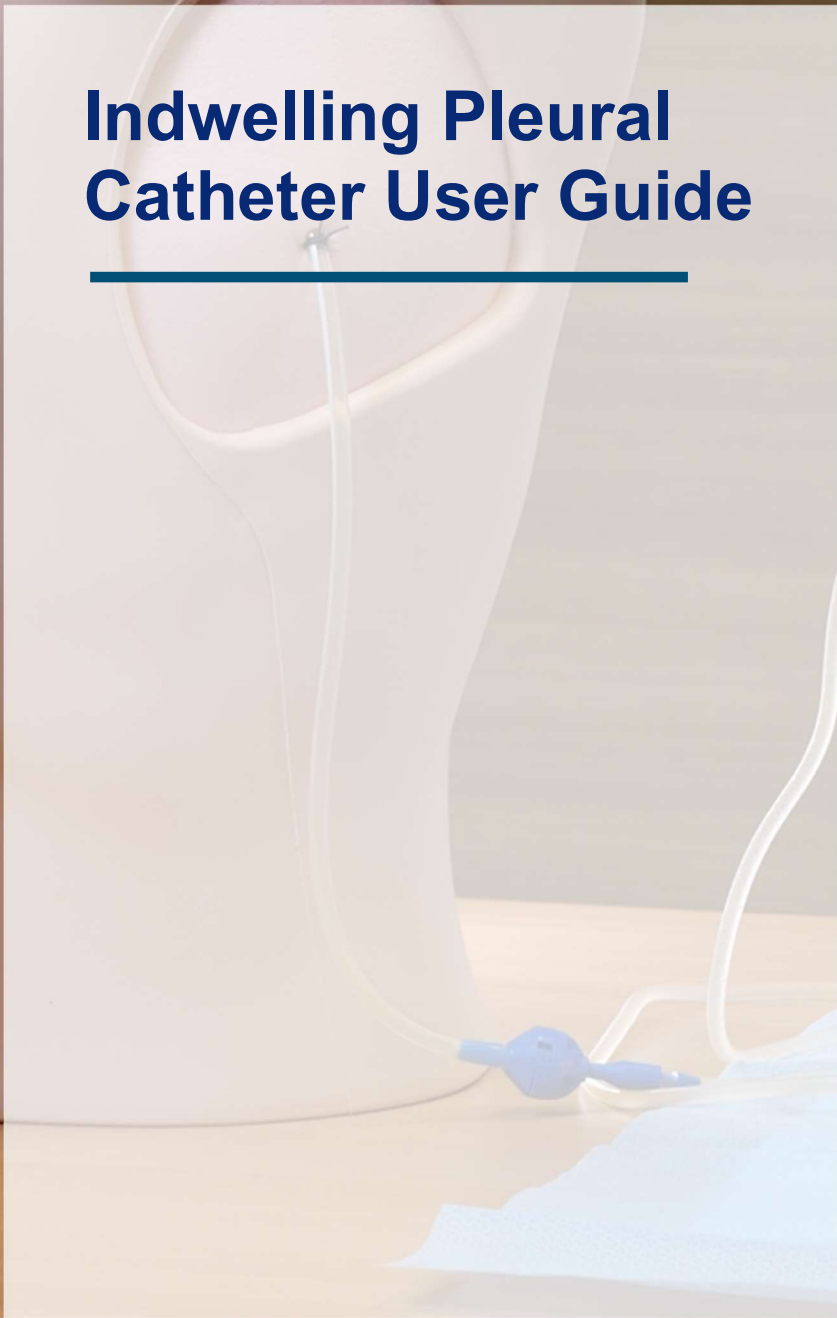


# Indwelling Pleural Catheter User Guide

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**Singapore General Hospital  
Pleural Service**

