

Appendix 8: Gap analysis from current pleural medicine service provision to recommended minimal standards

Hospital Type	Pleural Service Category	Access to chest drain operator out of hours	Access to TUS out of hours	Access to pleural aspiration out of hours	TUS Mentor	Pleural lead	Dedicated out of hours pleural pathways	Current service, challenges for implementation and potential solutions
University/teaching	3	Yes (off site)	Yes (off site)	Yes (off site)	No	Yes	No	<p>Current Service: *Dedicated respiratory on call team 24hrs a day. SpR non-resident at night. Provides access to TUS and pleural interventions out of hours, though off site</p> <p>Challenges: *Access to pleural operator in life threatening emergency out of hours *Training, assessment of operator level skill not formalised</p> <p>Solutions: *Formalise medical registrar role in life threatening emergency needing aspiration *Thoracic ultrasound mentor – review all new starters, additional training *Formal pleural induction for all medical SpRs including respiratory (training if needed) *Trust-wide agreed out of hours pleural management pathway</p>
University/teaching	3	Yes (on site)	Yes (on site)	Yes (off site)	Yes	Yes	Yes	<p>Current Service: *Dedicated respiratory on call team 24hrs a day. SpR non-resident at night. Provides access to TUS and pleural interventions out of hours, though off site</p> <p>Challenges: *Access to pleural operator in life threatening emergency out of hours (current cover provided by radiology) *Training, assessment of operator level skill not formalised *Formal job planning for mentorship and training of all juniors not in place</p>
University/teaching	3	Yes (on site)	Yes (on site)	Yes (on site)	No	No	Yes	<p>Current Service: *Dedicated resident respiratory SpR 24hrs a day. Access to TUS and pleural interventions out of hours, including immediate response to life-threatening emergencies * Pleural referrals accepted 9-5 Monday-Friday for complex or trial-eligible cases on-site, or any pleural issue in off-site Oncology Centre</p> <p>Challenges: * Number and turn-over of trainees requiring TUS mentorship and pleural training * Formal job planning for TUS, pleural training, pleural lead not in place * Delivering consistency, adherence to guidelines and standardisation of kit across large primary site (e.g. in ED/ICU/Surgery), plus off-site oncology centre * Poor TUS and pleural procedure competence in off-site Oncology Centre</p> <p>Solutions: * Job-planned time for delivery of TUS mentorship and pleural lead roles *Hospital/health board wide agreed guidelines, pleural pathways (including OOH) & kit *Identification/training of TUS & Procedure competent operators in off-site locations</p>

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University/ teaching	3	Yes (off-site)	Yes (off-site)	Yes (off site)	Yes	Yes	Yes	<p>Current Service:</p> <ul style="list-style-type: none"> * Access to TUS and Pleural interventions out hours by Emergency Department, Medical Emergency Team and Cardiothoracic Surgery. * Pleural referrals accepted Monday to Friday 9-5 and seen on-site with daily intervention lists, patients are seen within 24 working hours. <p>Challenges:</p> <ul style="list-style-type: none"> * Meeting pleural and TUS training requirement of Respiratory, CMT and GIM trainees. * Out of hours pathway support for inpatients and life threatening emergencies (currently provided by off-site radiologists – covering two sites). * Out of hours cover for complex secondary pneumothorax. * No job plan for Pleural mentorship and training for Resp and GIM trainees. * Difficulty in formalising a training pathway for non-respiratory trainees.
District General	2	Yes (on site)	Yes (on site)	Yes (on site)	Yes	Yes	Yes	<p>Current service</p> <ul style="list-style-type: none"> * Access to TUS and pleural interventions out of hours is provided by the Emergency and Intensive Care Departments * Pleural team (Consultant, Associate specialist and nurse specialist) accept referrals Monday to Friday 9am-4pm <p>Challenges:</p> <ul style="list-style-type: none"> * We have merged with another trust in which there is no pleural lead or dedicated OOH pleural pathway within the sister trust * Although training opportunities trainees find it difficult to schedule time within their timetables to attend the daily pleural clinic. * Out of hours cover for complex pleural interventions (complex pneumothoraces) is provided by consultant interventional radiologist off site at one hospital site only. * No job plan for Pleural mentorship and training for Resp and GIM trainees. <p>Solutions:</p> <ul style="list-style-type: none"> * Agreed guidelines and pleural pathways between both hospitals within the Trust. * Formalised job plan with time set aside for delivery of TUS mentorship and pleural lead roles
University/ teaching	2	Yes (on-site)	Yes (on-site)	Yes (on-site)	No	Yes	No	<p>Current Service:</p> <ul style="list-style-type: none"> * Pleural referrals accepted Monday to Friday 9-5 with daily intervention lists, and ability to see patients within 24 working hours if clinically indicated * General respiratory weekend cover (9-1) but not always able to provide TUS and pleural procedural support due to variations in experience and competence * Out of hours cover potentially available for life-threatening cases with radiology, Emergency department, Intensive Care Unit, Cardiothoracic Surgery, and General Medical SpRs all on-site <p>Challenges:</p> <ul style="list-style-type: none"> * Formalising arrangements for out of hours pleural pathways and interventions as currently provided on an ad-hoc goodwill basis

