Hand-Arm Vibration Syndrome (HAVS) deep dive

2016/17

Introduction and background

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Safety, Technical and Engineering

Health & Safety Engineering Environment & Sustainable Development

Finance Business Management Risk, Analysis & Assurance

Background and Context

- Hand-Arm Vibration Syndrome (HAVS) is a condition caused by repeated, regular exposure to vibration from hand-held tools
- Using these tools can cause significant ill health if not monitored correctly. Medical complications can include painful and disabling disorders with nerves, blood vessels, muscles and joints of the hand, wrist and arm
- The effects can be permanent and make everyday life and work difficult
- HAVS is preventable, but once damage is done it is a permanent condition
- Health surveillance is vital to detect and respond to early signs and symptoms of HAVS.

Background and Context

- 7.(5) of The Control of Vibration at Work Regulations 2005 states that where an individual is diagnosed with HAVS, that the employer is to ensure that they are informed of findings from the diagnosis, review the workplace risk assessment and control measures
- As such, Network Rail's standard on health surveillance (NR/L2/OHS/00113) states that a level 1 investigation is required to be carried out for every new and worsening diagnosis of HAVS
- Line managers are also required to complete a health management action plan (HMAP) to assist them in managing the individual's health in the workplace.

Purpose of Deep Dive

- Network Rail agreed an ambitious 10 year strategy for employee health and wellbeing in September 2013
- By 2024, we aim to achieve the following in employee health and wellbeing:
  - There will be no incidences of newly diagnosed or worsening occupational health conditions due to Network Rail working practises
- The completion of this deep dive is anticipated to support identifying common root causes into HAVS diagnoses for 2016/17, to review the delivery of part of the above strategy and where possible, further reduce the risk of exposure to vibration, for Network Rail employees and those working on our infrastructure.

Methodology

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Data gathering approach

- All completed Level 1 investigations for 2016/17 were requested from the Routes. Those submitted were reviewed and information collated from them
- However, the data from these were of a poor quality and root causes for diagnoses were not included in the investigation reports
- Data on completed investigations is included in the next few slides
- Management information was also collated from OH Assist, Network Rail's approved occupational health provider and Torrent Trackside, Network Rail's tool maintainer
- The data within refers to all diagnosed HAVS cases for 2016/17.

Investigation findings

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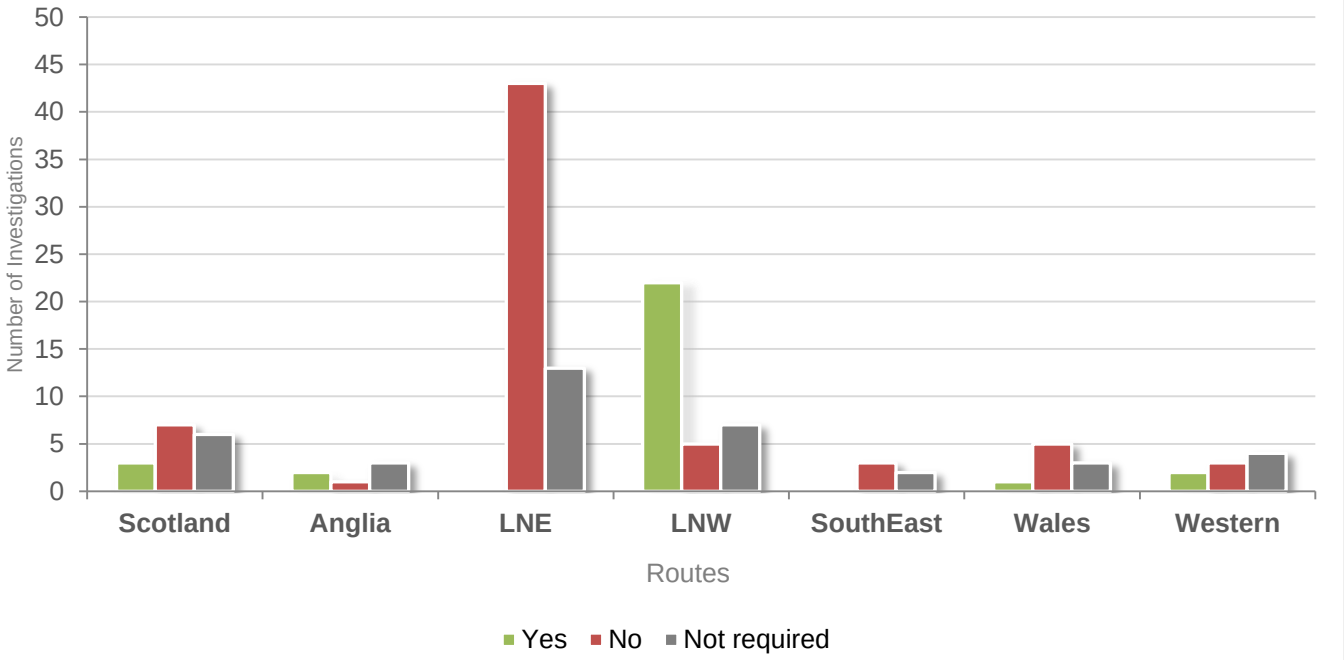
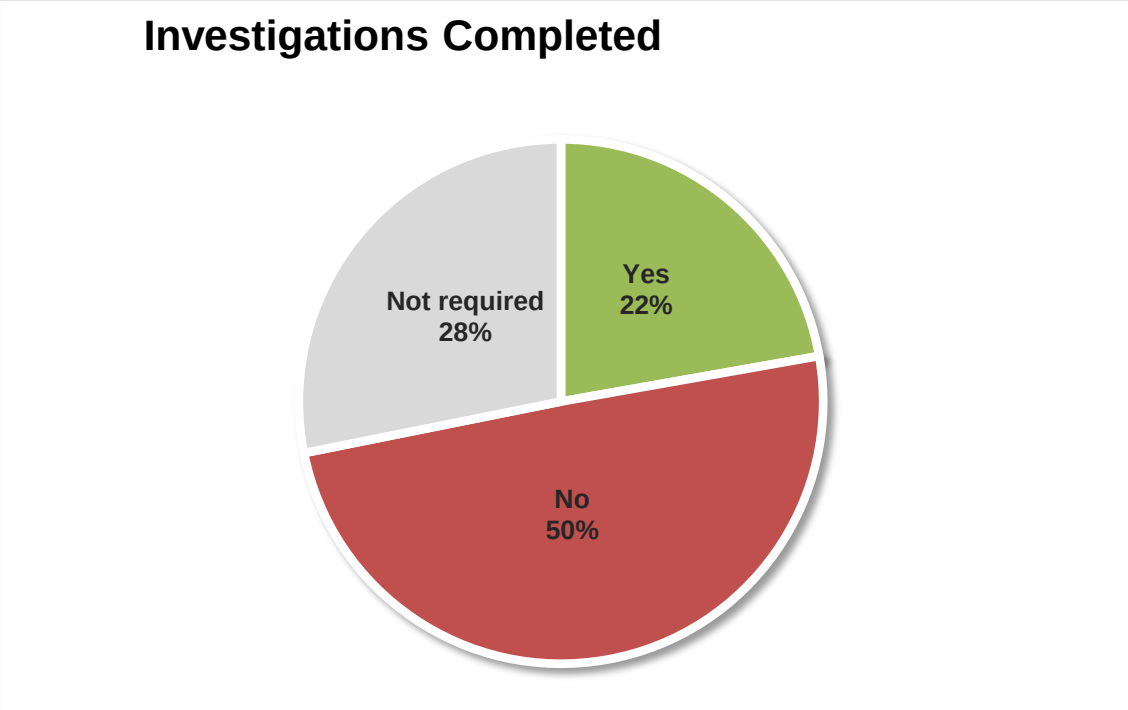
Investigations completed

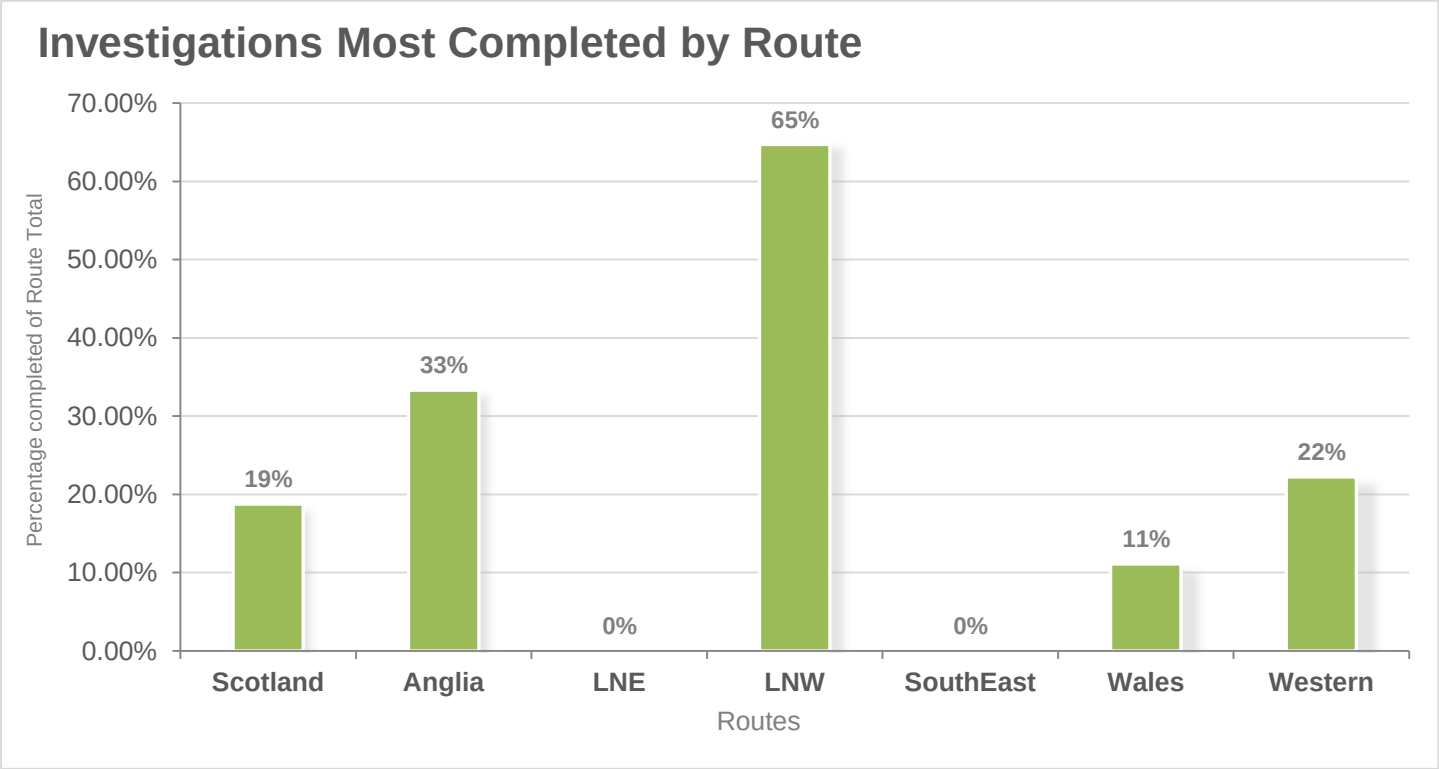


Level 1 investigations are required for all new and worsening diagnoses of HAVS. Those individuals with stable and pre-NR diagnoses, have been identified as “not requiring” an investigation.

Investigations completed – National



Investigations completed



Investigation findings

- Whilst the quality of the completed level 1 investigations was of a poor quality, some investigations cited that the root cause of diagnosis was “Inadequate controls to mitigate and prevent exposure to vibration”, and no further information was provided
- Further to this, the activity that led to ill health often linked the use of vibrating tools to the diagnosis, without looking at the ten incident factors within investigations. For example, names of tools that individuals used were listed, however length of use, whether exposure action values (EAV) or exposure limit values (ELV) were breached on a regular basis, control measures and other factors were not explored within the investigation
- Links between tools not presented for maintenance and number of diagnoses in Delivery Units were explored, but none were found.

