

# The investigation of unilateral pleural effusions: a quality improvement project

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## Aims

To streamline the investigation and referral process of new unilateral pleural effusions by setting up a dedicated pleural clinic, based on British Thoracic Society 2010 guidelines.

## Methods

It was noticed that there were delays in investigating patients with new unilateral pleural effusions and associated multiple hospital visits. To investigate this, a retrospective audit of patients undergoing a diagnostic aspiration for a new unilateral pleural effusion between June and December 2016 was conducted (n=45). Time (in days) from radiological evidence of a new unilateral pleural effusion to diagnostic pleural aspiration, computed tomography (CT) of thorax and respiratory physician review was tabulated.

The results were used to set up a pleural clinic in February 2017, where patients with a new pleural effusion would undergo the relevant investigations and review in a single visit. A single online referral form, direct to the pleural clinic, was created, with referrals vetted by the pleural clinic consultant.

We aimed for patients referred with a new unilateral pleural effusion to be seen by a respiratory physician, undergo an ultrasound-guided pleural aspiration and a CT thorax (if appropriate) within 2 weeks. They should undergo these investigations in the least amount of hospital visits possible (ideally a single visit).

The subsequent data was collected from the pleural clinic and compared with the initial data set (n=33) to assess its impact on patient investigation.

## Results

Average times reduced from:

- > 19 days to 7 days for pleural aspiration
- > 20 days to 9 days for CT thorax
- > 20 days to 6 days for respiratory physician review.

The percentage of patients meeting the 2-week wait criteria is illustrated in Table 1.

**Table 1. The percentage of patients meeting the 2 week-wait criteria**

	Initial data	Pleural clinic data
Pleural aspiration done within 2 weeks	55%	94%
CT thorax done within 2 weeks	31%	82%
Respiratory physician review within 2 weeks	61%	88%

Prior to the start of the pleural clinic, only 19% of patients completed their investigations in under two hospital visits. The pleural clinic increased this to 87% with half these requiring only a single visit.

## Conclusion

The initial project data demonstrated weaknesses in the referral pathway, with delays in investigation and review. This is particularly important in the context of a potential underlying malignancy causing the pleural effusion.

The creation of the pleural clinic has significantly improved the time taken to investigate new unilateral pleural effusions. It has reduced the number of hospital visits required, in a patient group that is often elderly and limited by shortness of breath and will likely have improved patient experience. This project demonstrates a model that could be applied to other hospitals to improve their investigation of pleural effusions. ■

## Conflict of interest statement

The authors certify that they have no affiliations with or involvement in any organisation or entity with any financial interest or non-financial interest in the subject matter or materials discussed in this manuscript.

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