



How do we use pneumatic tube systems in the Nordic countries

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Modern pneumatic transportation systems are widely used in hospitals



PTS enables rapid blood sample transportation.



Samples can be affected during the PTS transportation



ISO 15189:2022 7.2.5 Sample transportation C) "The laboratory shall establish and periodically evaluate adequacy of sample transportation systems"



How is this taken care of in the Nordic laboratories?

Questionnaires in 2018 and 2023-2024

A questionnaire in 2018 and again in 2023-2024 by the Nordic preanalytical scientific working group:

1

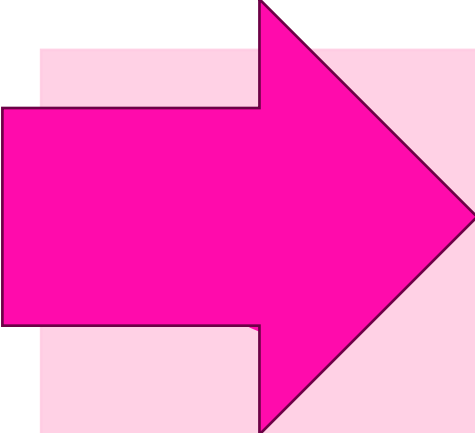
How widespread the use of pneumatic tube systems is in the Nordic countries