Organisation Summary Findings

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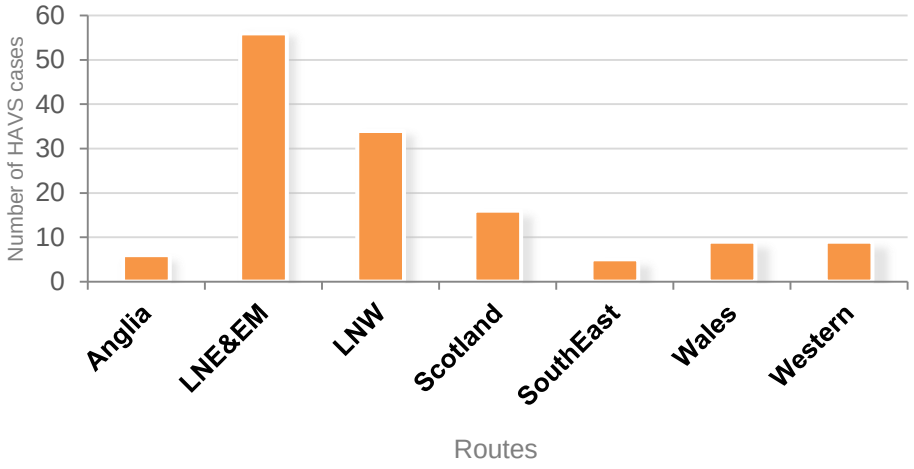
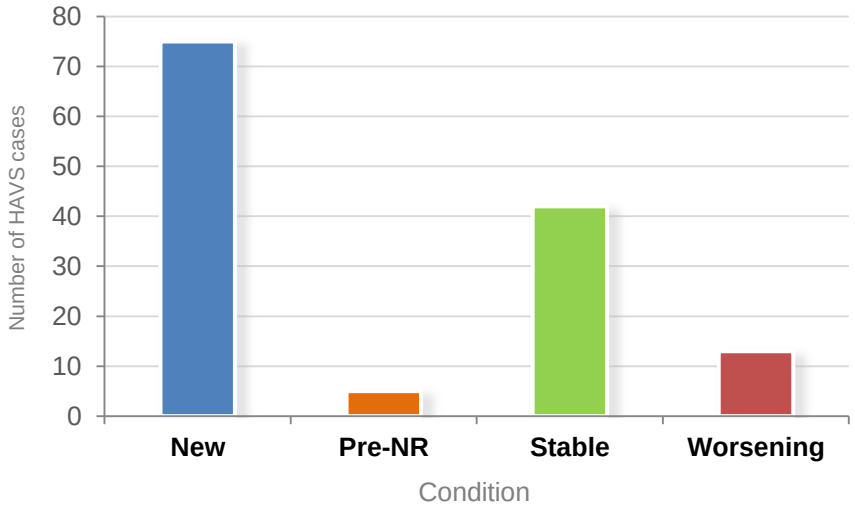
HAVS diagnosis by Type and Route

Total number of HAVS Cases by Route

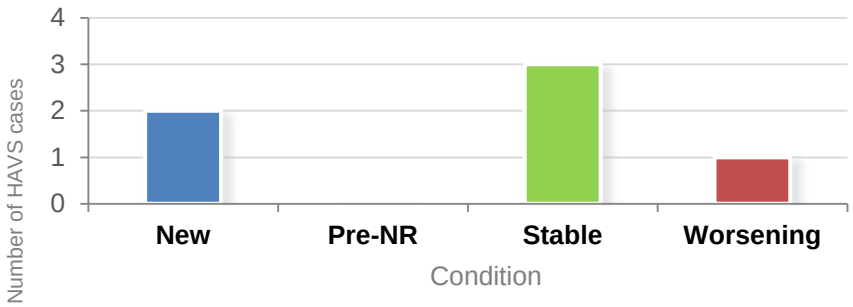


HAVS Diagnosis by Condition

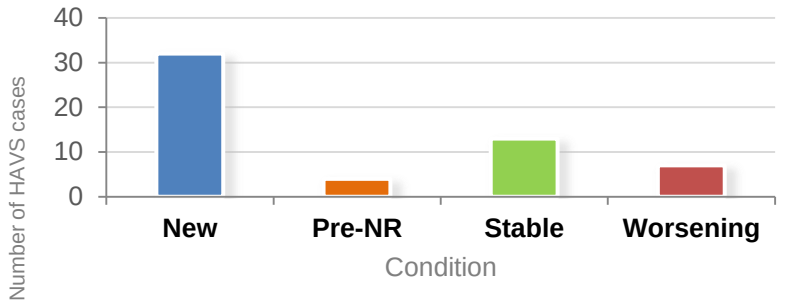


HAVS diagnosis by Type and Route

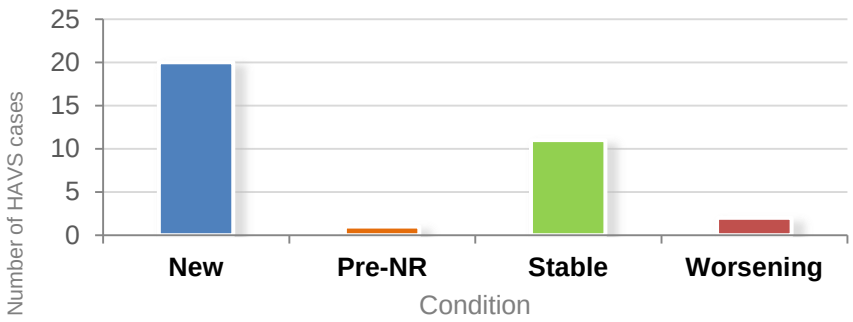
Anglia Route



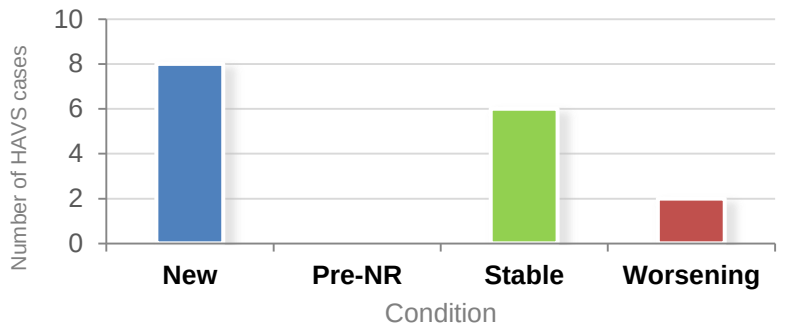
LNE&EM Route



LNW Route

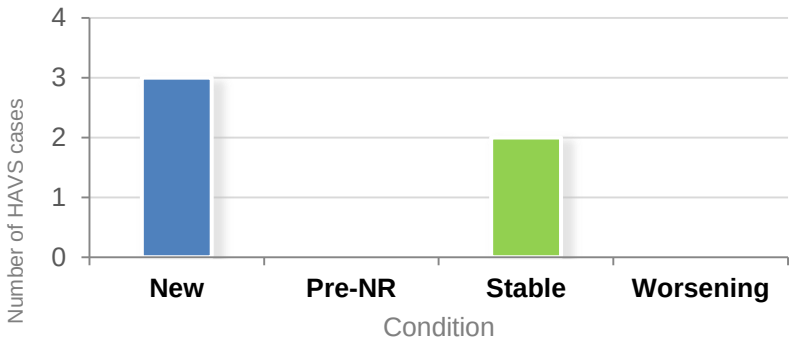


Scotland Route

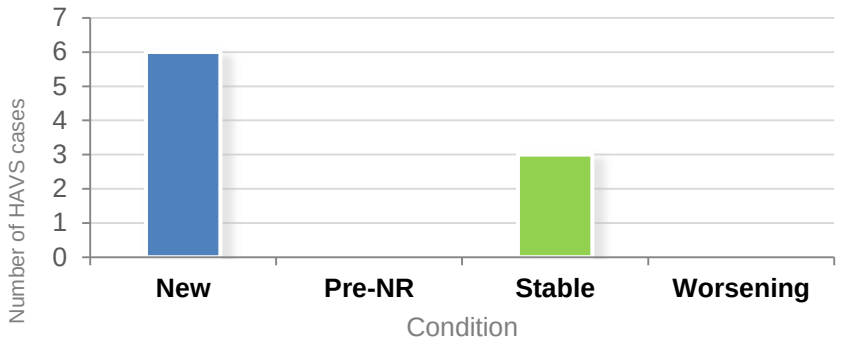


HAVS diagnosis by Type and Route

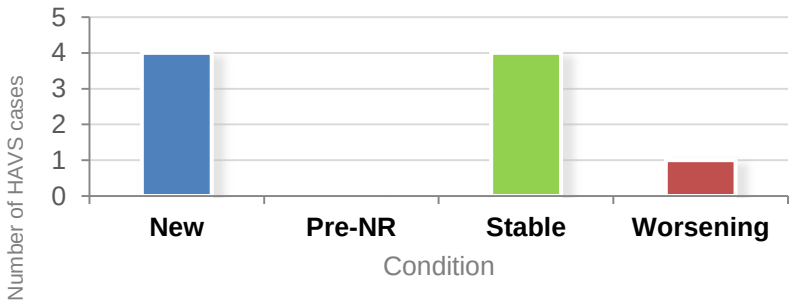
South East Route



Wales Route

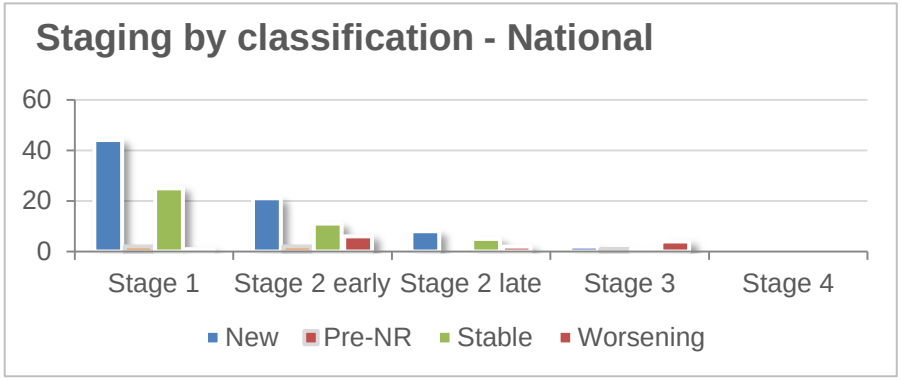


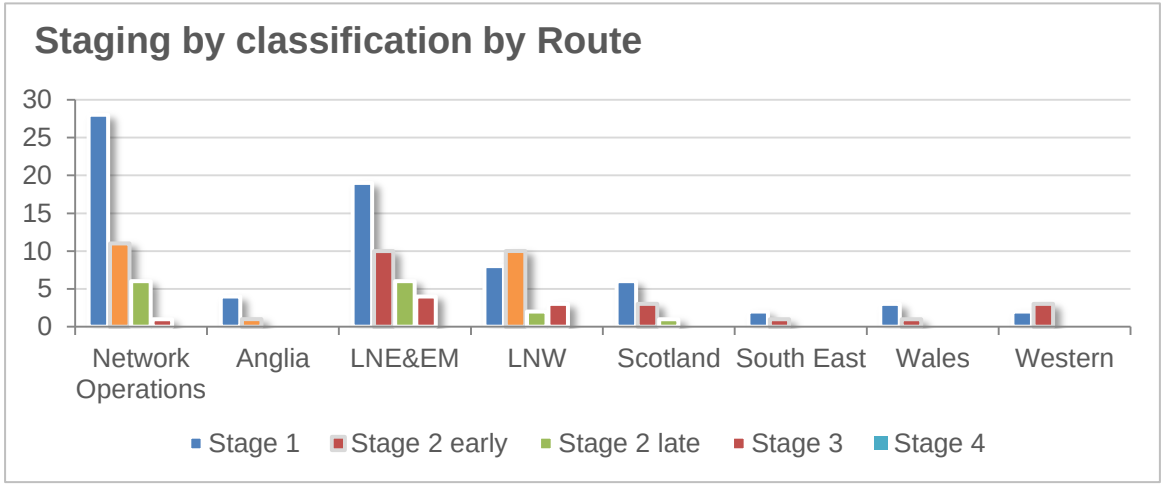
Western Route



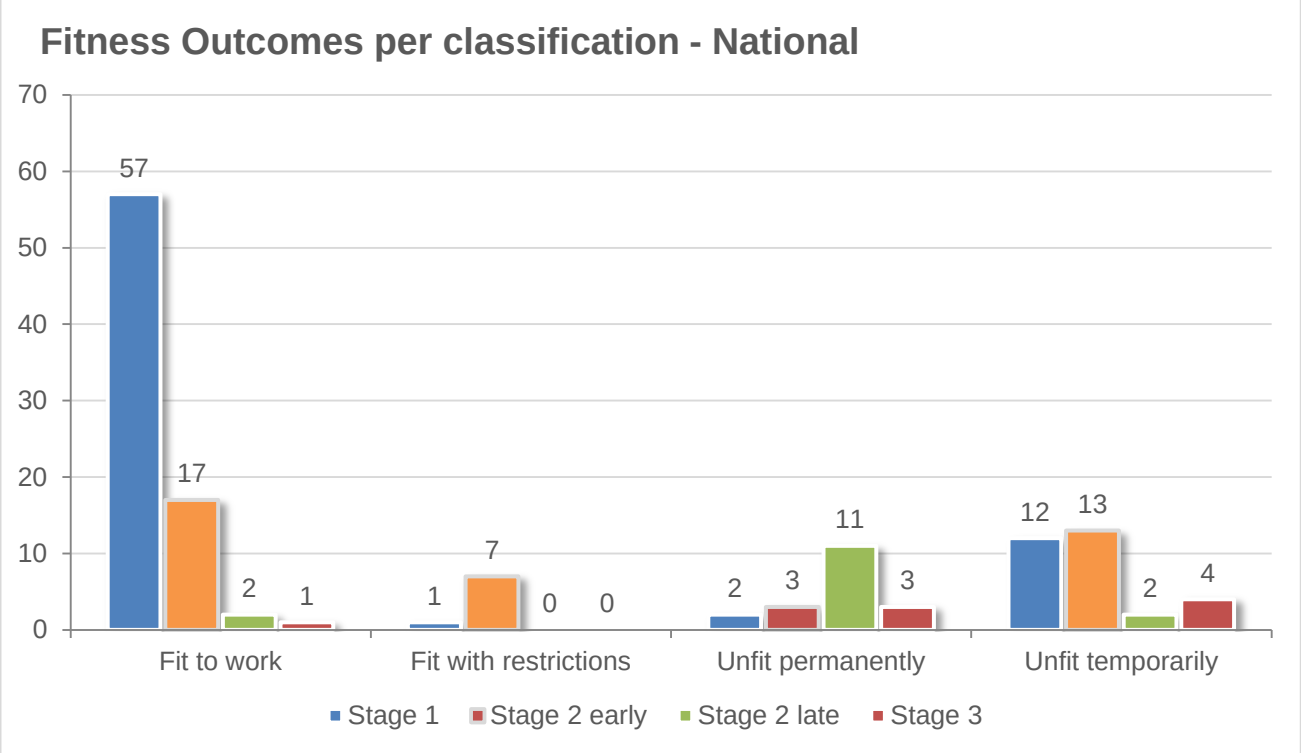
Please note that there were no diagnoses in Wessex Route for 2016/17.