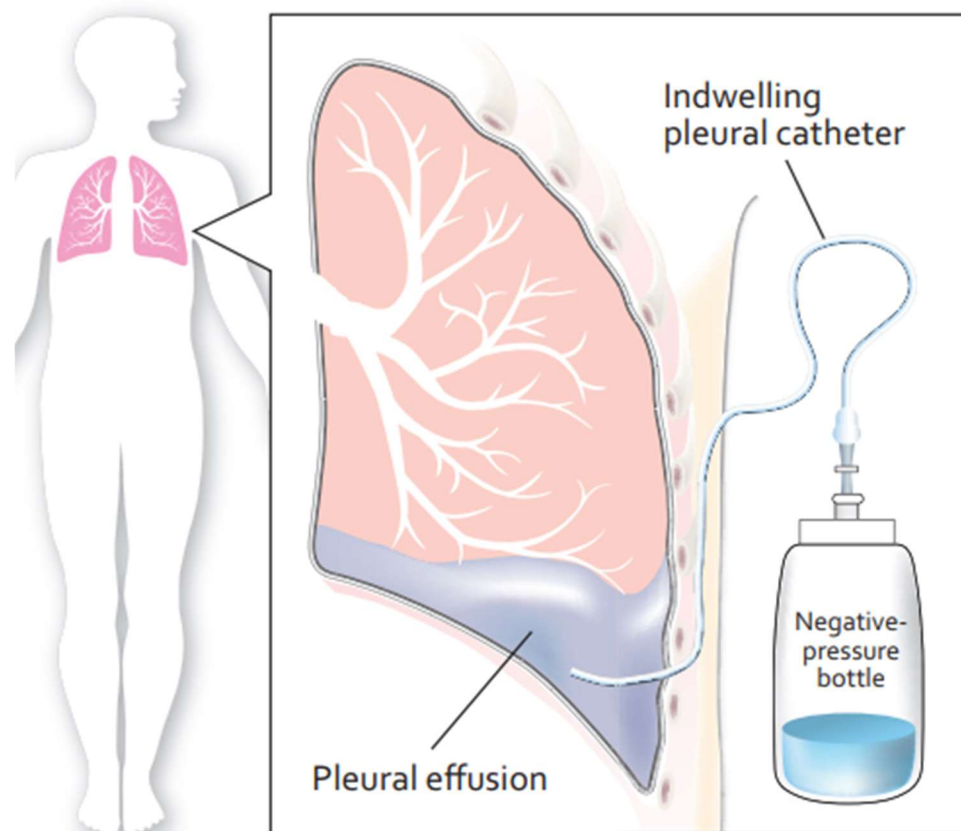
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**2022**

# Introduction

## What is an indwelling pleural catheter (IPC) and why do I need one?

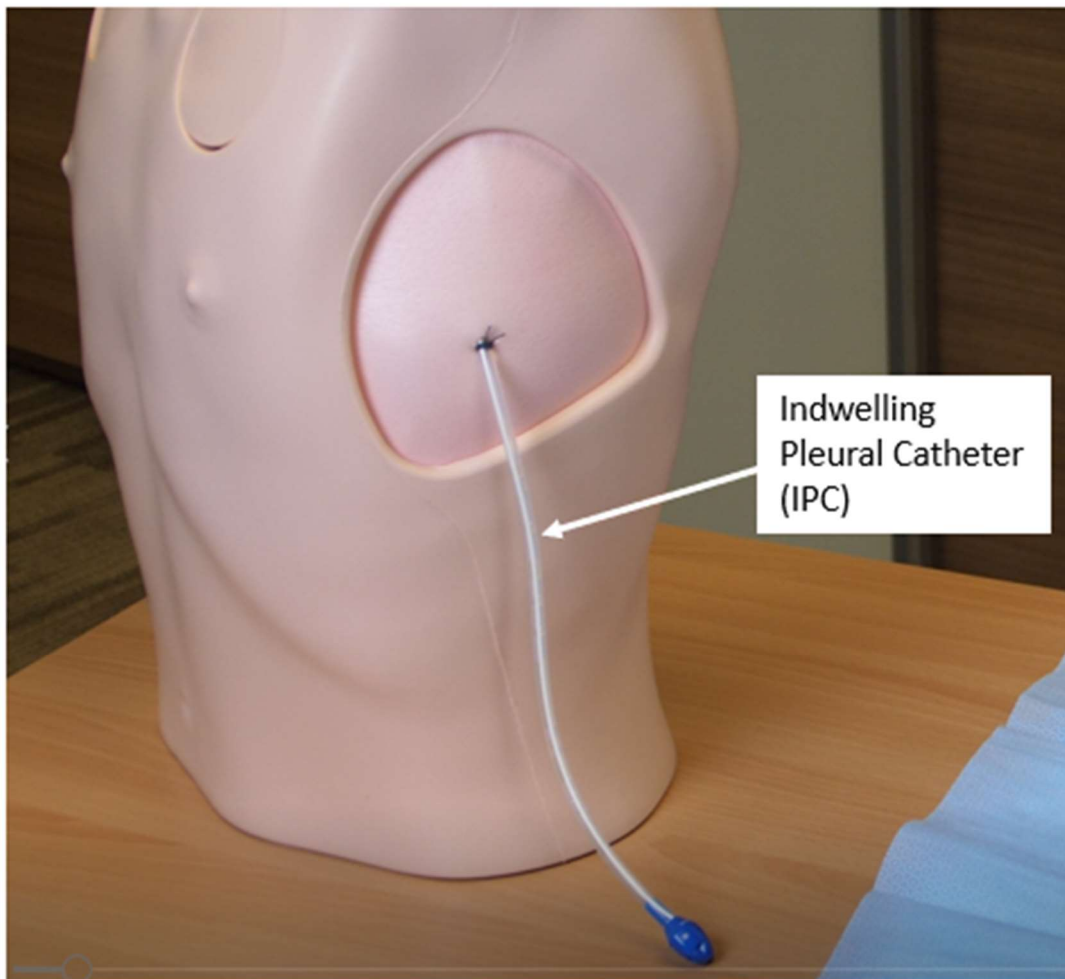
An IPC is a soft, flexible, plastic tube. It is placed at the side of your chest and allows fluid that has accumulated in the space between your lungs and rib cage to be easily removed. The aim is to relieve shortness of breath due to fluid accumulation in the chest.