2

How pneumatic tube systems are validated

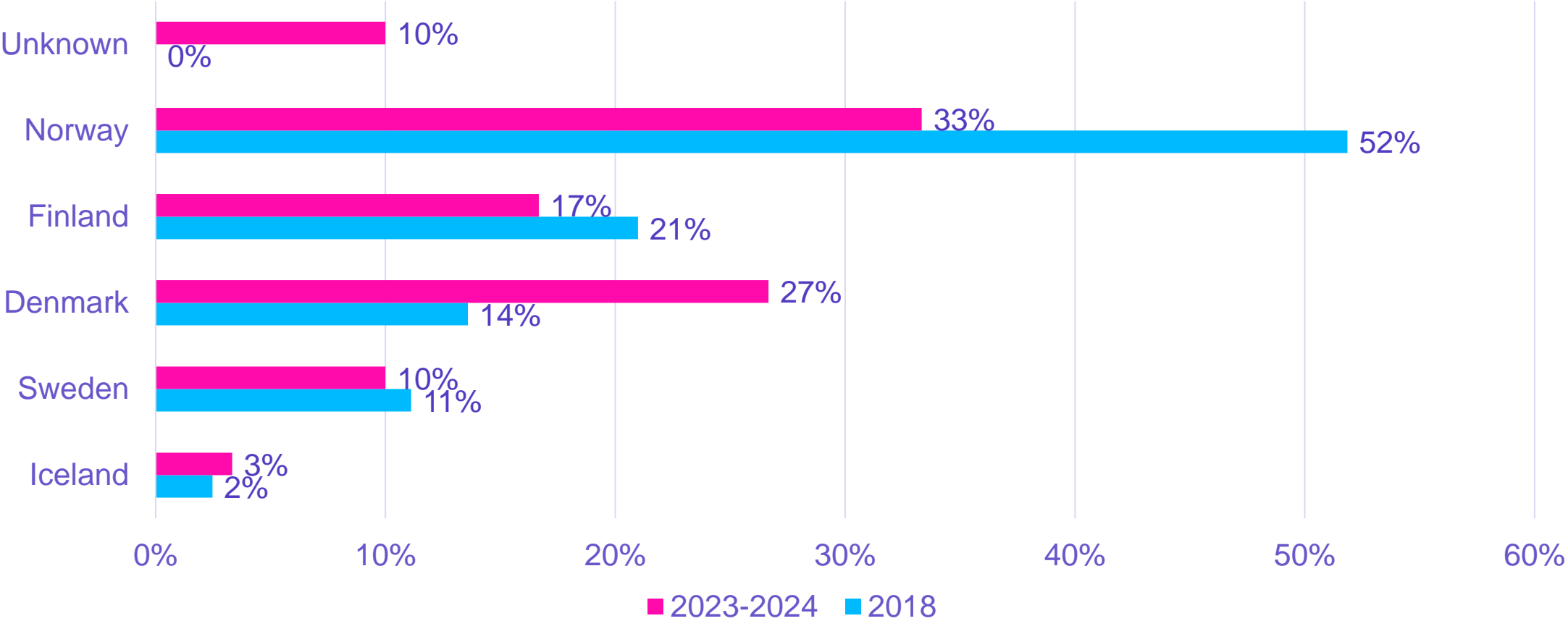
3

What kind of quality assurance is used for the PTSs



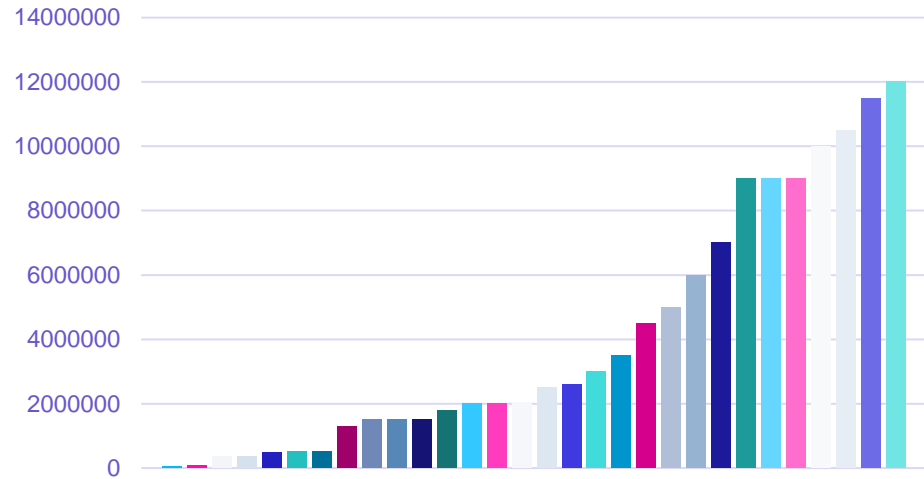
If the answers imply a need, the plan is to aim for a Nordic recommendation on the use of pneumatic tube systems.