Staging by classification





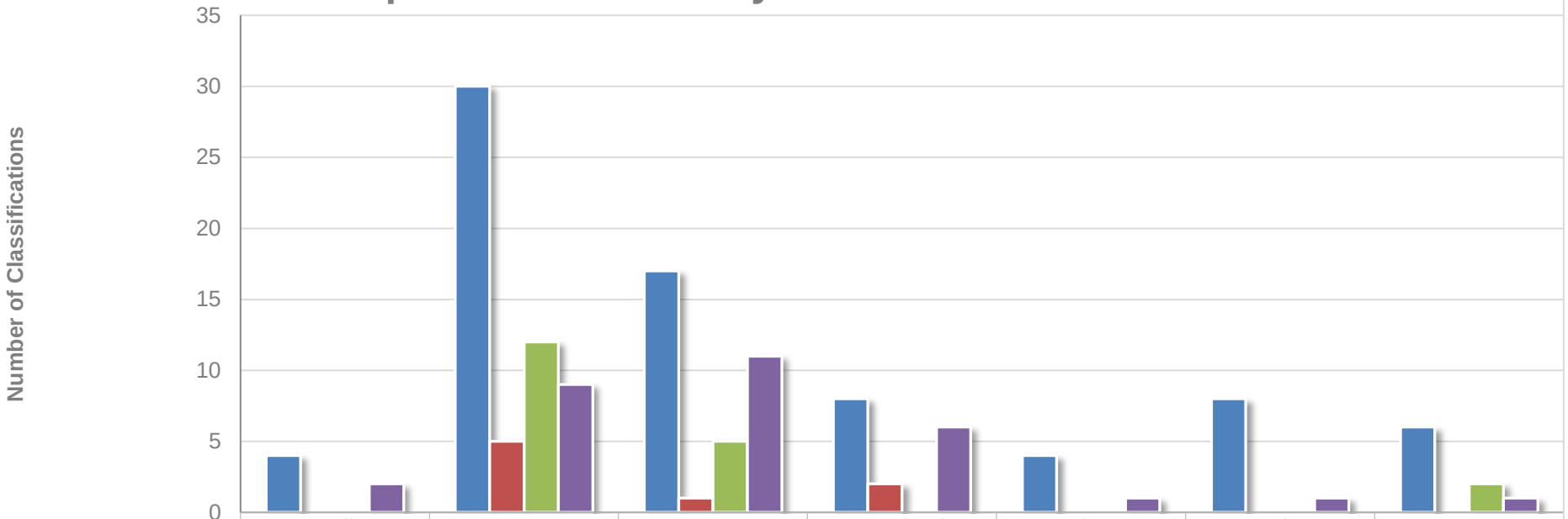
Fitness Outcomes



Fitness Outcomes

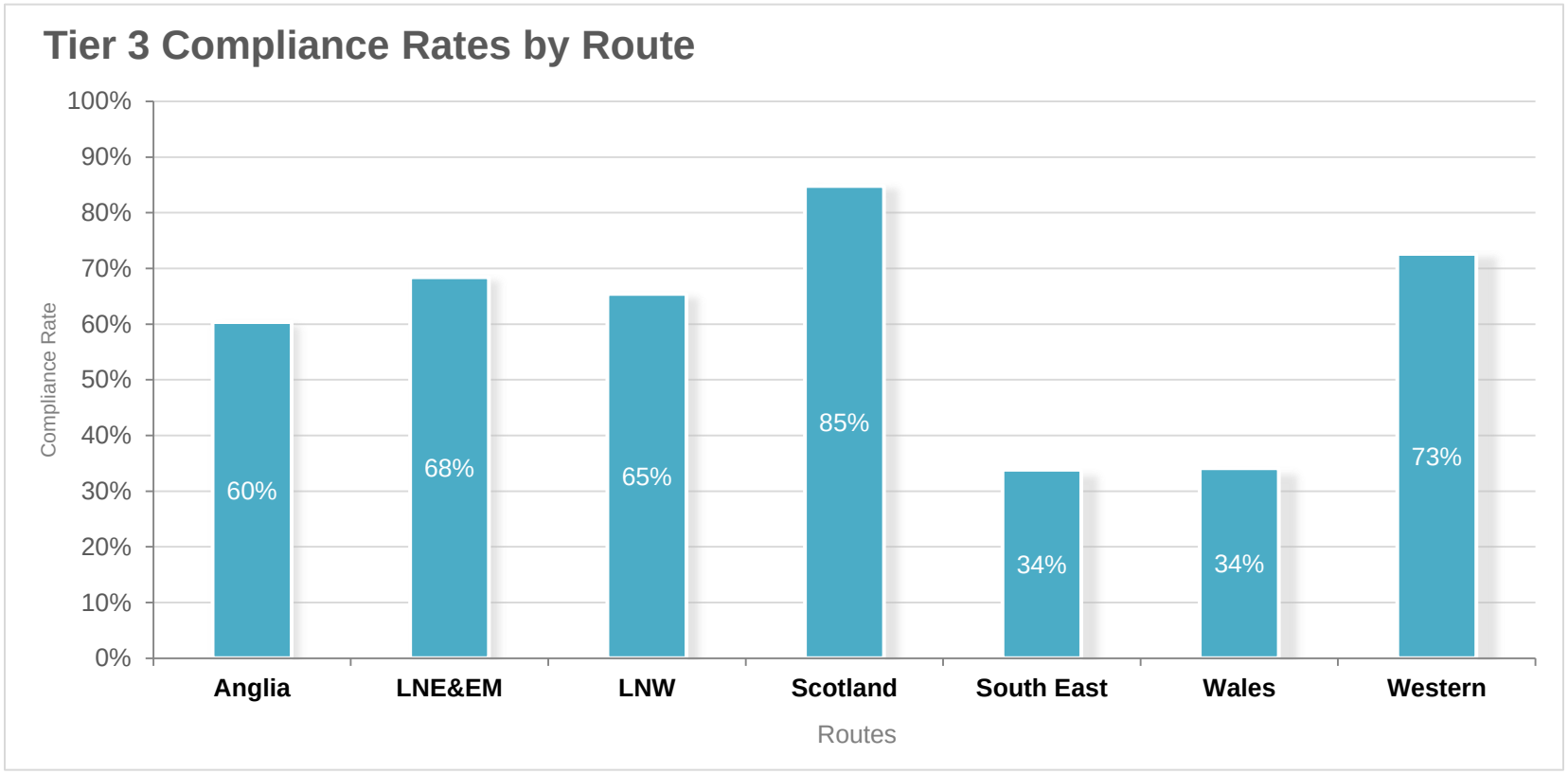
Fitness Outcomes per classification by Route

** Excludes Wessex Route*

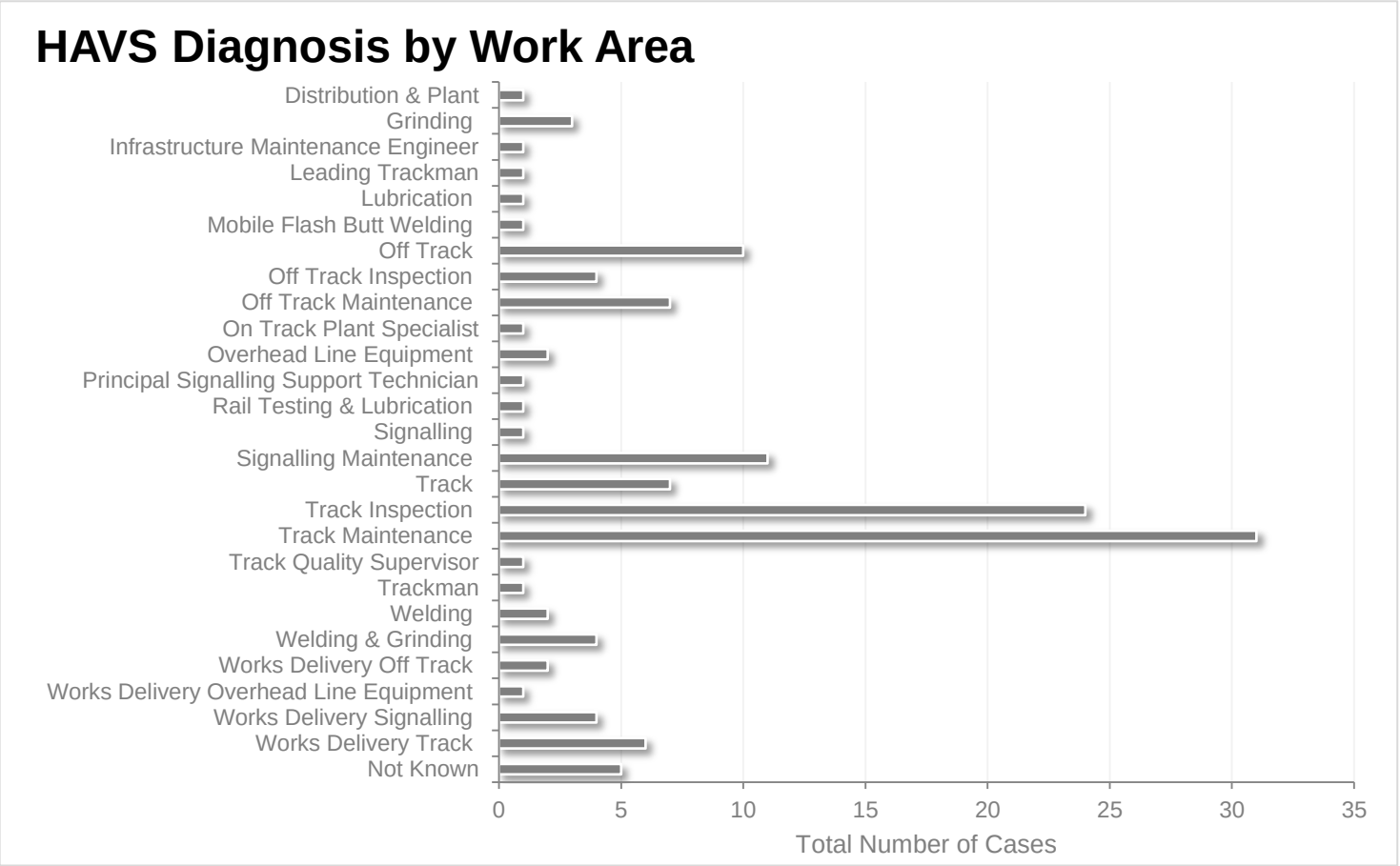


	Anglia	LNE&EM	LNW	Scotland	South East	Wales	Western
Fit to work	4	30	17	8	4	8	6
Fit with restrictions	0	5	1	2	0	0	0
Unfit permanently	0	12	5	0	0	0	2
Unfit temporarily	2	9	11	6	1	1	1

