

**Aims**

1. To develop and implement a modified WHO surgical checklist for use in PI; specifically thoracoscopy (TS) and chest drain (ICD) insertion.

**Methods** Adverse events for TS were identified using a locally developed TS database (previous 3 years data) and ICD events were identified using our unit's BTS National audit data.

Following a MDT discussion we developed and implemented a modified WHO checklist for the specific risks of TS and ICD. The checklists follow the three-part structure recommended by the WHO; 1. Sign in (before arrival to procedural area), 2. Time out (before starting), 3. Sign out (before leaving).

Checklist effectiveness was reviewed 6 months following implementation.

**Results****Pre-implementation**

For TS there were a small number of adverse events (mistaken identity of an abnormal ECG in patients with similar names, delay in pre-procedure blood results, ECG not performed, intravenous fluids not readily available, kinked ICD, thromboprophylaxis not prescribed); most events led to delayed procedure only.

For ICD insertion, several avoidable patient safety issues were identified: 5.6% no support nurse available; insufficient documentation of observations pre (13.7%) and post (5.6%) ICD insertion.

**Post-implementation**

No adverse events recorded in TS and an improvement in ICD patient safety issues (procedure not done without support present, observations documented in 42% of cases). Team-working and communication reported to have improved.

However, ICD checklist completion rate was poor (53%), with form retrieval rates in TS low compared to reported completion rates (66.7% v 100%). Forms were generally incomplete. **Conclusion** Most adverse events identified were due to system errors despite previously available safeguards. Well-designed procedural checklists can improve patient safety. Paper versions were not fully completed therefore we have incorporated an electronic version of the checklist into the procedural database, which has to be completed before the procedure starts.

**REFERENCES**

- 1 *N Engl J Med.* 2009;**360**:491
- 2 *Clin Med.* 2014;**14**:468–474

### P185 EVALUATION OF THE LENT PROGNOSTIC SCORE IN A LARGE TERTIARY PLEURAL SERVICE

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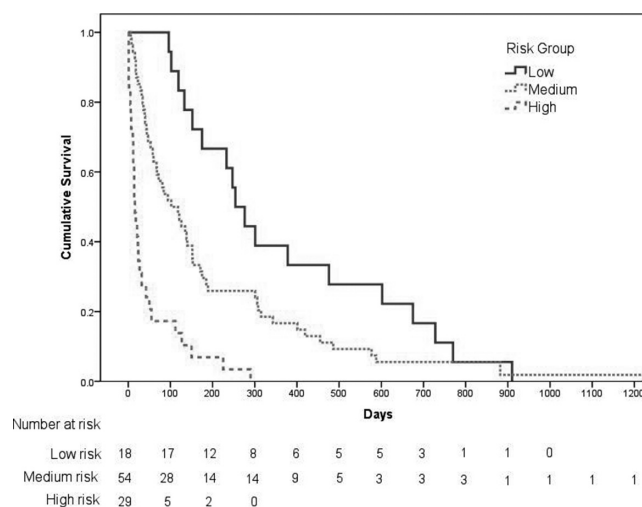
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**Introduction and objectives** Reliable predictors of survival in malignant pleural effusions (MPE) have far reaching applications in clinical practice, not least tailoring individual treatment strategies. The 'LENT' score (pleural fluid Lactate dehydrogenase; Eastern Cooperative Oncology Group performance score; Neutrophil-to-lymphocyte ratio; Tumour type) was developed and validated as a clinical prognostic scoring system from three international prospective patient databases.<sup>1</sup> The aim of this study

was to evaluate the LENT score in a further UK population of patients with MPE, geographically separate from those in the original study.

**Methods** Our hospital is a large tertiary centre for a physician-led pleural service (including medical thoracoscopy), a regional mesothelioma centre and a regional thoracic surgical centre. A retrospective study of all patients with positive (i.e. diagnostic for malignancy) pleural cytology or histology from 2010 to 2014 was undertaken. This timeframe allowed a minimum of 12 months follow-up for all patients. Survival data was obtained from national death registries. All patients in whom all LENT criteria were available were included in the analysis. A Kaplan-Meier curve and a Cox regression model were used to assess the LENT risk category. Harrell's C statistic was used to assess the accuracy of the regression model and mortality rates at time points of interest were calculated.

**Results** The LENT score was calculated for 101 patients diagnosed with MPE. The median survival (days, IQR) for the low (n = 18), medium (n = 54) and high risk (n = 29) groups were: 254 (152–602), 102 (40–301) and 16 (7–42). In the high risk group, only 31% of patients survived 1 month and 7% survived 6 months. There is a statistically significant difference in the survival times in the different risk groups according to the log-rank test (p < 0.001). Harrell's C statistic in this cohort is 0.69 (see Figure 1).



**Abstract P185 Figure 1**

**Conclusions** The LENT scoring system has again been shown to be a good tool for predicting survival in patients with MPE when applied to a geographically distinct cohort of patients to the original study. The LENT score continues to be a clinically valuable tool in the assessment of patients with MPE.

**REFERENCE**

- 1 Clive AO, et al. *Thorax* 2014;**69**(12):1098–104

### P186 CHEST DRAIN CARE BUNDLE IMPROVES CHEST DRAIN INSERTION IN DISTRICT GENERAL HOSPITAL

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**Introduction and objectives** Chest drain insertion is a common advanced procedure with a significant associated risk of pain, distress and serious complications. Nationally, audit and patient safety work has highlighted a number of safety concerns around chest drain insertion.