Response distribution in 2018 and 2023-2024

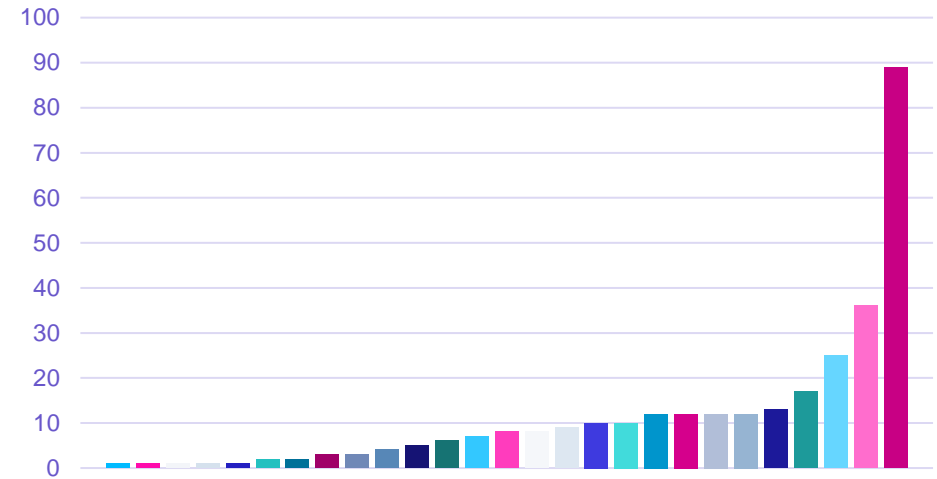


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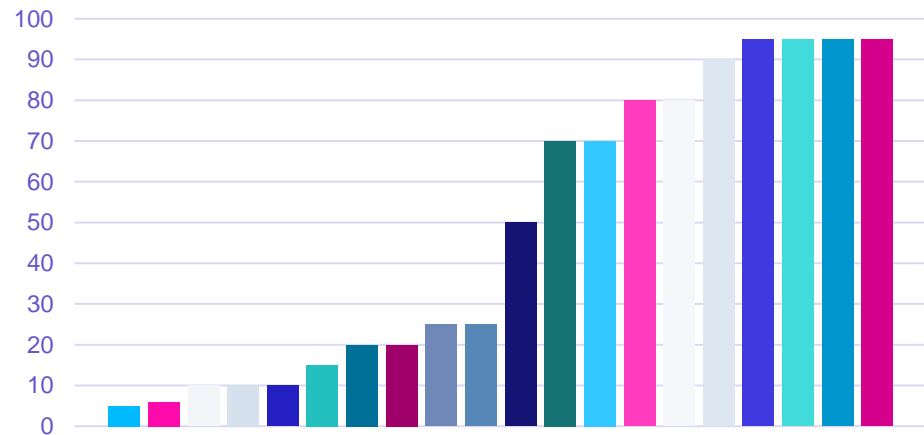
Samples per year (from 60 000 to 12 milj.)



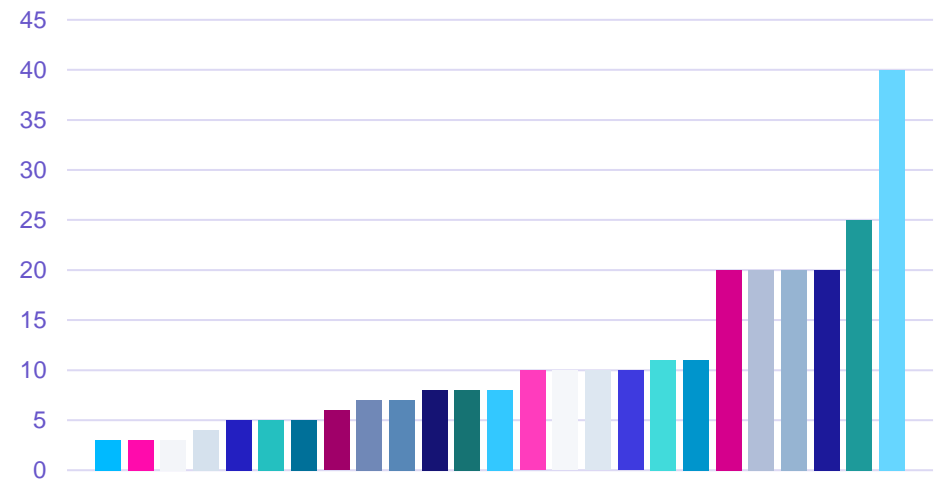
How many lines (from 1 to 89, mean 11)



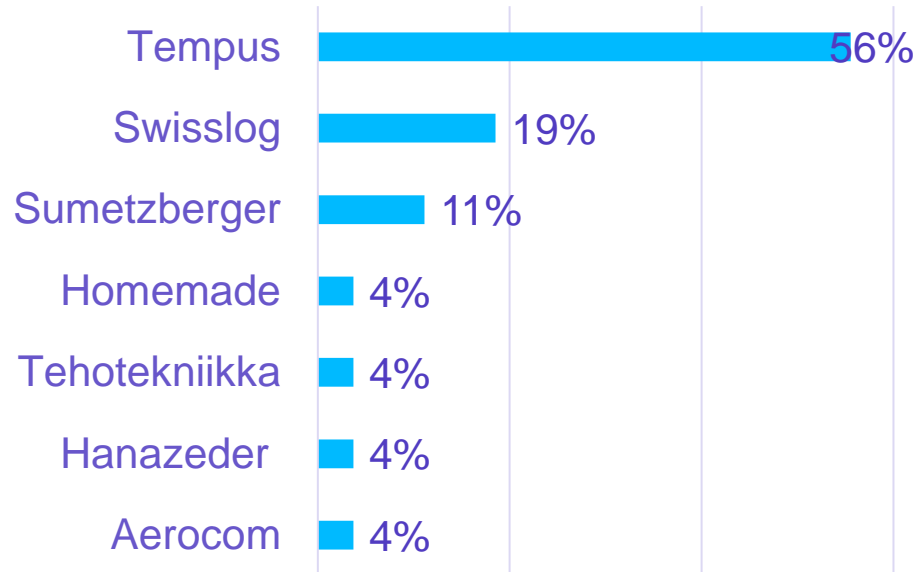
Percentage of samples received by PTS
(from 5 to 95 %, mean 50%)