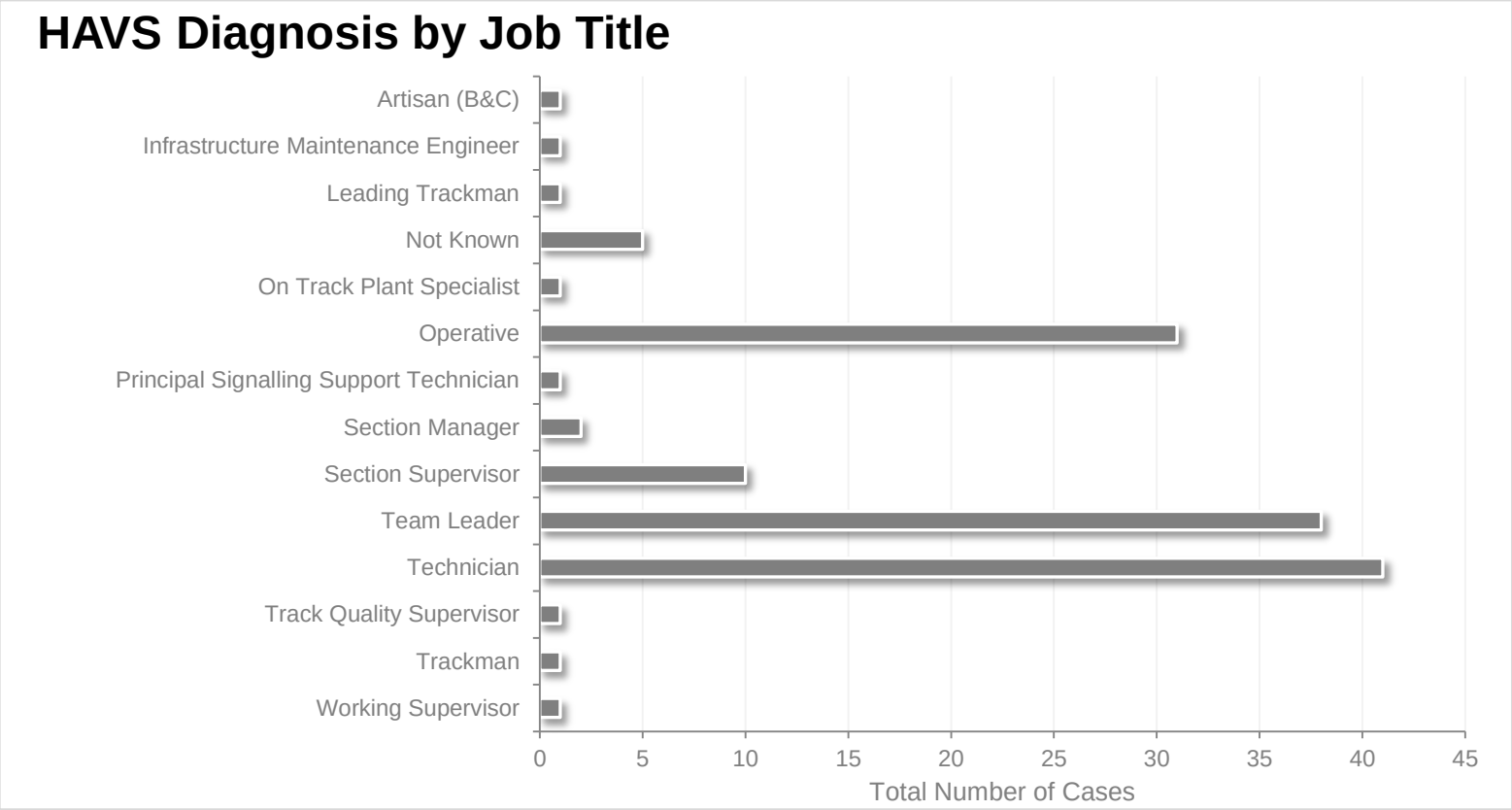
Compliance Rates



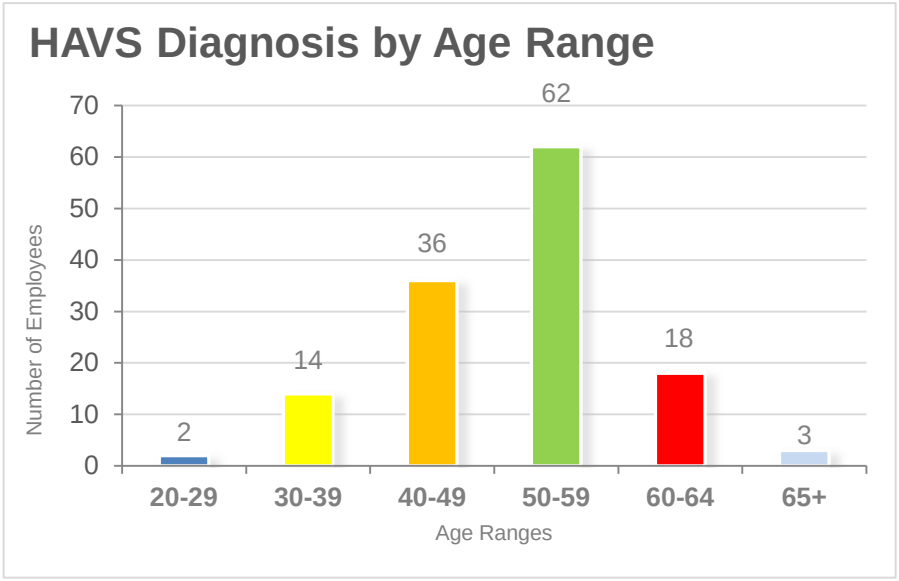
HAVS Diagnosis by Work Area

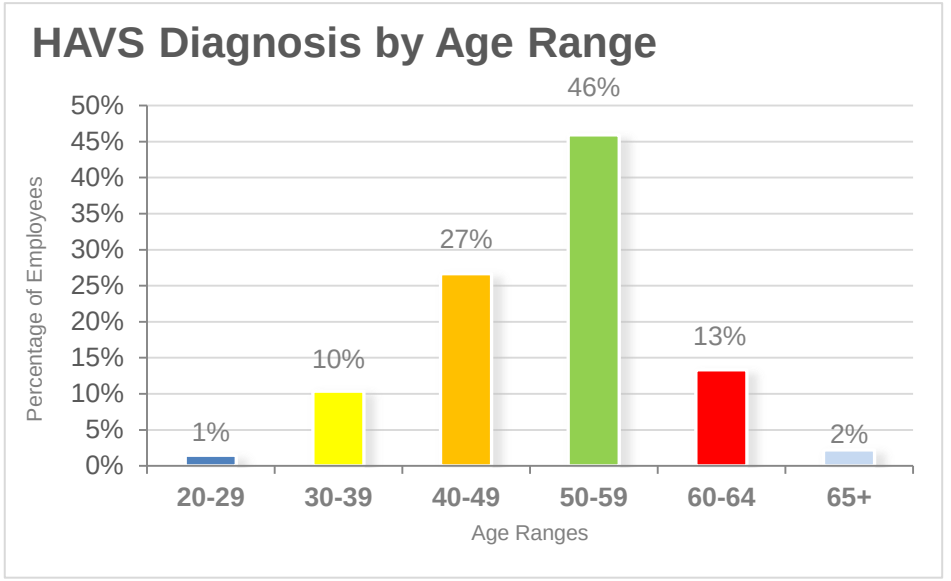


HAVS Diagnosis by Job Title

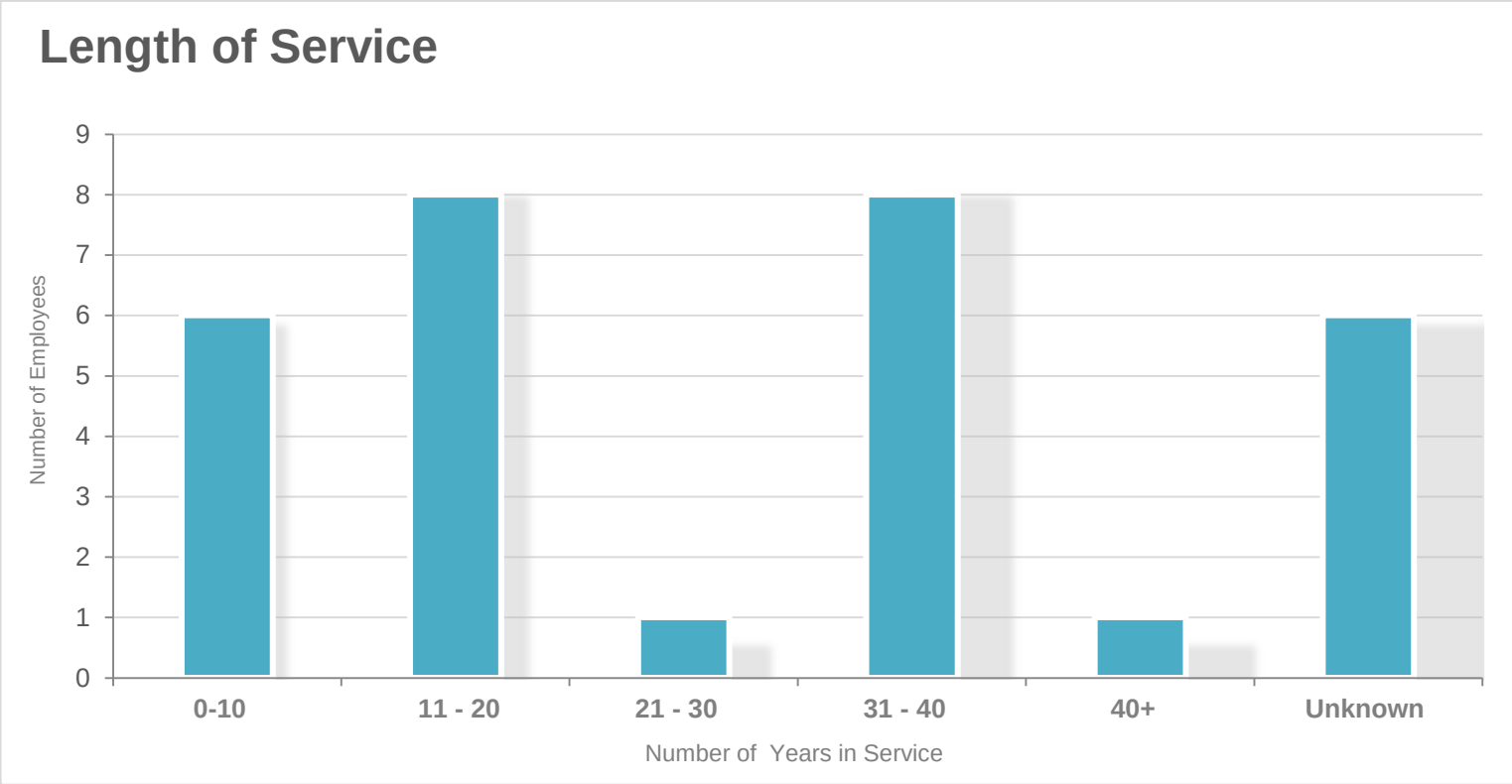


HAVS Diagnosis by Age Range





Length of service



Organisation findings

- LNE&EM and LNW Route presented the highest number of new HAVS diagnoses for the year, at 32 and 20 respectively. This is the majority of the 75 reported cases for the year
- Most new HAVS cases were classified as stage 1 or stage 2 early (65 of total cases)
- Four worsening cases were classed as stage 3, indicating that there was further harm to health to individuals who were previously diagnosed. These individuals would have more than likely been advised to stop using vibrating tools, which would have meant a potential redeployment into another role. This could have been prevented if HMAPs had been utilised at initial diagnosis
- At 85%, Scotland presented the highest compliance for the Tier 3 face-to-face assessments for the year, with 8 new and 2 worsening diagnoses
- Those involved in track maintenance activities presented the higher number of diagnoses, with 31 diagnosed cases
- Almost three quarters of all diagnosed cases were in the 40 to 59 age bracket, which can align to years of vibration exposure prior to diagnosis.

