOT device.

Calculate Oxygen Requirements for an Entire Hospital

1. Choose the type of equipment in use one by one from the + menu like 'ventilator not driven by oxygen'.
2. Input average O_2% and average minute volume that is being used across all adult patients at the hospital. For example, 42.5% O_2 and 8.2 L/min average minute volume.
    a. If it is difficult to achieve a precise value using the dials, long press the number in the middle of the dial and type the desired value.
3. The values of the circles without a button cannot be changed by the user, they show the consumption of O_2 and air in this setting per ventilator for the information of the clinician.
4. The bottom of this page shows requirement of cylinders & current cylinder time in case of the stand alone ventilator in use
5. Return to the Facility O_2 demand page,

6. In the Ventilator tile, the FiO2 and L/min will show values rounded to the nearest integer as 42% and 8 L/min but the internal calculations of the app will be based on the actual values of 42.5% and 8.2 L/min.
7. Tap + at the bottom menu and choose the ventilator not driven by oxygen again from the list.
8. This time, set the average O_2% and minute volume used across the hospital for pediatric patients. For example, 70% O_2 and 4 L/min minute volume.
9. Return to the Facility O_2 Demand page.
10. Input the patient count of adult patients and pediatric patients, say 27 and 14 respectively.
    a. To quickly change patient counts, long press on the number itself and type the desired number.
11. The same device with different settings can be used multiple times.
12. Tap + again to choose another device, say 'HFOT device displaying total flow and FiO_2%', choose the values across patients. For example, 70% FiO_2 and 50 L/min total flow.
13. Return to the Facility O_2 Demand page, and set patient count for the HFOT devices to 76.
14. Tap ✎ to edit the pressure and volume of the cylinders in use. For example, 40 liters of water capacity and 200 Bar pressure.



15. View the total daily cylinder requirement at the bottom of the screen.
16. If your hospital uses **liquid oxygen**,
    a. Press the gear icon on top right to choose a supply type. Choose liquid oxygen and return back.
    b. The result shows how much Liquid Oxygen you will require per day.
17. If your hospital uses **oxygen concentrators**,
    a. Press the gear icon on top right to choose a supply type. Choose oxygen concentrators and return back.
    b. The result will show the concentrator capacity and peak flow you will need.
18. To plan for the hospital's full requirement,
    a. add each device using the + menu,
    b. Set the number of units
    c. Adjust the settings for each device

iPhone

[Download Oxygen Planner on the App Store]

Calculate Time Remaining on an Oxygen Cylinder

1. The App will open to the Facility O_2 Demand page. Press '+' on the right hand side of the top of the screen, where the list of oxygen delivery devices appear.
2. Choose the device in use out of the list. Say you are using an oxygen cylinder with a flowmeter in your home. Click the item 'Oxygen Flowmeters'.
3. Now adjust the flow that is being administered, say 4 L/min
4. Tap on the gray section labeled 'Tap to edit cylinder settings' to adjust cylinder details, to 140 atm pressure and a 40 liter water capacity cylinder for example.
5. The app will show how many cylinders are required per day at the bottom of the screen
6. Tap the 'Calculate Remaining Supply Time' tab, and input the current cylinder details, which may be of a different size, say 10 Ltr water capacity and 140 atm pressure.
7. Press calculate and a new window will appear with the result.
8. If you use **liquid oxygen flasks**, navigate as follows:
    a. Press the back arrow on the top left to return to the 'Facility O2 Demand' page.
    b. Press the gear icon on top right to choose a supply type. Choose liquid oxygen and return back.
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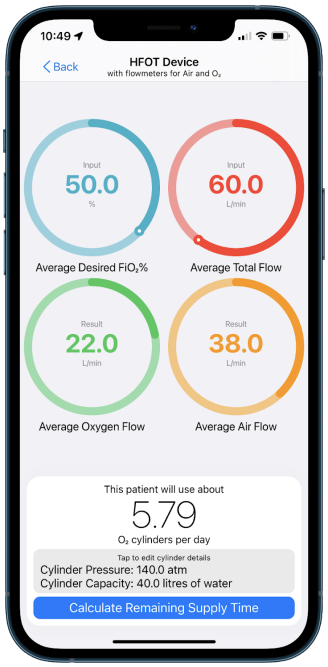

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