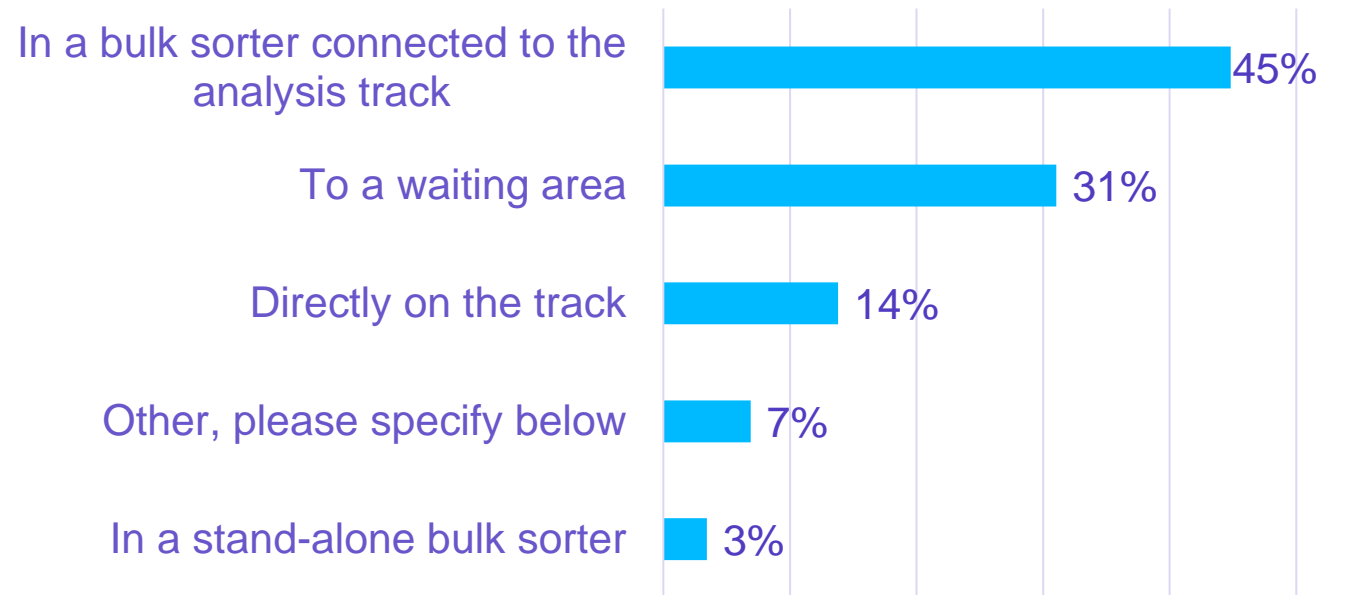
Olders line age (from 3 to 40, mean 11)