Delivery unit Findings

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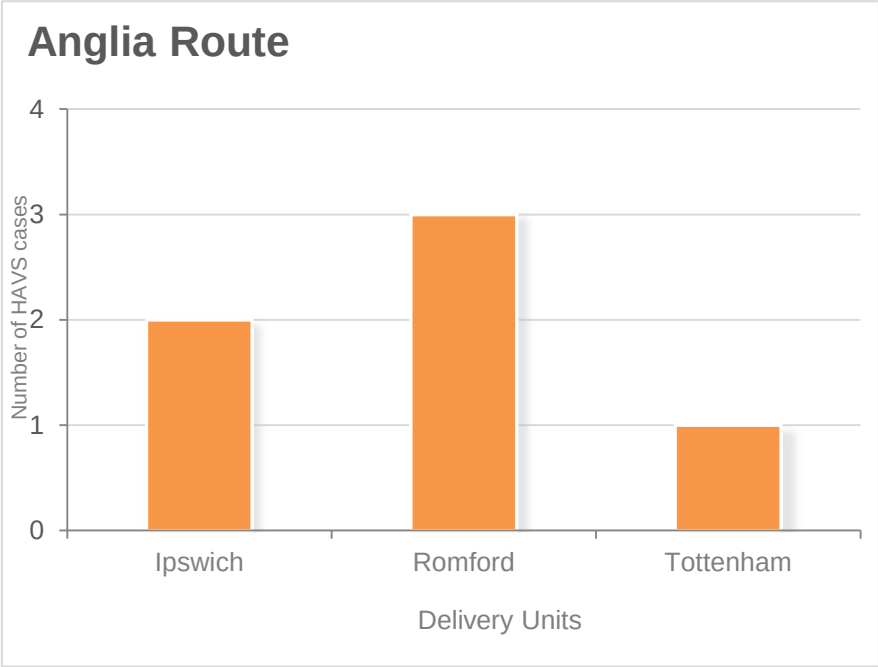
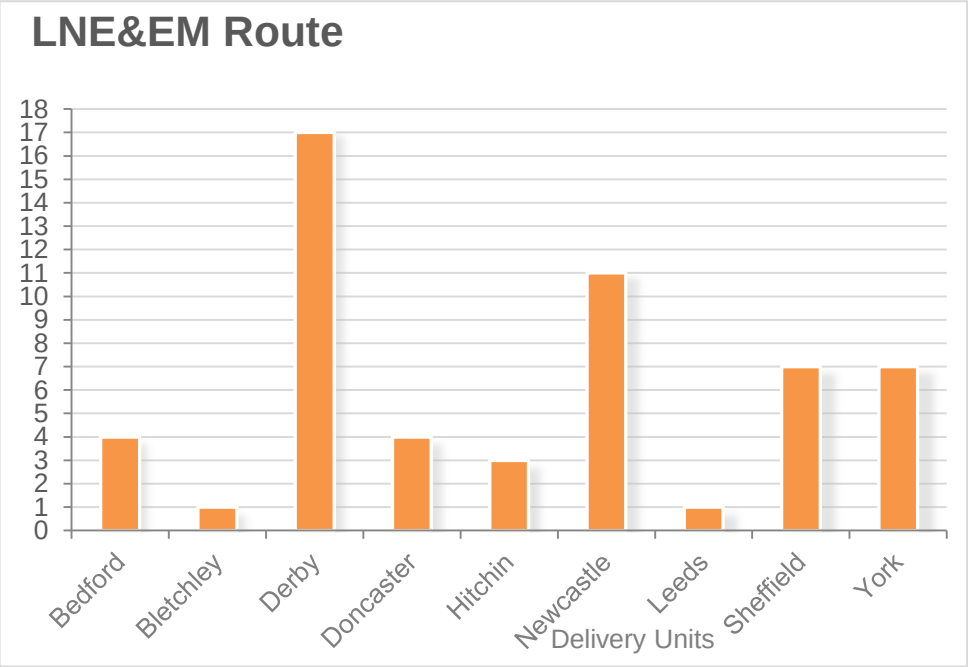
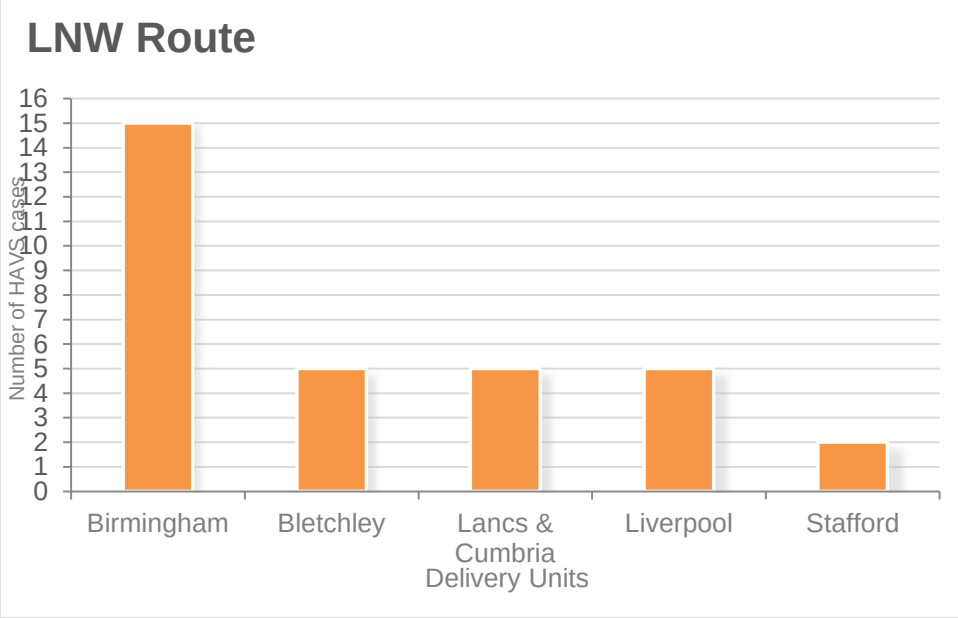
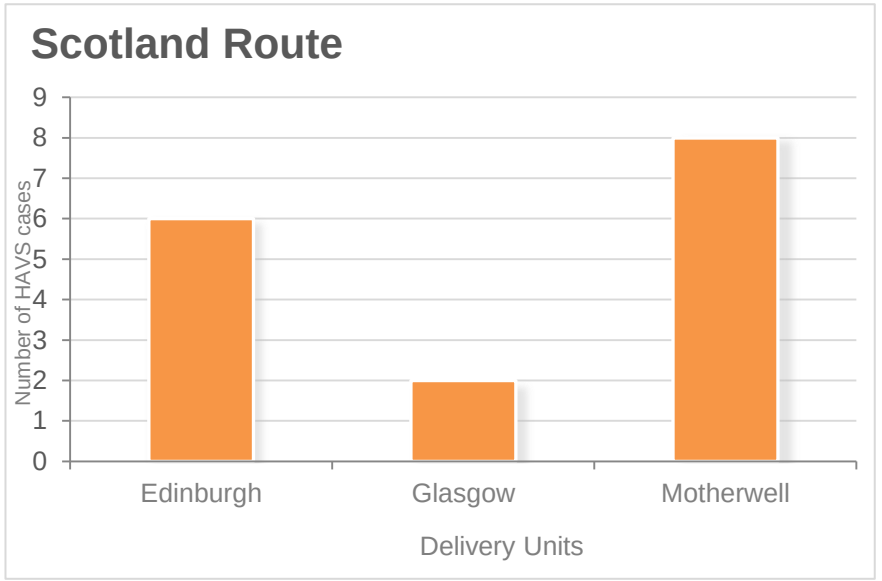
Total number of HAVS Cases



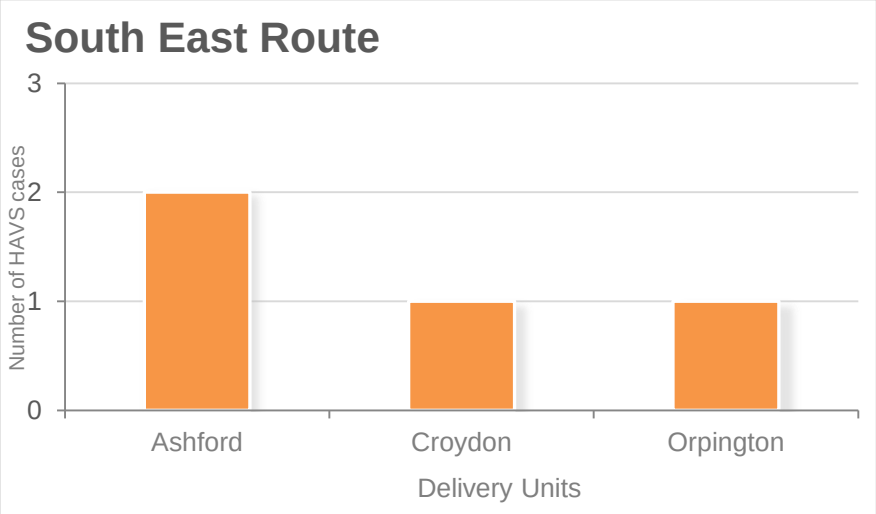


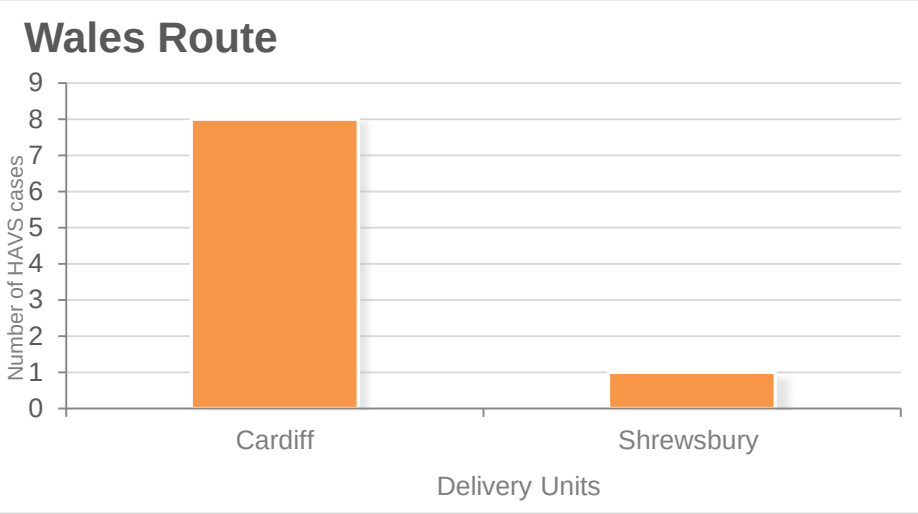
Total number of HAVS Cases



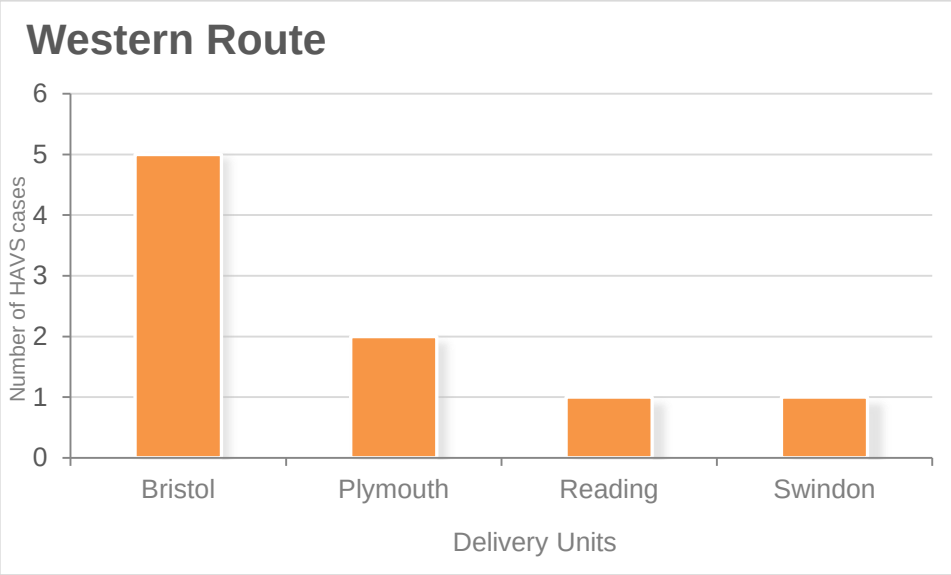


Total number of HAVS Cases





Total number of HAVS Cases



Please note that there were no diagnoses in Wessex Route for 2016/17.

Delivery unit findings

- In each Route, a delivery unit (DU) was able to be identified that had the highest number of diagnosed HAVS cases
- These were:
  - Anglia – Romford
  - LNE&EM – Derby
  - LNW – Birmingham
  - Scotland – Motherwell
  - South East – Ashford
  - Wales – Cardiff
  - Western – Bristol
- However, it should be noted that if 100% compliance rates had been achieved, that the above would be a fairer reflection of which DUs had the highest number of diagnosed cases.