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								<p>*Provision of procedural training for respiratory and other medical trainees, and maintaining record of competence across specialties</p> <p>*Oversight of TUS training across different specialties and establishing mentor role(s)</p> <p>*Standardising equipment across departments (ED, medical, cardiothoracic surgery)</p> <p>Solutions:</p> <p>*Recent formation of cross-specialty pleural working group with remit of developing Trust-wide guidelines and pathways, including out of hours service provision</p> <p>*Develop pleural induction for medical trainees (CMT and GIM) to include simulation based training in procedures; likely to require regional as well as local coordination</p>
District General	3	Partial*	No	Yes	Yes	Yes	No	<p>Current Service:</p> <p>*Weekly pleural clinic and list</p> <p>*Ad hoc pleural service 9-5 weekdays (2 pleural consultants/4 respiratory SPRs)</p> <p>Challenges:</p> <p>*Out of hours drains and aspirations performed by Med SPR/CMTs, A&E and ICU – no formal assessment of operator skills (with exception 4 respiratory SPRs)</p> <p>*Radiology outsourced therefore unable provide out of hours TUS</p> <p>*Insufficient trained chest drain and TUS operators</p> <p>Solutions:</p> <p>*Job planned time for TUS mentorship and pleural training</p> <p>*Agree and implement Trust wide out of hours pleural pathway</p> <p>*Consider city sector wide out of hours pleural pathway</p>
University/teaching	3	Yes (on site) <i>1-2 medical SpRs at all times. Surgical and ITU SpRs also available</i>	Yes (on site) <i>On site radiology SpR +/- consultant at all times</i>	Yes (on site)*	Yes	Yes	No	<p>Current Service:</p> <p>*Pleural service predominantly focussed on outpatient/admission avoidance and research. Supports inpatient respiratory teams as needed. Weekend respiratory consultant cover for AMU and wards, with support from on call medical teams.</p> <p>Challenges:</p> <p>*Guaranteeing proficiency of non-respiratory SpRs covering respiratory ward. Maintaining communication between general respiratory teams and pleural team</p> <p>*Training, assessment of operator level skill not formalised</p> <p>Solutions:</p> <p>*Formalise medical registrar role in life threatening emergency needing aspiration</p> <p>*Formal pleural induction for all medical and respiratory SpRs and ensuring knowledge of local guidelines</p> <p>*Trust-wide agreed out of hours pleural management pathway</p>
Large District general (population approx. 350K)	2	Yes (on site highly likely but not guaranteed, otherwise off site)	Yes (off site)	Yes (on site)	No	Yes	No	<p>Current Service:</p> <p>*Typical on site Emergency / Acute medicine/ Intensive care doctor cover 24/7. Chest drain operator not necessarily available (e.g. Emergency department SpR with surgical training background may not have confirmed competency).</p> <p>*TUS accessible but not through consistent pathway (Radiology outsourced after 10pm and would currently be dependent on accessing other off site on-call staff)</p>

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								<p>Challenges:</p> <ul style="list-style-type: none"> *Ensuring Emergency level TUS operator ON SITE 24 hrs / day *Pleural specific induction for new starters *Formalising Thoracic USS mentor / pleural lead (with appropriate time in job plan) *Implement out of hours pathways
District General	2	N	N	partial	Y	N	N	<p>Current service:</p> <ul style="list-style-type: none"> *Juniors trained in ALS can do emergency aspiration for pneumothorax *No regular pleural ultrasound trained presence out of hours *Intermittent pleural service provision by consultant only * Total of 3x respiratory SpRs and 1x acute medicine SpR trained in ultrasound <p>Challenges:</p> <ul style="list-style-type: none"> *Insufficient ultrasound trained staff *Insufficient chest drain trained staff <p>Solutions:</p> <ul style="list-style-type: none"> *Ultrasound training for all GIM accredited trainees and consultants *Increase radiology cover for out of hours pleural ultrasound *Formal pleural induction for all medical SpRs including respiratory (training if needed) *Trust-wide agreed out of hours pleural management pathway