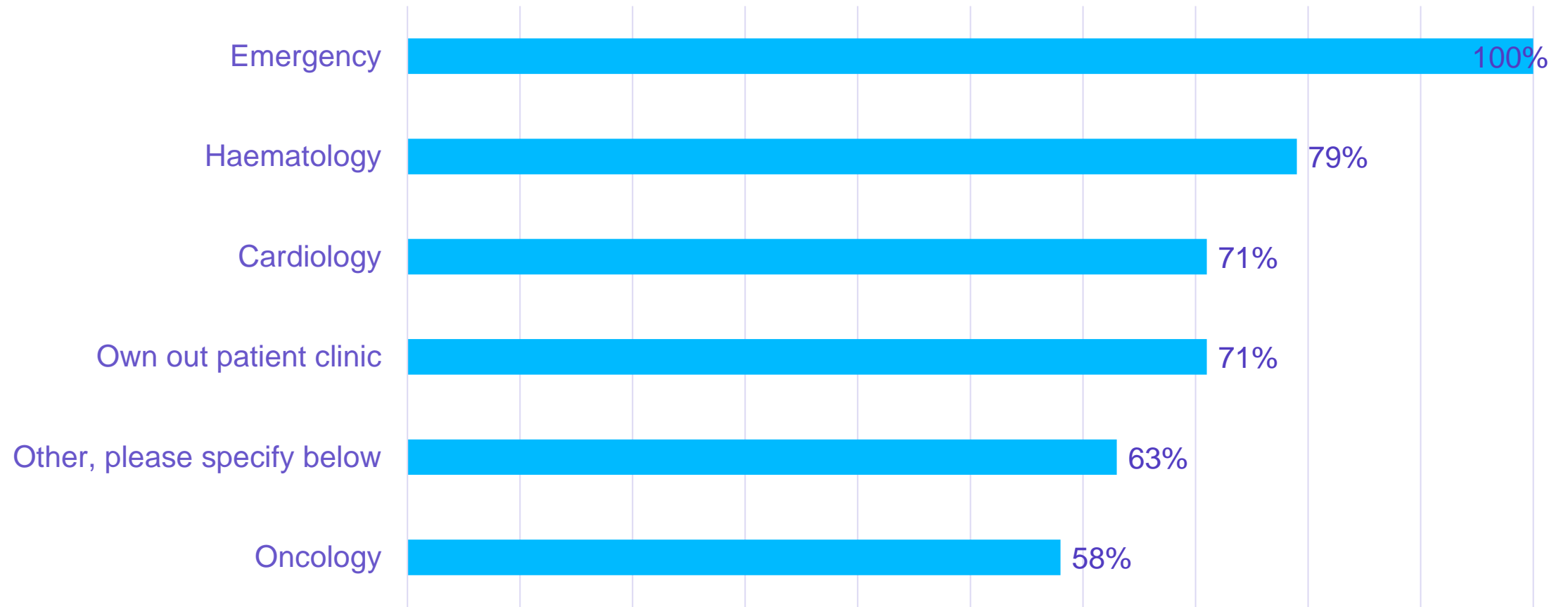
PTS information



Where does the line end