Tool Maintenance Findings

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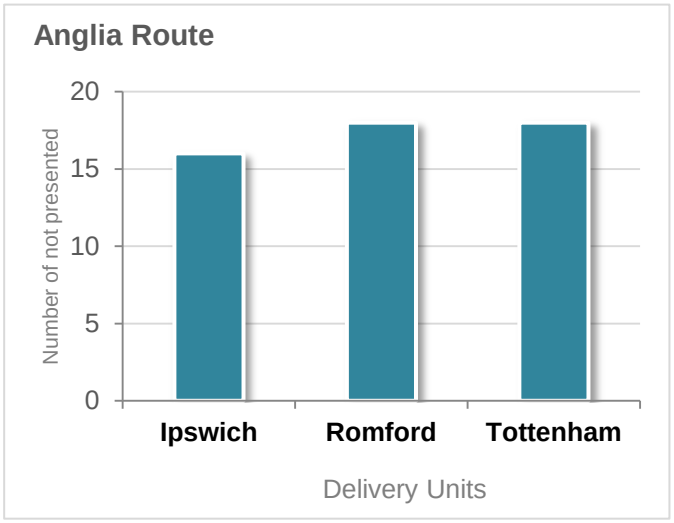
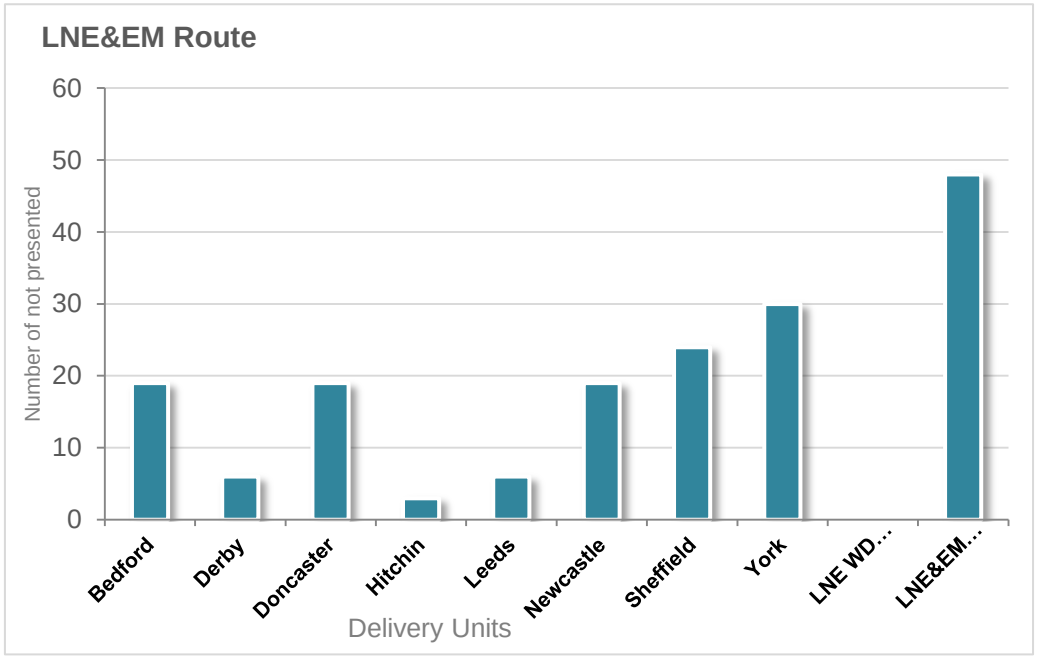
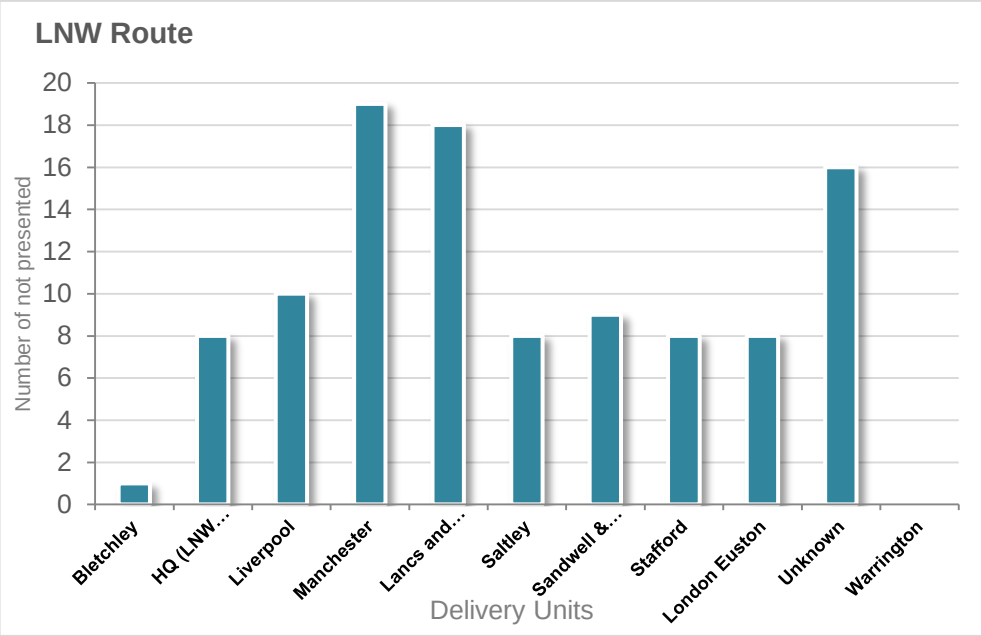
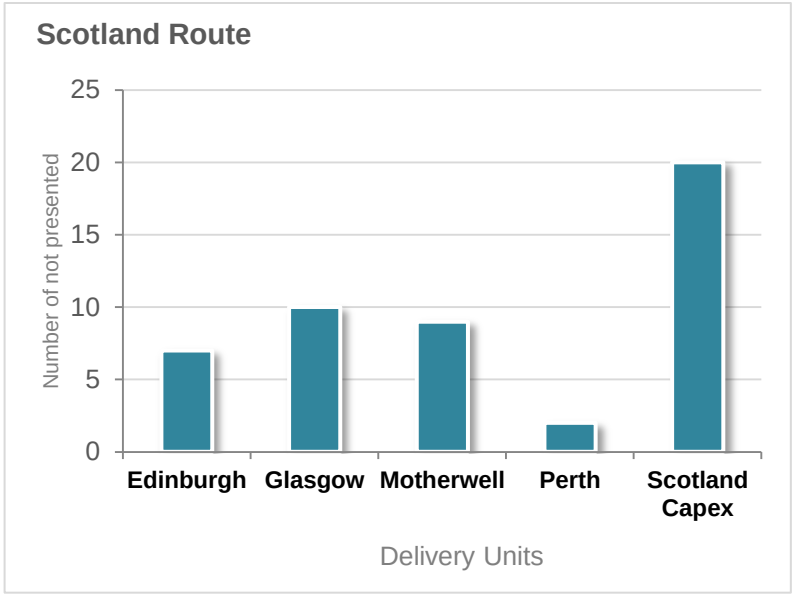
PPM non-presentation of equipment