Previous audit work has demonstrated poor levels of documentation; particularly around use of pre-medication, use of ultrasound guidance and consent. This has obvious potential consequences for patient safety and thus is an important target for improvement work.

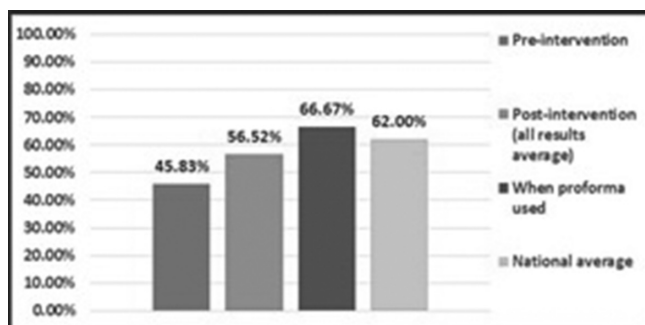
**Method** National best practice standards were identified through review of national guidance. This work quantifies current standards of documentation in Gloucestershire against national best practice standards. Drain insertion was prospectively analysed over a 3 month period to establish baseline standards of documentation. A combination of accessible and easy-to-read guidelines, education and the introduction of a chest drain bundle were introduced. Chest drain insertion was then re-audited over a further 3 month period and assessed for improvement.

**Results** The data set included 24 pre-intervention and 23 post-intervention. Results demonstrated an improvement in many areas of documentation. Prior to the intervention, documentation was found to be poor; especially in areas related to consent, use of ultrasonography, pre-medication, post-procedure advice, details regarding length and size of drain and investigations requested. Overall the results showed improvement in most areas of documentation.

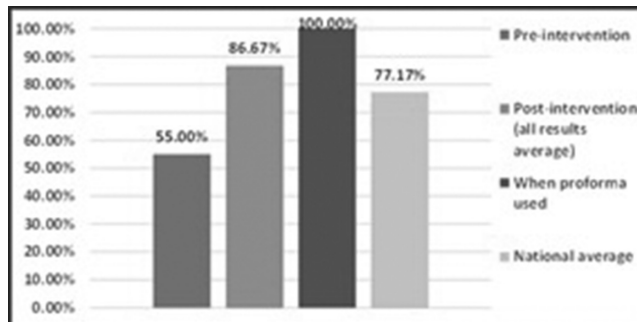
The care bundle demonstrated improvement in documentation compared to the classical “freehand” documentation. However, only 40% of cases used the new proforma due to a mixture of staff rotation and an unexpectedly high proportion of drains inserted in non-targeted areas including the emergency department, theatre and intensive care.

Outcomes were also compared against the recent national findings from the 2015 British Thoracic Society Pleural Procedures audit. Use of the chest drain bundle created improved compliance with several key standards; particularly written consent, bedside ultrasonography, nursing chest drain observation and care on designated respiratory ward.

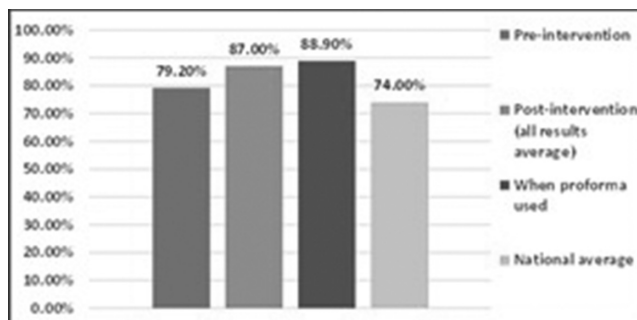
**Conclusion** The chest drain care bundle improves documentation of this important procedure. This is important to ensure uniformity in clinical “best” practice, aid communication and protect patients. Further improvements can be made by more widespread education and access to the care bundle.



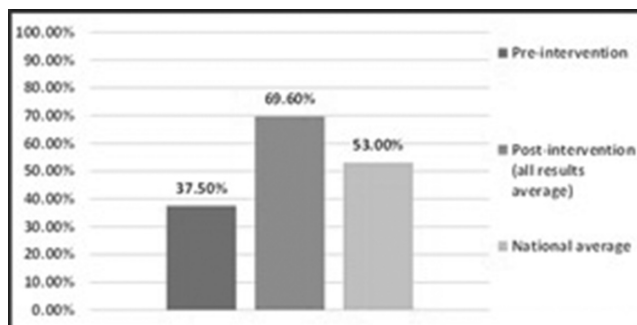
**Abstract P186 Figure 1** Comparison of written consent obtained pre-intervention, post-intervention, when proforma exclusively used and national average. Target = 98%



**Abstract P186 Figure 2** Comparison of use of bedside ultrasonography pre-intervention, post-intervention, when proforma exclusively used and national average. Target = 100%



**Abstract P186 Figure 3** Comparison of use of nursing drain observation sheets pre-intervention, post-intervention, when proforma exclusively used and national average. Target = 100%



**Abstract P186 Figure 4** Comparison of care on respiratory ward pre-intervention, post-intervention and national average. Target = 100%

**P187 THE DIFFICULTY IN IMPLEMENTING A SAFETY CHECKLIST FOR PLEURAL PROCEDURES**

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**Introduction** There are significant risks associated with pleural procedures.<sup>1</sup> NHS England have been cataloguing never events since 2012 and pleural procedure related events are one of the most common procedures causing harm that we as physicians perform.<sup>2</sup> The WHO Surgical Checklist was developed to minimise morbidity and mortality associated with high-risk procedures.<sup>3</sup> We introduced a modified WHO safety checklist for all pleural procedures following 2 never events in our trust.