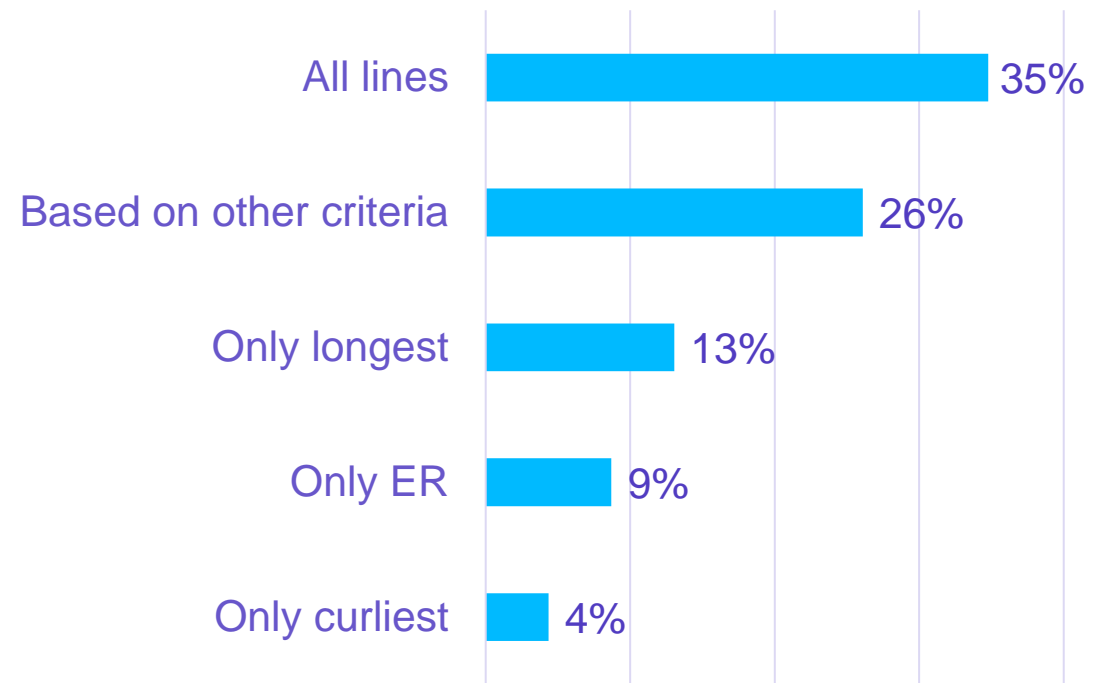
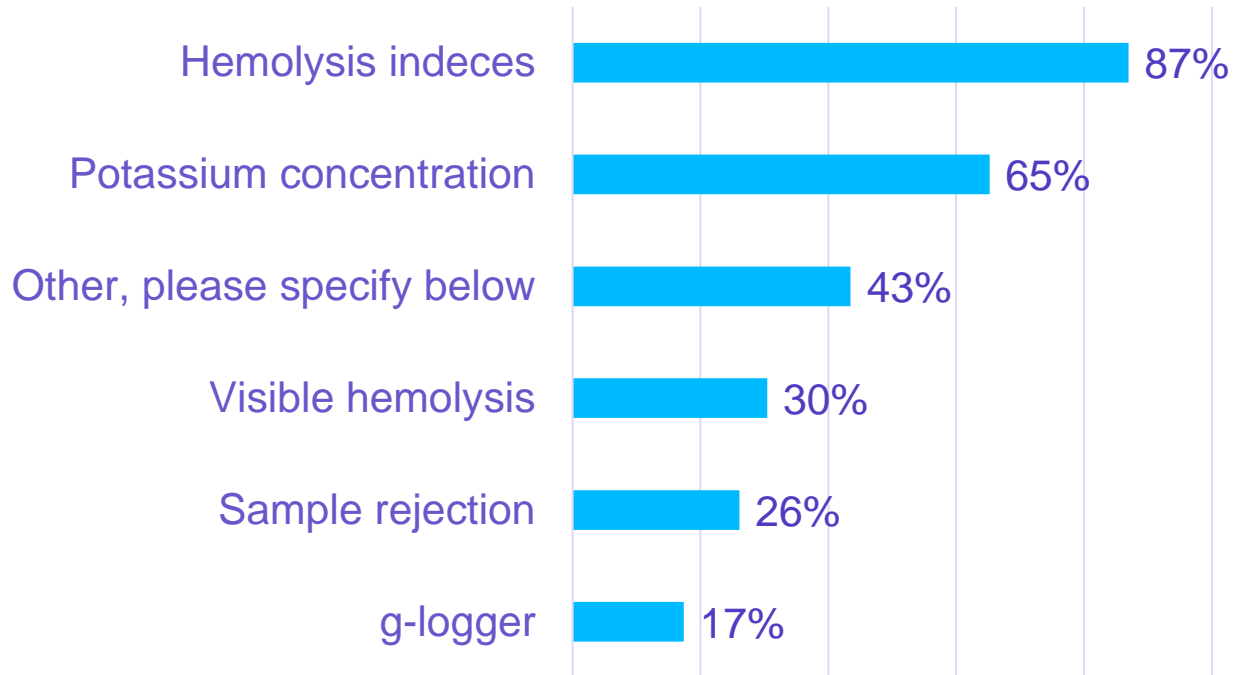
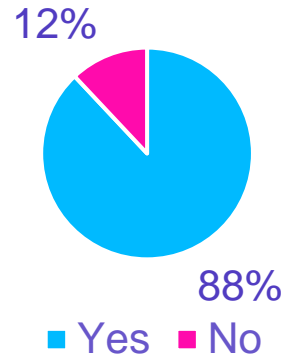