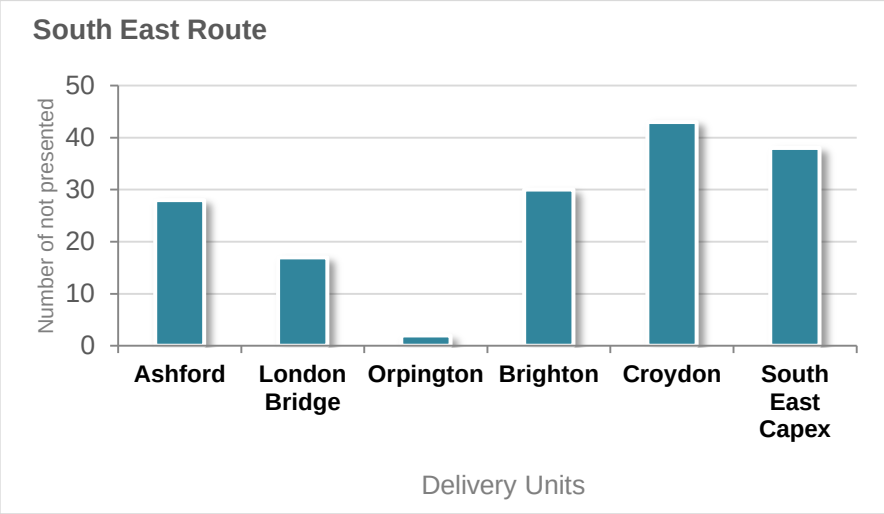


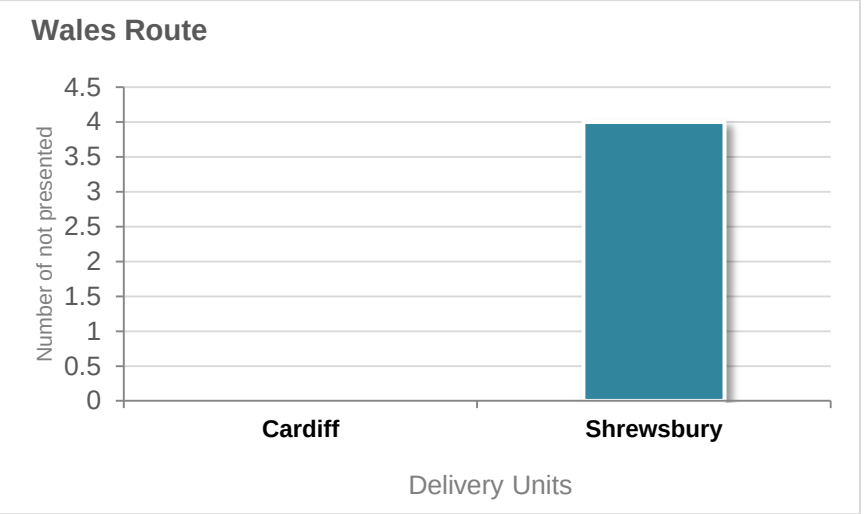
PPM non-presentation of equipment



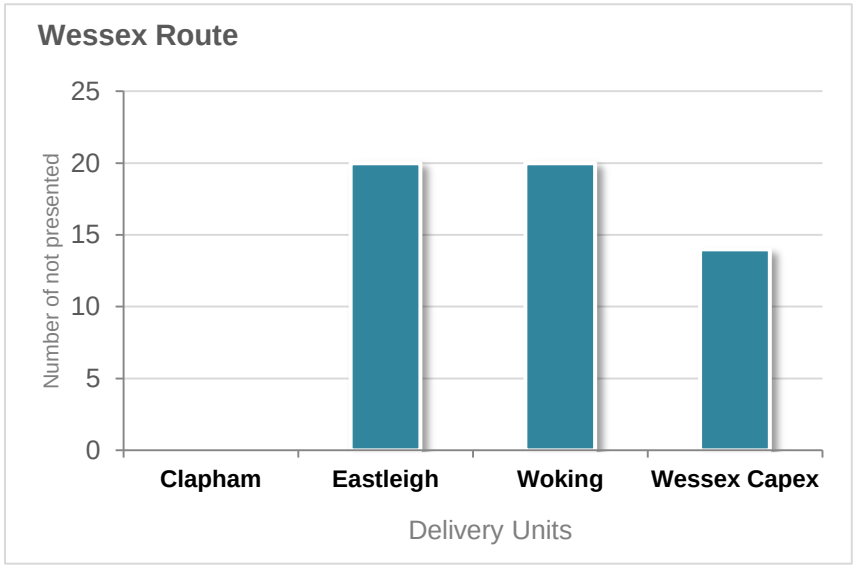


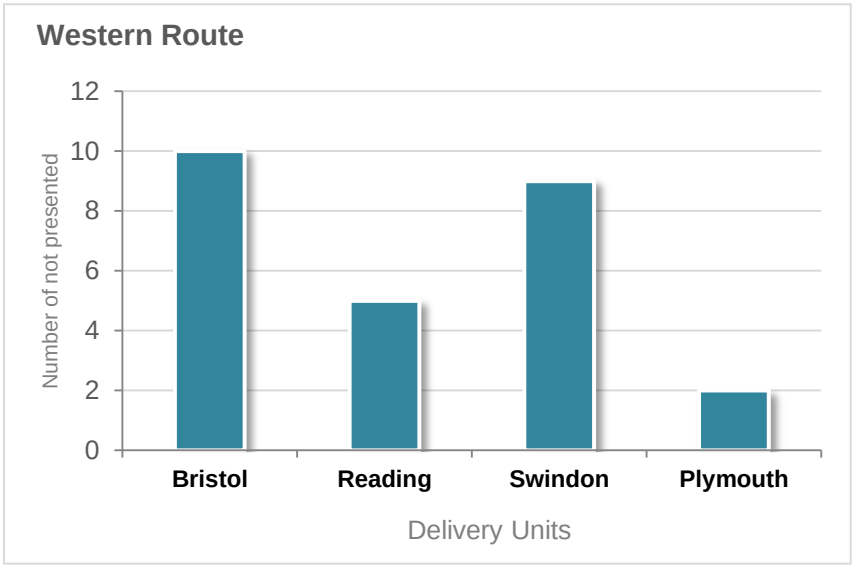
PPM non-presentation of equipment



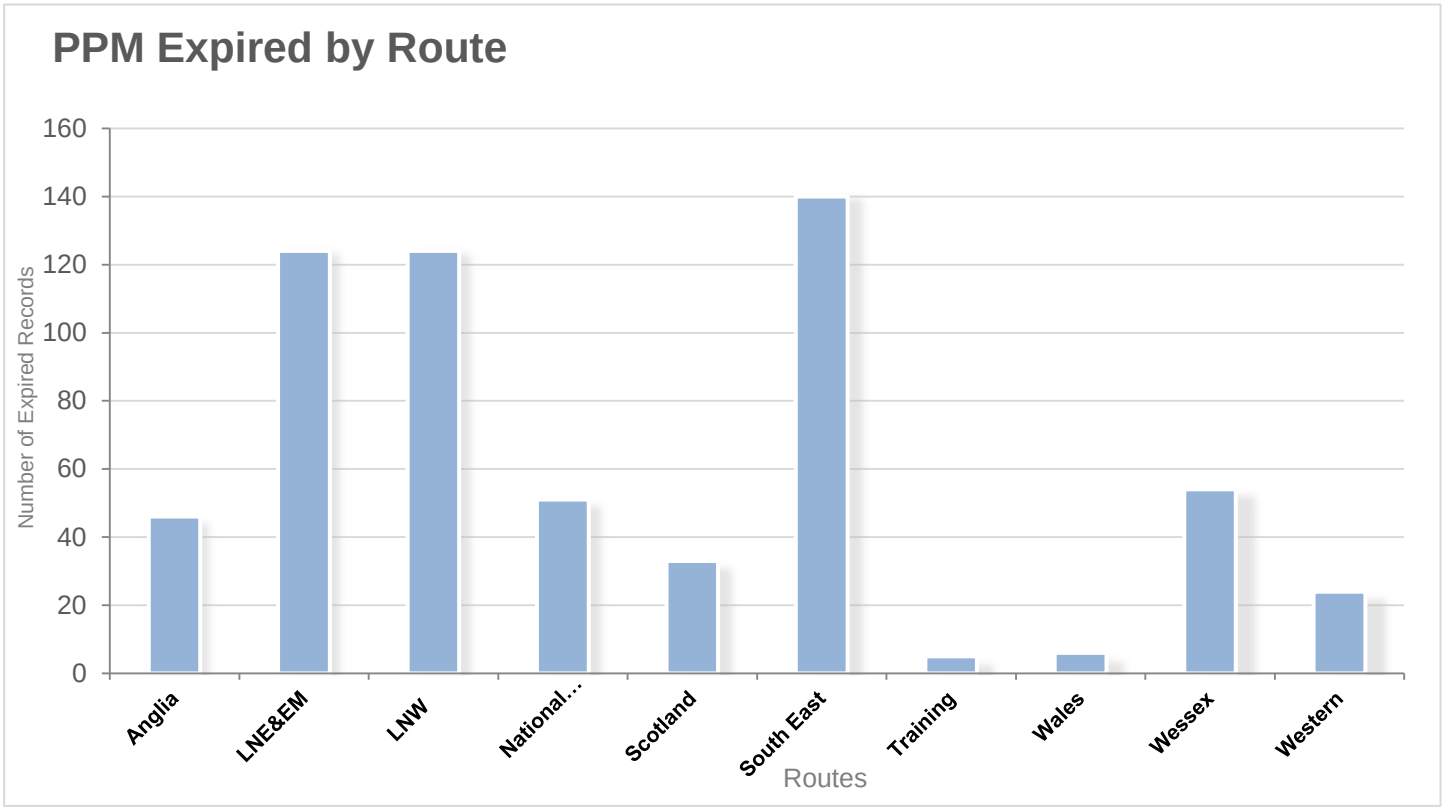


PPM non-presentation of equipment

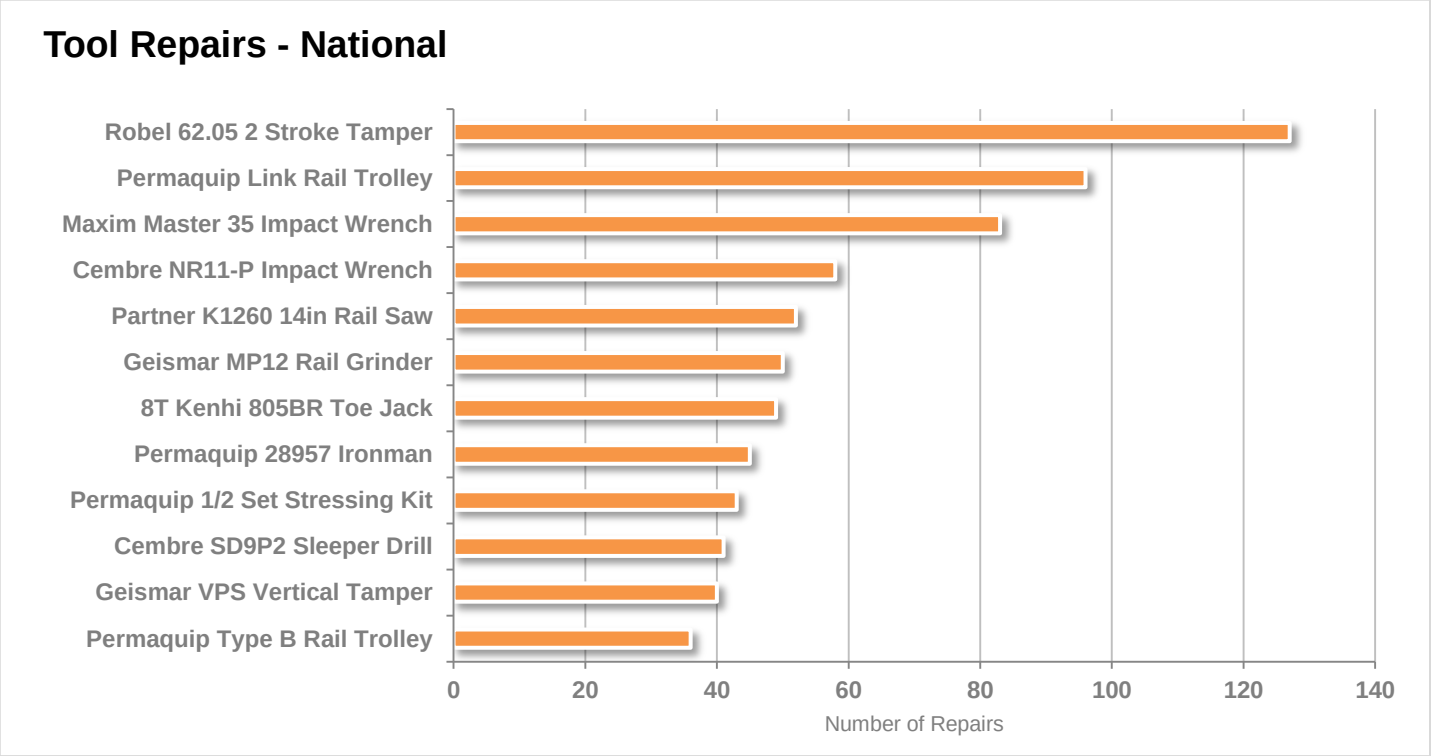




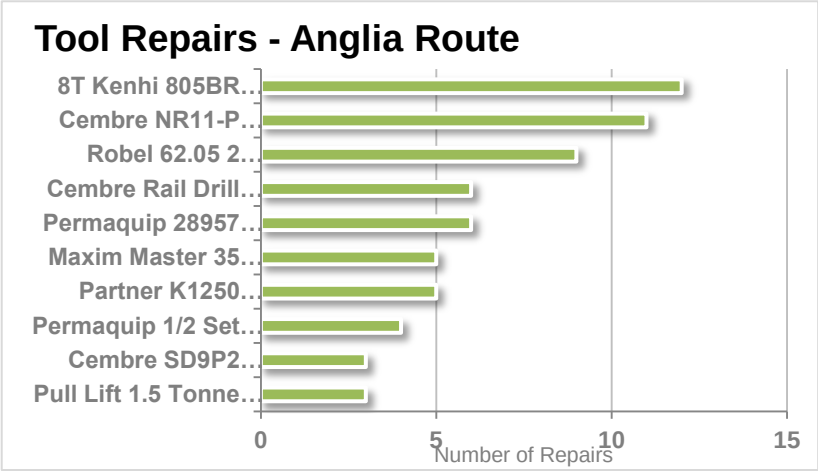
PPM expired by Route

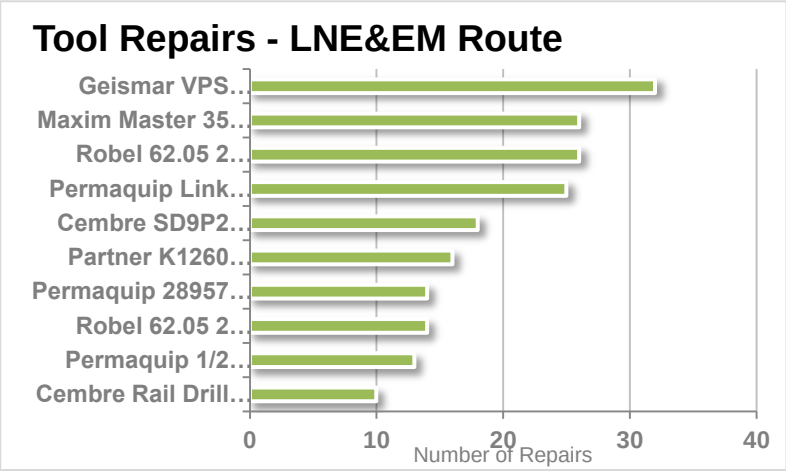


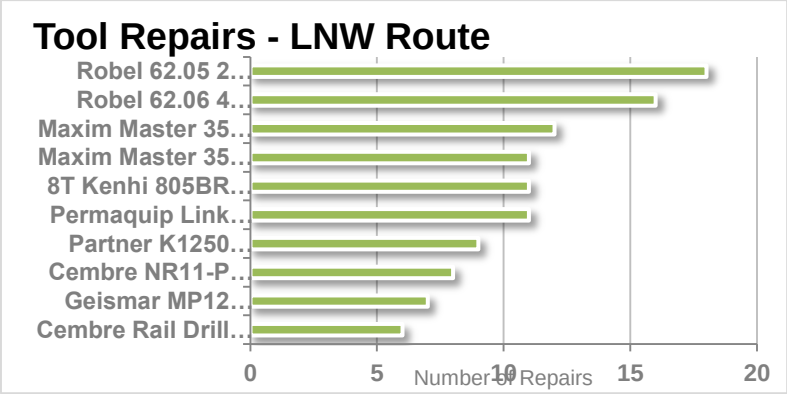
Tool repairs

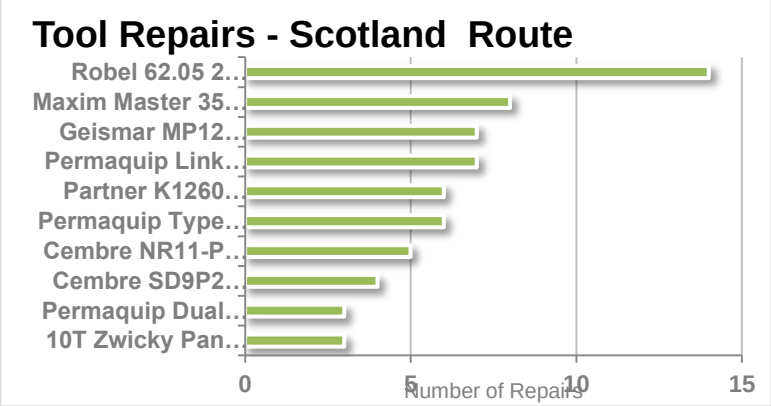


Tool repairs – top 10 per Route









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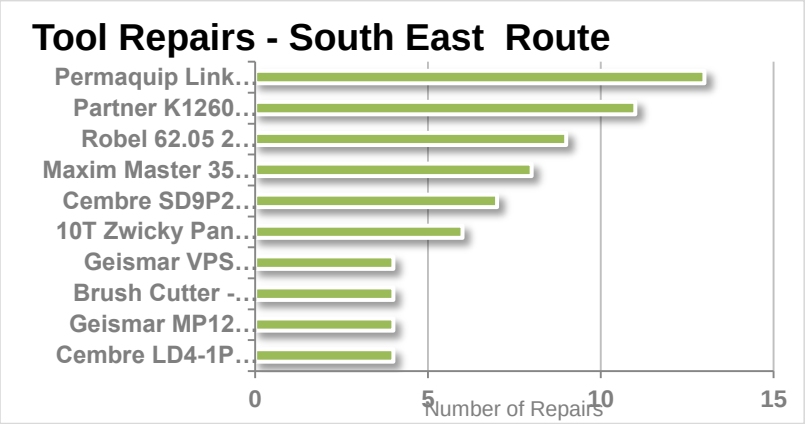
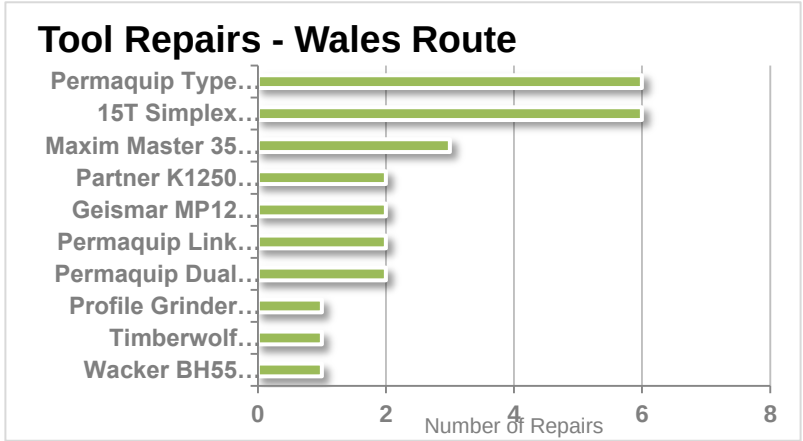
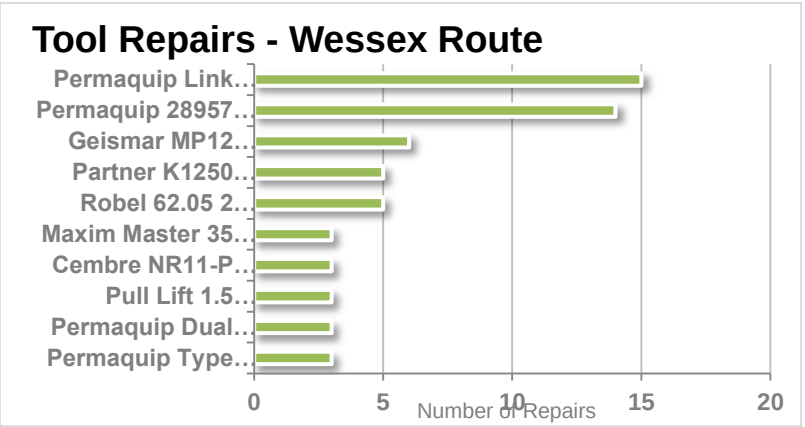
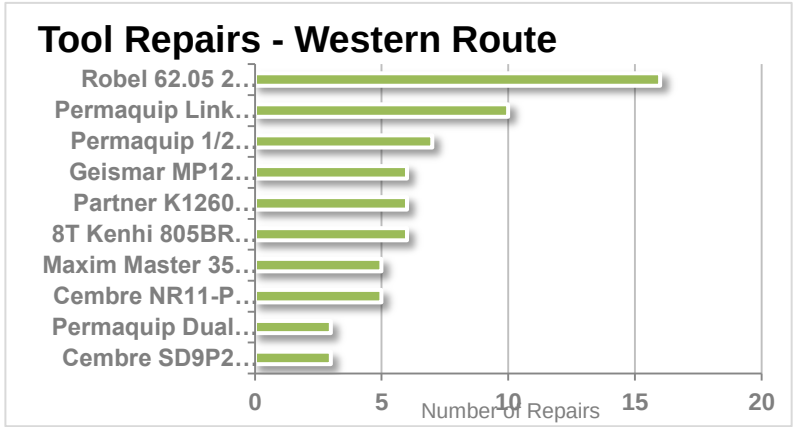
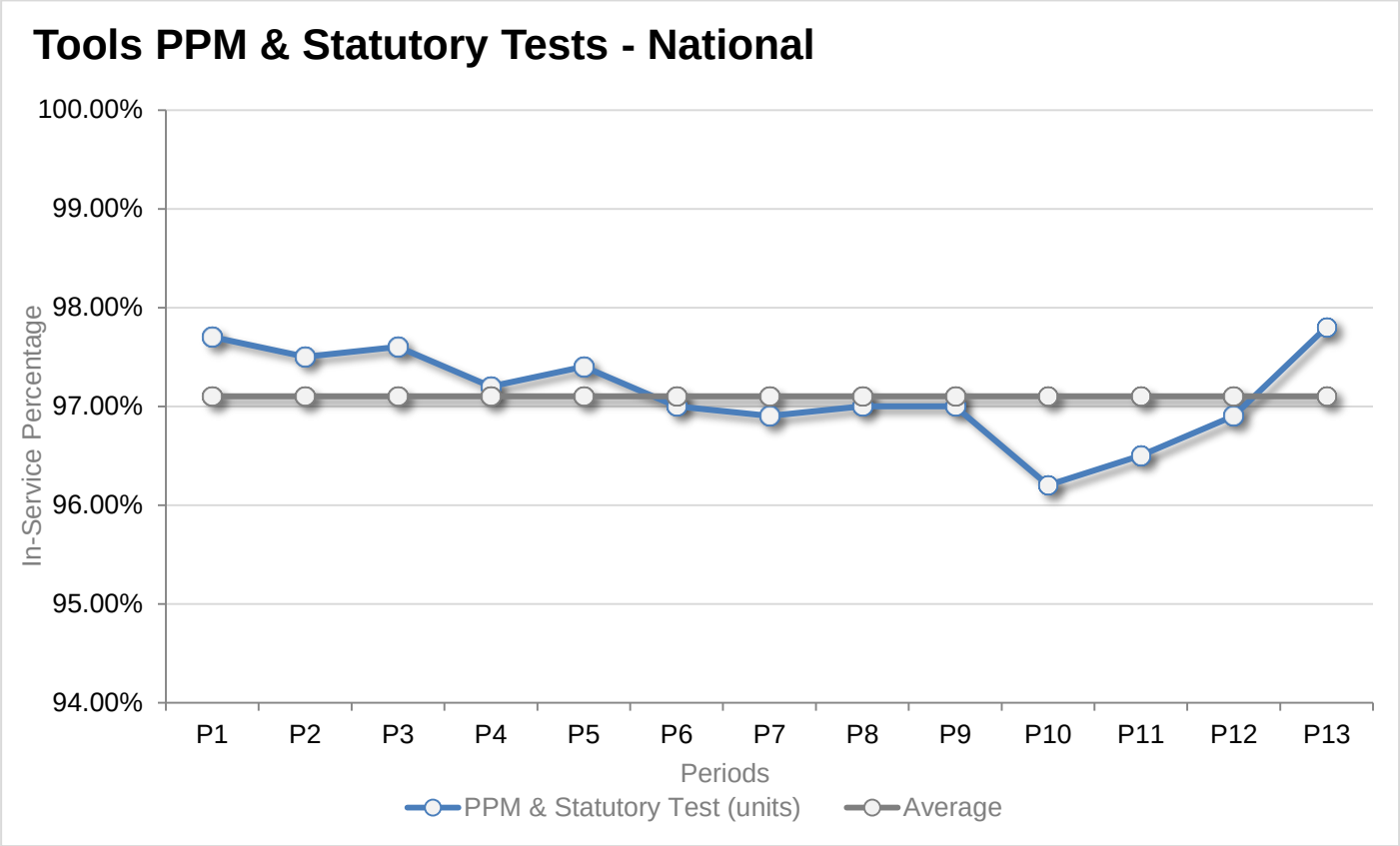




