was CO verified smoking abstinence at 12 weeks (CO devices delivered to participants’ home). Secondary outcomes included self-reported continuous abstinence at 4 and 12 weeks and 7-day point prevalence abstinence at 12 weeks.

Results Across the entire cohort (n=300), the CO-verified 12-week abstinence rate was 37%. Secondary outcomes were 49% self-reported continuous abstinence at 4 weeks and 39% self-reported continuous abstinence at 12 weeks (table 1). In terms of treatment options, 10% of all participants used NRT, 44% vaped, and 35% used a combination of NRT and vaping to help them stop smoking. The average number of advisor interactions via the app was 50 per participant. Higher quit rates were achieved when NRT/Vaping were used compared to the app alone. Feedback from cohort 1 highlighted the need for education on different treatments. This was implemented in cohort 2, leading to increased abstinence rates compared to cohort 1 (CO verified 12-week abstinence 34% cohort 1 versus 40% cohort 2).

Conclusion The results of this deep-dive study into a regional NHS staff tobacco dependency treatment offer provides assurance of clinical effectiveness across this large-scale programme of work.

Introduction Airway remodelling due to cumulative tobacco smoking and its association with airflow limitation severity in COPD is difficult to characterise using non-specific methods such as spirometry.

Objective To evaluate the relationship between smoking history and features of small to medium-sized airway obstruction in participants with COPD with fast-response capnometry using TidalSense’s N-Tidal™ device.

Methods 305 COPD GOLD stage 3/4 participants were included from three longitudinal observational studies conducted in the UK: COPD Breathing Record Study (CBRS); CBRS 2; and the Cardiorespiratory Diagnostic Study (CARES). Tobacco smoking data was collected at baseline; capnography data was collected twice daily for up to 6 weeks. CO2 features from the expiratory upstroke and plateau phases known to correlate with the degree of airways obstruction in COPD were compared to participants’ smoking histories.

Results Higher smoking pack-years was associated with greater curvature in the alpha-angle region, which may relate to structural airway remodelling of smaller airways. The alpha-angle feature of obstruction demonstrated a positive non-linear correlation with pack years, indicating that a greater degree of airways obstruction is associated with increased cumulative exposure to smoking.

Alpha-angle features showed a significantly altered CO2 waveform geometry beyond 40 pack years, suggesting this
level of smoking history may represent a threshold beyond which demonstrable airway remodelling is highly likely. Of participants with over 40 pack years, 96% had an FEV1/FVC <0.7, further supporting this hypothesis. Conclusion CO2 waveform features of airway obstruction demonstrate a dose-response relationship with cumulative smoking history. N-Tidal may be able to directly probe airway remodelling as a result of smoking, potentially enabling early identification of physiological changes undetectable by spirometry.

Please refer to page A285 for declarations of interest related to this abstract.

**Abstract S76 Table 1 Breakdown of referrals made to smoking cessation services with available outcome data**

<table>
<thead>
<tr>
<th>Total (n)</th>
<th>Total (% of referrals received)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total number of referrals with available outcome data</td>
<td>742</td>
</tr>
<tr>
<td>Number of individuals contacted who accepted an appointment</td>
<td>351</td>
</tr>
<tr>
<td>Number of individuals contacted who declined the service</td>
<td>124</td>
</tr>
<tr>
<td>Unable to contact following receipt of referral</td>
<td>254</td>
</tr>
<tr>
<td>Other (e.g., insufficient details on referral, out of area)</td>
<td>13</td>
</tr>
</tbody>
</table>

**S76 THE SUMMIT STUDY: FOUR-WEEK QUIT RATES AMONGST INDIVIDUALS REFERRED TO STOP SMOKING SERVICES FOLLOWING ATTENDANCE AT A LUNG HEALTH CHECK**

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10.1136/thorax-2023-BTSabstracts.82

**Introduction** Lung Cancer Screening (LCS) reduces lung cancer related mortality, and LCS participation provides a valuable opportunity to offer smoking cessation interventions to a population experiencing long-term tobacco dependence. Here, we examine the impact of an ‘opt-out’ smoking cessation referral strategy on Stop Smoking Service (SSS) attendance and four-week quit rates in a LCS context.

**Methods** The SUMMIT Study (NCT03934866) is a prospective observational cohort study which aims to assess the implementation of Low-Dose Computed Tomography screening for lung cancer in a high-risk population and validate a multi-cancer early detection blood test.

LCS eligibility was assessed at a baseline Lung Health Check (LHC) where all individuals currently smoking tobacco were given Very Brief Advice on smoking cessation. For those resident in boroughs where community SSS were available and accepted secondary care referrals, an ‘opt-out’ referral to a SSS was made on their behalf unless they declined consent.

Individuals referred to SSS following attendance at a LHC between 8 April 2019 and 31 January 2020 were included in the analysis. Referral outcome data was obtained from SSS individually.

**Results** Outcomes were available for 742 referrals across five SSS. 47.3% (n=351/742) of individuals accepted an appointment with the service when contacted. 16.7% (n=124/742) declined the service and 34.2% (n=254/742) could not be contacted after being referred (table 1).

65.5% (n=230/351) of those accepting an appointment set a quit date. Amongst these individuals, the four-week quit rate was 57.4% (n=132/230). 40.0% (n=92/230) did not quit and 2.6% (n=6/230) were lost to follow-up. The overall four-week quit rate amongst all individuals referred was 17.8% (n=132/742).

**Discussion** Long-term abstinence rates amongst untreated smokers are reportedly 3–5% after a quit attempt (Hughes et al., 2004). In our cohort, two-thirds of individuals accepting a SSS appointment following attendance at a LHC seriously attempted to quit by setting a quit date and the four-week quit rate amongst those doing so was 57.4%. While it remains to be seen how this translates into long-term abstinence, our data suggests that opt-out policies which proactively refer individuals who smoke tobacco to SSS following interaction with a LCS programme may be beneficial.

Please refer to page A285 for declarations of interest related to this abstract.

**S77 DEVELOPMENT OF A WEB-BASED SMOKING CESSATION TOOL TO FACILITATE ACCURATE NICOTINE REPLACEMENT THERAPY (NRT) PRESCRIPTION AND ONWARD REFFERAL TO COMMUNITY STOP SMOKING SERVICES**

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**Background** The NHS long term plan commits to offering all inpatients who smoke access to tobacco treatment services. Previous BTS audits at our trust, highlighted shortfalls in offering nicotine replacement therapy (NRT) and low rates of follow-up with community stop smoking services (CSSS). Poor recall of NRT prescription guidelines and how to refer to our three local CSSS (depending on patients’ postcodes) were identified as barriers.

**Methodology** We developed a web-based, interactive smoking cessation tool, which supports clinicians to prescribe the most appropriate nicotine patch and ‘as-required’ NRT (according to the patient’s history and preferences and local guidelines). The tool also forwards the user to the correct CSSS referral website according to the patient’s postcode.

We promoted the tool using educational posters (with QR code to the tool) and teaching sessions across medicine and surgery.

The impact was measured using questionnaires to assess clinician confidence, re-auditing NRT prescription rates and evaluating referral numbers to CSSS.

**Results** Our smoking cessation tool and education events increased the proportion of clinicians who felt confident to deliver very brief advice (25% pre-teaching to 79% post-teaching), prescribe NRT (25% to 73%) and refer patients to CSSS (25% to 97%) (n=33).

After the tool was introduced, we audited 121 patient notes across four departments, identifying 21 smokers. Smoking status was documented in 91(75%). NRT prescription rates increased from 25% in the 2021 BTS audit to 48% in