*Image used with permission from American Thoracic Society*

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Because it is common for fluid to accumulate again after drainage, the IPC remains in place for as long as needed and allows fluid to be drained easily without the need for hospitalisation (or repeated medical procedures that may be uncomfortable). When it is not in use, the IPC is capped and covered with a clean flat dressing - so it will not be visible under loose clothing and should not interfere with your normal activities.



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## Are there any risks involved with an IPC?

IPC placement is a relatively simple and safe procedure. Procedure-related problems include pain, which can be controlled with local anaesthesia and pain medication. Bleeding is usually minor and stops without any intervention; severe bleeding requiring an additional procedure or surgery (to stop the bleeding) is very rare. If you are taking any 'blood-thinners' (anti-platelet or anti-coagulation medication), please inform your doctor and nurse beforehand.

The IPC can be left safely in place for as long as it is needed. The main risk of having an IPC is infection of the skin or infection entering the chest through the IPC, but this is uncommon (affecting about 1 in 50 patients). In most cases, infections can be successfully treated with antibiotics with no procedures or removal of the IPC required.

*The risk of IPC-related infections is minimised with good IPC care and hygiene. We will teach you and your caregiver how to look after your IPC and drain fluid in a safe way.*

It is therefore important that handling of the IPC (and drainage of fluid) is done in a clean environment. Strict hand hygiene and proper technique is important to minimise the infection risk.

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## Are there any alternative treatments?

Yes, it is possible to remove fluid by inserting a needle through the chest. This procedure is called a pleural tap (or thoracentesis). It is a relatively safe procedure and can be done as an outpatient procedure. However, this will need to be repeated each time the fluid reaccumulates. In some patients, this leads to multiple procedures, along with a higher accumulated risk of complications that include pain, bleeding, and infection.

Another option is inserting a temporary chest drain for fluid removal. The complications of this procedure are similar with an IPC insertion. However, unlike an IPC, this procedure will require hospitalisation for complete fluid drainage, and the chest drain is usually removed before discharge from hospital. To reduce the risk of fluid reaccumulating, a substance, called talc, can be administered into the chest cavity (via the chest drain). Talc 'irritates' the outer surface of the lung and inner surface of the chest so that they 'stick' together. The success rate of medical talc to prevent fluid reaccumulating is approximately 70% and is only feasible if the lung can re-expand adequately (so that both surfaces are in contact after the fluid is drained). Adequate lung expansion is only seen in approximately 60 – 70% of the time, so this option may not be possible for all persons.

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## What happens after the IPC is placed?

*Insertion of the IPC can be done as an outpatient or day surgery procedure*

We will monitor you for a few hours after the procedure. If there are no complications, you may be discharged from the hospital with someone (family or caregiver) to accompany you home. If you are hospitalised at the time of IPC insertion, you will continue to be monitored in the hospital after the procedure.