Contributing wards

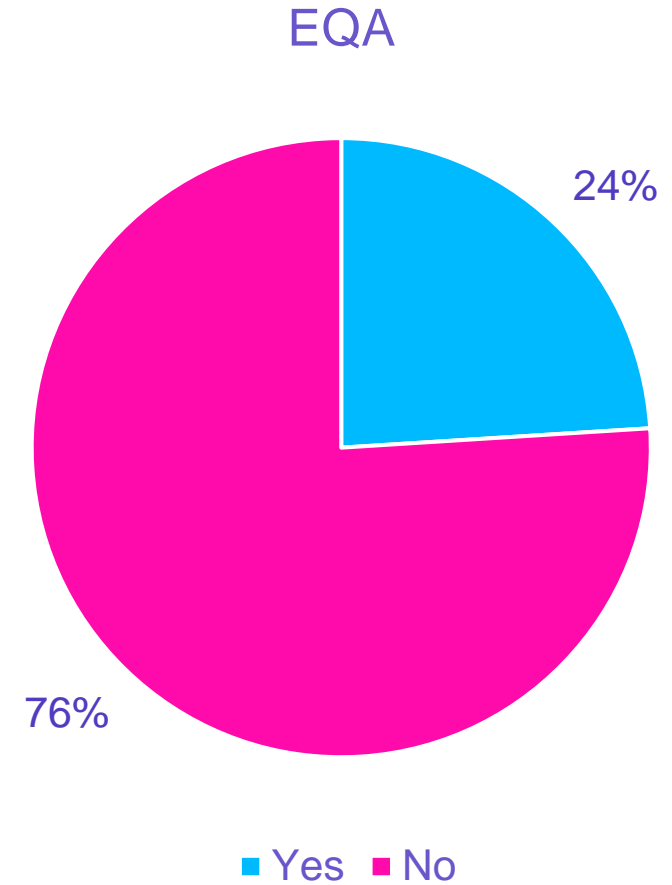
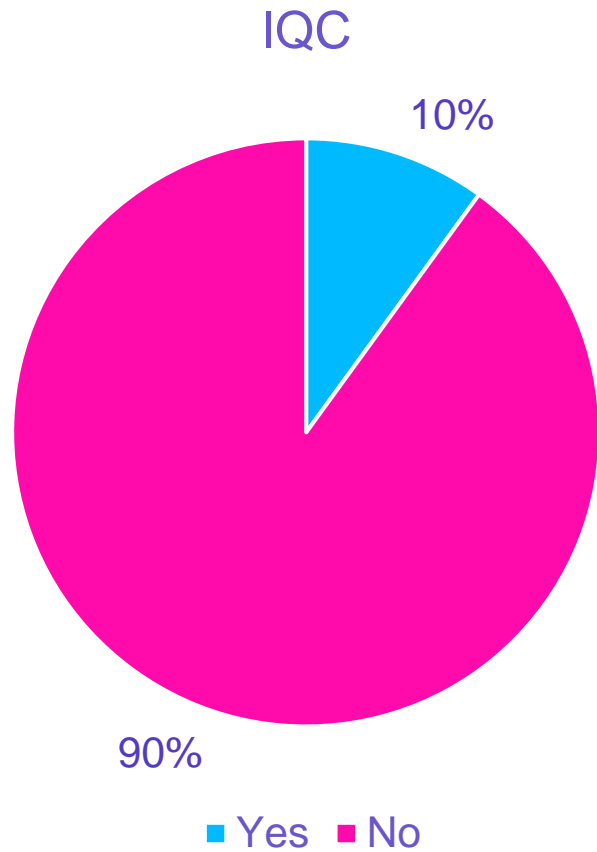