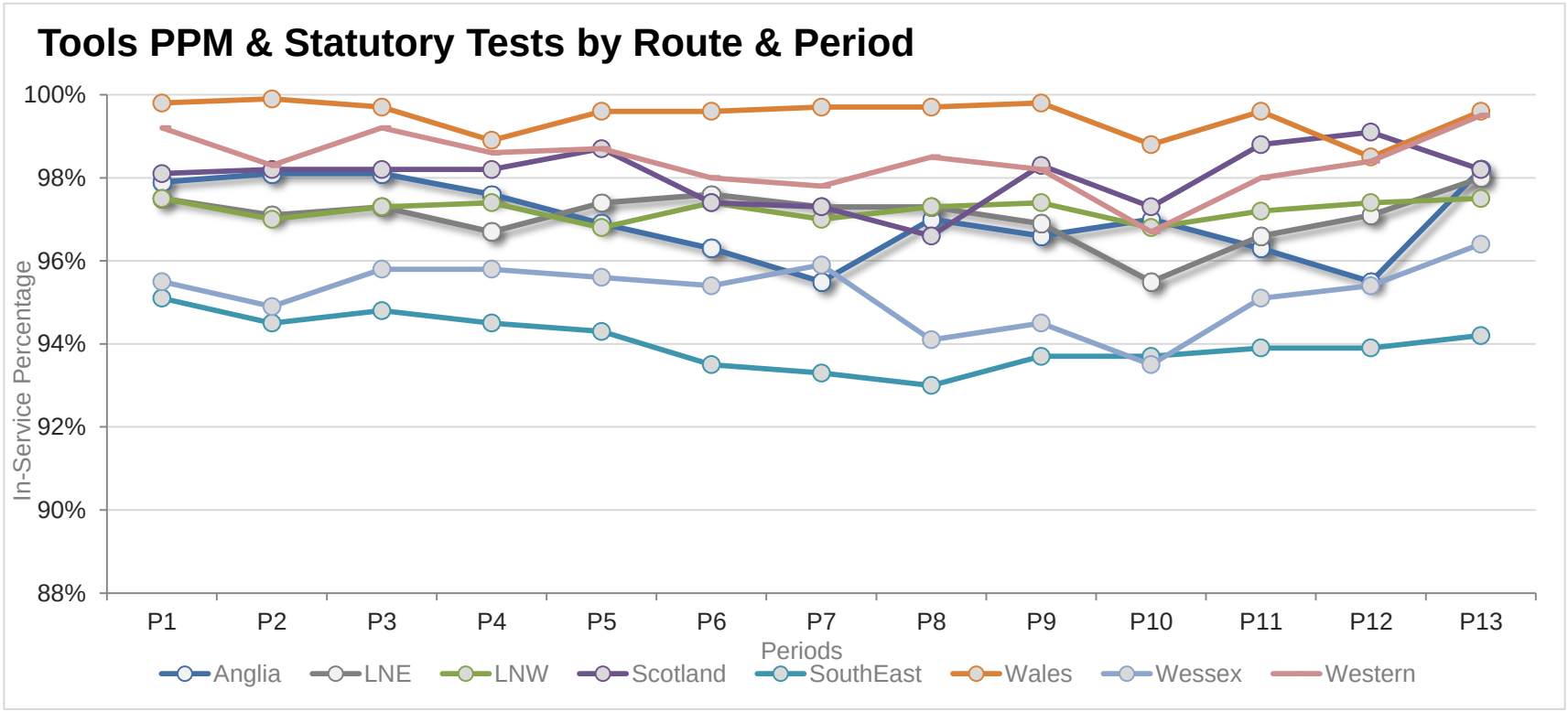




Tools PPM – National



Tools PPM - Routes



Tool maintenance findings

- LNE&EM, LNW and South East Routes had the highest numbers of planned preventative maintenance (PPM) expired records
- The Robel 62.05 2 stroke tamper was the most presented tool for repair (127 total) and featured in the top 10 tools presented for repairs for all Routes, except Wales
- If the two impact wrenches (Maxim Master and Cembre) repairs were totalled, impact wrenches would have been the most presented tool for repair (141 total)
- The in-service percentage dipped below average in P10, which can be anticipated over the Christmas holiday season
- South East and Wessex Routes had the lowest in-service percentage of tools.

Conclusion

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What have we learnt?

Some areas to celebrate…

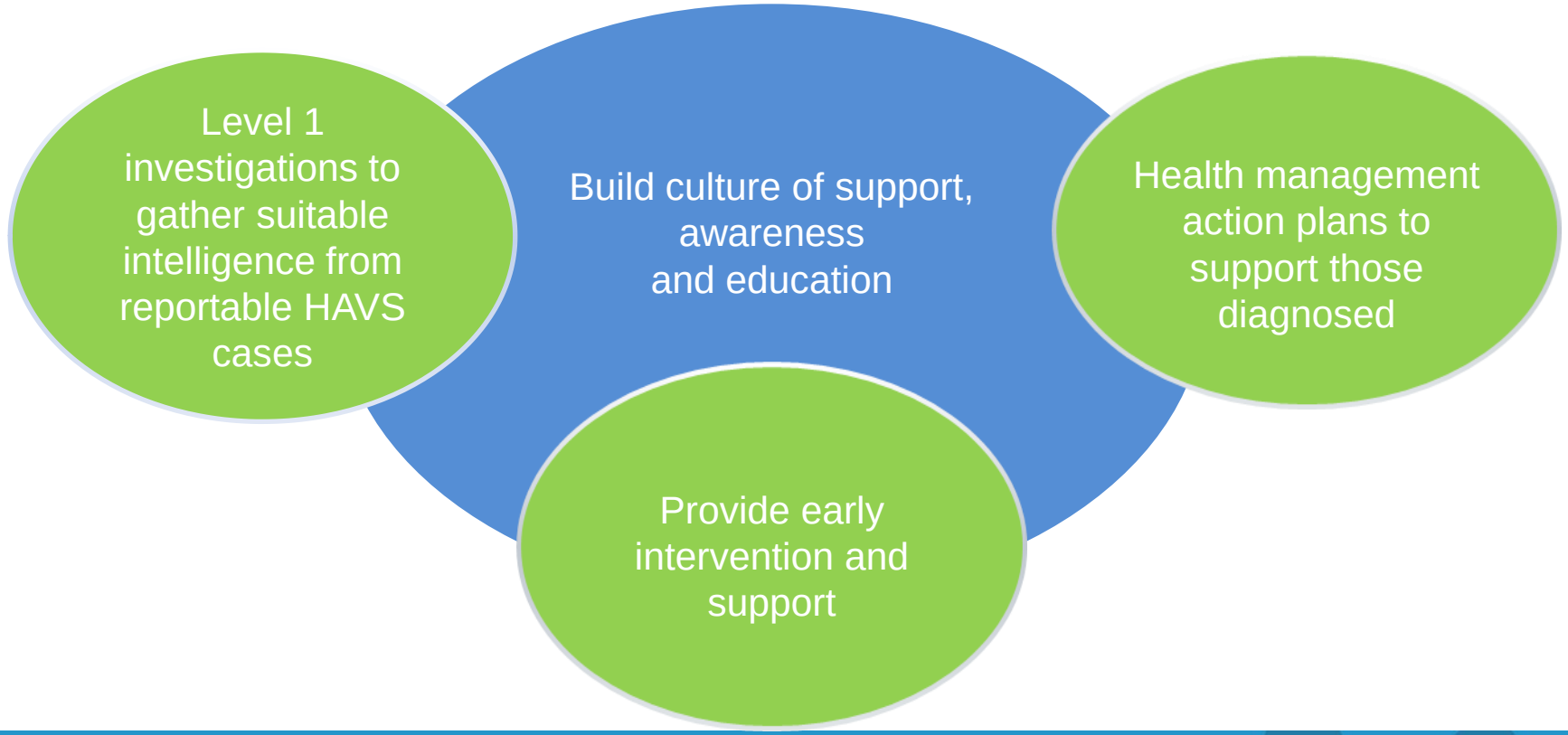
- LNW Route have good processes in place to support with the completion of level 1 investigations
- Basic management information is able to be collated from OH Assist to support with this deep dive
- Torrent Trackside are able to report on different tool metrics each period to the business and are able to consistently report on this.

What have we learnt?

Some areas to address…

- The quality of investigations into HAVS diagnoses needs to be improved, so that root causes are able to be better identified, so that further harm to health is reduced and the risk of exposure is ultimately eliminated
- TU representatives should to be included in the level 1 investigations. Often representatives were not included when investigations were carried out
- Education and information to employees needs to be improved – employees sometimes had signs and symptoms for years prior to these officially being reported to occupational health or their line managers
- Line manager education needs to be improved – they should be fully informed of the risk, as they are responsible for putting action plans in place when someone is diagnosed. Equally, they need to understand what control measures are required to try and prevent a diagnosis
- Engineering solutions on how the risk can be eliminated need to continue to be explored.

Strategic Approach to HAVS



Management Actions - National

Actions	Owner
Review if and how the ten incident factors can be embedded within the level 1 investigation form. This is included in the appendix of the HAVS health surveillance standard and support identifying root cause of the diagnosis.	OH&W team
To develop a process for how information is collated within investigations, to support improved analysis (by STE and Routes) for future cases	OH&W team
To liaise with engineering colleagues on the strategy for designing out and ultimately eliminating exposure to vibration	OH&W team

Management Actions - Routes

Actions	Owners
To ensure line managers are supported when conducting a level 1 investigation and that these are conducted in accordance to the standard (NR/L2/OHS/00113)	Routes
TU representatives to be invited to level 1 investigations	Routes
To ensure that all individuals exposed to vibration attend a mandatory briefing once a year and understand the importance of reporting signs and symptoms to their line managers	Routes
To ensure that all line managers understand their duties under the Control of Vibration at Work Regulations 2005	Routes


Safety, Technical and Engineering
Health & Safety
Finance
Engineering
Business Management
Environment & Sustainable Development
Risk, Analysis & Assurance