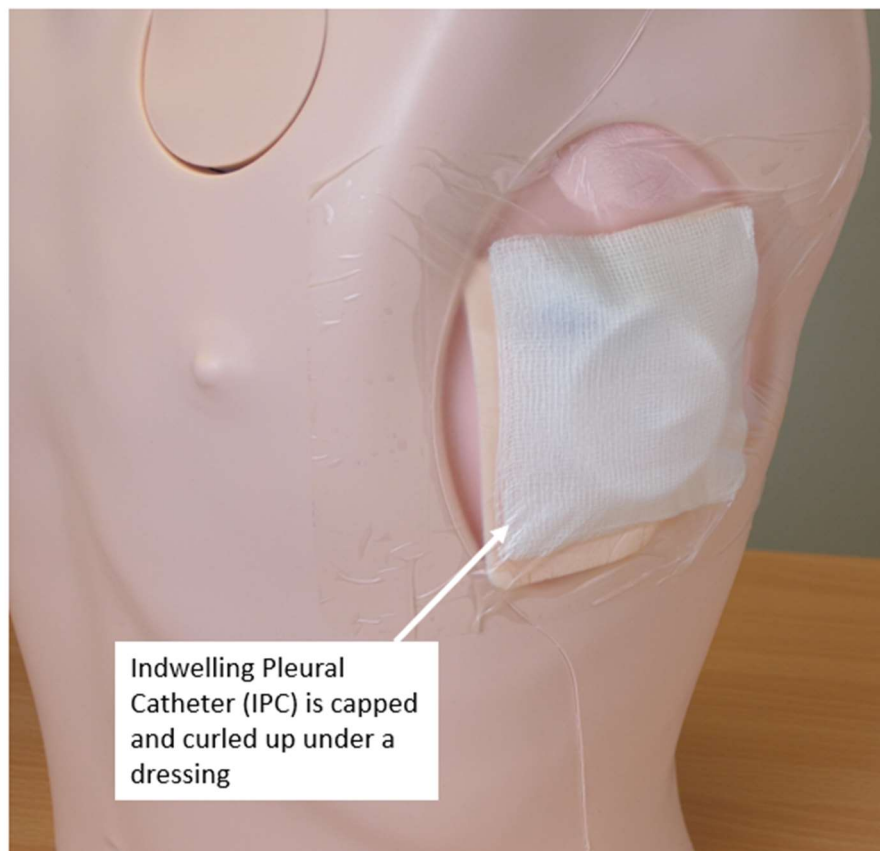
Our nurses will arrange a meeting with you and your caregiver to demonstrate how to care for the IPC. These sessions may be performed whilst you are hospitalised, or during an outpatient review.

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# Draining Fluid with the IPC

## Who will drain the fluid from my IPC?

Drainage of fluid is a straightforward procedure and can be performed with the help of a caregiver in the comfort of your own home, using drainage bottles or bags. We will teach you and your caregiver how to drain fluid in a safe way. On average, it takes about 5 – 15 minutes to drain the fluid. After fluid has been drained, the collection device can be disconnected, and the used bottle discarded in a waste bag. The IPC is then capped and covered with a clean flat dressing (see image below).





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More information is available in the following videos to guide you and your caregiver on IPC care and fluid drainage

**Drainage Bottle**



<https://www.youtube.com/watch?v=7EDXhDuScB0>

**Drainage Bag**



<https://www.youtube.com/watch?v=507HbGSCSNo>



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## How often should the fluid be drained?

*The frequency of fluid drainage varies from person to person*

Some patients may require almost daily drainage, while others require drainage only once in 1 - 2 weeks. Generally, the frequency of fluid drainage is guided by your symptoms (shortness of breath, chest discomfort or cough). In some patients, increasing the frequency of drainage may reduce the rate of fluid accumulation and potentially allow for IPC removal. Your doctor or nurse will discuss the drainage options with you to guide you on how best to drain fluid.

## What should I do if I still feel short of breath after draining fluid?

You should not drain more than 1000 ml of fluid from the chest per day. For some patients, there may be other reasons (other than fluid accumulation in the chest) for the symptoms. Please inform your doctor or nurse if you continue to feel short of breath after fluid has been drained.