Validation

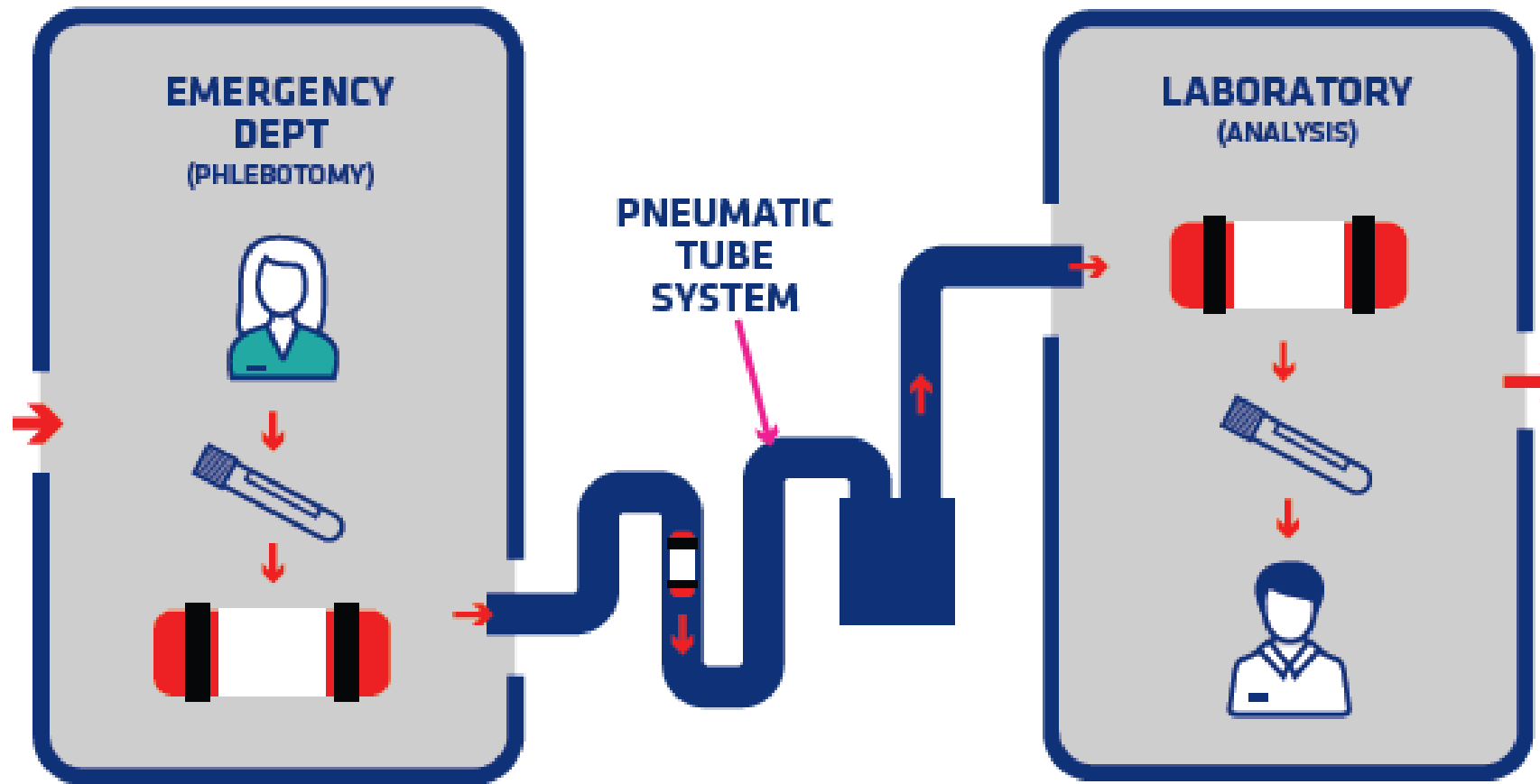
Validation of PTS



Quality control for PTS



How should we use the PTS?



EFLM Paper

Pieter Vermeersch*, Glynis Frans, Alexander von Meyer, Seán Costelloe, Giuseppe Lippi and Ana-Maria Simundic

How to meet ISO15189:2012 pre-analytical requirements in clinical laboratories? A consensus document by the EFLM WG-PRE

“Recommend continuous g-force monitoring in pneumatic tube system (PTS) transport”

Opinion Paper

Janne Cadamuro*, Geoffrey Baird, Gabriele Baumann, Karin Bolenius, Michael Cornes, Mercedes Ibarz, Tom Lewis, Gabriel Lima Oliveira, Giuseppe Lippi, Mario Plebani, Ana-Maria Simundic and Alexander von Meyer, on behalf of the European Federation for Clinical Chemistry and Laboratory Medicine (EFLM) Working Group for Preanalytical Phase (WG-PRE)

Preanalytical quality improvement – an interdisciplinary journey

For all of the various sample transport mechanisms it is important that each mechanism is fully verified, to ensure sample suitability for the requested analytes. Additionally, in order to allow a complete transport audit trail, data loggers, tracking temperature, g-forces and time should accompany the samples.

Mini Review

Mads Nybo*, Janne Cadamuro, Michael P. Cornes, Rubén Gómez Rioja and Kjell Grankvist

Sample transportation – an overview

<https://doi.org/10.1515/dx-2018-0051>

Received July 13, 2018; accepted November 22, 2018; previously published online December 18, 2018

Background

“ Regarding sample transportation, all laboratories must establish performance specifications for sample transportation as stated in ISO standards 15189 and 20658.

... Also, automation systems, e.g. PTS, must be quality-assessed, not only prior to use, but also continuously to assure sample integrity. “

Nordic working group recommendations -draft

Know	IQC	EQA	Define
<p>Know your own pneumatic tube system</p> <ul style="list-style-type: none">• Find out the actual route• Document who is responsible• Validation• Possible restriction of samples sent via PTS	<p>Use internal quality control to check effects on samples regularly</p>	<p>Use external quality control</p>	<p>Define the actions to take if something is wrong with the PTS</p>

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Thank you!