## It gets painful whenever I am draining fluid from my IPC, what should I do?

It can be normal to feel discomfort during fluid drainage. This can usually be minimised by draining the fluid slowly and stopping as soon as you feel any discomfort. When using a vacuum bottle drain, you can slow down the flow by releasing the button (or slider) on the flow control unit (see image below). You may also stop the fluid drainage altogether by releasing the button (or slider) fully, and resume fluid drainage again, when comfortable to do so. If you continue to experience persistent pain after fluid drainage has stopped, please contact your doctor or nurse.



Initiate fluid drainage by gently pushing the button, or gently pushing the slider forward.



Slow down fluid drainage by releasing the slider partially. Release the slider or button fully to stop fluid drainage.

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## **Can the IPC ever be removed?**

IPCs are designed to remain in position permanently. However, for some persons, fluid accumulation in the chest slows down significantly over time and the IPC may no longer be needed. In these cases, we may recommend removing the IPC. Removal of the IPC is straightforward and can be performed as a day case procedure.

## **What does it mean if the volume of fluid drainage is smaller, or if no fluid is drained at all?**

First, check to ensure that the IPC is not bent or kinked, the vacuum indicator (of the drainage bottle) is fully depressed, and the drainage bottle clamp is left open. In the absence of the above factors, it may mean that fluid accumulation in the chest has slowed down, and hence there is minimal fluid for drainage.

However, it is also possible that poor fluid drainage could be due to blockage of the IPC (occurs in less than 1 in 20 persons), and this may require administration of medications through the IPC to unblock it. If the volume of fluid drainage stops abruptly, or if you have three consecutive fluid drainages of less than 100 ml, do inform your doctor or nurse.

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# Taking care of your IPC

## What do I need to monitor or look out for?

**Make a record of the date of drainage, and the amount of fluid drained each time. Any colour change or appearance of the fluid should be reported to your doctor or nurse.**

**Dressing of the IPC should be changed at least once a week. In addition, it must be changed whenever it is soiled, wet or loose.**

**Fever and/or increasing redness, pain, swelling or fluid discharge around the IPC site may indicate that the IPC (or overlying skin) is infected. If any of these do occur, please inform your doctor or nurse.**

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## **Will the stitches be removed?**

Two stitches are applied when your IPC is inserted. One can be removed 7 – 10 days later, during a scheduled review. The second stitch secures the IPC in place but can be removed after a few weeks. Removal of stitches can also be performed by a community nurse, or a doctor/nurse in a family clinic or polyclinic.

## **Can I wash and shower normally?**

After insertion of the IPC, you will have a dressing covering the site of the IPC. We advise you to keep this area dry for the first 7 – 10 days until the first stitch is removed.

You may shower with the IPC placed underneath a waterproof dressing. Be sure that the dressing is completely and securely attached, and the IPC and gauze pads are all contained underneath. If possible, plan to shower shortly before your scheduled dressing change in case the dressing gets wet. The dressing must be changed if it gets wet. Clean and dry the area first, before applying a new and clean dressing.

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## What should I do if the IPC is accidentally cut or damaged?

If the IPC is cut or damaged, clamp the IPC (close to the skin) using the emergency blue clamp from the procedure pack. Push it onto the IPC until the tube is pinched close (this will prevent air from entering, or fluid escaping, the chest) and inform your doctor or nurse immediately.



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## What happens if the IPC is accidentally pulled out?

There is a soft cuff around the IPC which is positioned under the skin. As your skin heals around this cuff, it helps to keep the IPC in position. The stitches that hold your IPC in place can therefore be removed safely once the skin has healed in a few weeks. In the unlikely event that the IPC is dislodged, or pulled out partially, cover the exit site with a clean dressing and seek immediate medical attention.



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## Can I continue to drain fluid from my IPC if I am admitted to another hospital?

Yes, an adaptor IPC line allows for easy connection to other drainage devices used in local hospitals.



IPC Line



Manual drawing of pleural fluid with a syringe connected to the IPC line.

A chest drain tubing attached to an underwater chest drainage system, may also be connected via the IPC line to drain pleural fluid.

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## **Who should I contact for help and advice?**

We will continue to provide regular follow up appointments with you and your caregiver. This will help us monitor how well the IPC is working, assess for potential complications, and determine if the IPC is no longer needed and may be removed.

We encourage you to contact us early if you encounter any problems with your IPC.



# Lung Centre



Singapore  
General Hospital

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