

**Nasogastric tubes: Treatment Delays,
Never Events, unnecessary Xray's.
It doesn't have to be this way.**

Marcus Ineson RN
Chief Marketing Officer
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Across hospitals in England, 28 patients died after the feeding tube was wrongly inserted into their airways (Stock photo) (Image: Getty Images/iStockphoto)

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NHS feeding tube bungles lead to 28 patients dying in hospitals after airways affected

There have been 145 incidents of wrongly inserted nasogastric tubes in hospitals in England over the past five years - and 28 of these ended in the patient's death

Revealed: 28 NHS patients have died after bungling hospital staff wrongly looped patients' feeding tubes into their lungs

- EXCLUSIVE: 145 incidents recorded over the last five years - with 28 fatal
- NHS classifies such accidents as 'never events', which should be avoidable

By MARK TOVEY FOR MAILONLINE
UPDATED: 10:08, 28 May 2023

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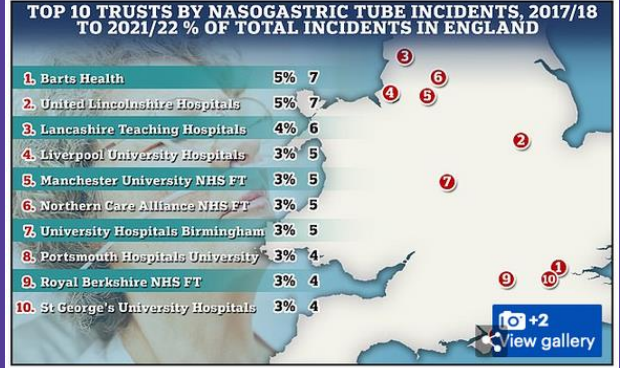
Nearly 30 patients have died after blundering NHS staff misplaced feeding tubes into their airways, MailOnline can reveal.

Over the past five years, 145 incidents of wrongly inserted nasogastric tubes have been officially recorded by hospitals in England. Twenty-eight ended in death.

Patients who have difficulty swallowing, such as stroke victims, can be fed or given medication through plastic tubes that go up the nose, and then loop down into the stomach.

In extremely rare cases, medics mistakenly place the tube into the patient's airways, which can cause them to slowly drown as fluids seep into their lungs.

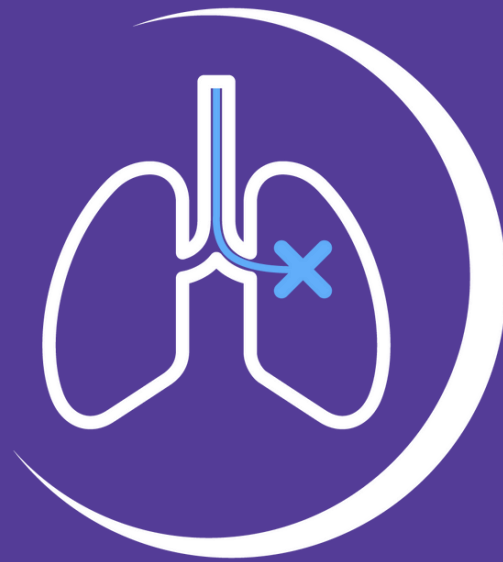
The NHS classifies such accidents as 'never events', meaning they should be totally avoidable if protocol is followed.



NGT Dangers

Placement is "Blind"
NGT can be inserted
into the lungs or
migrate to the lungs
during use

- 2-4% on insertion
- up to 50%
following initial use



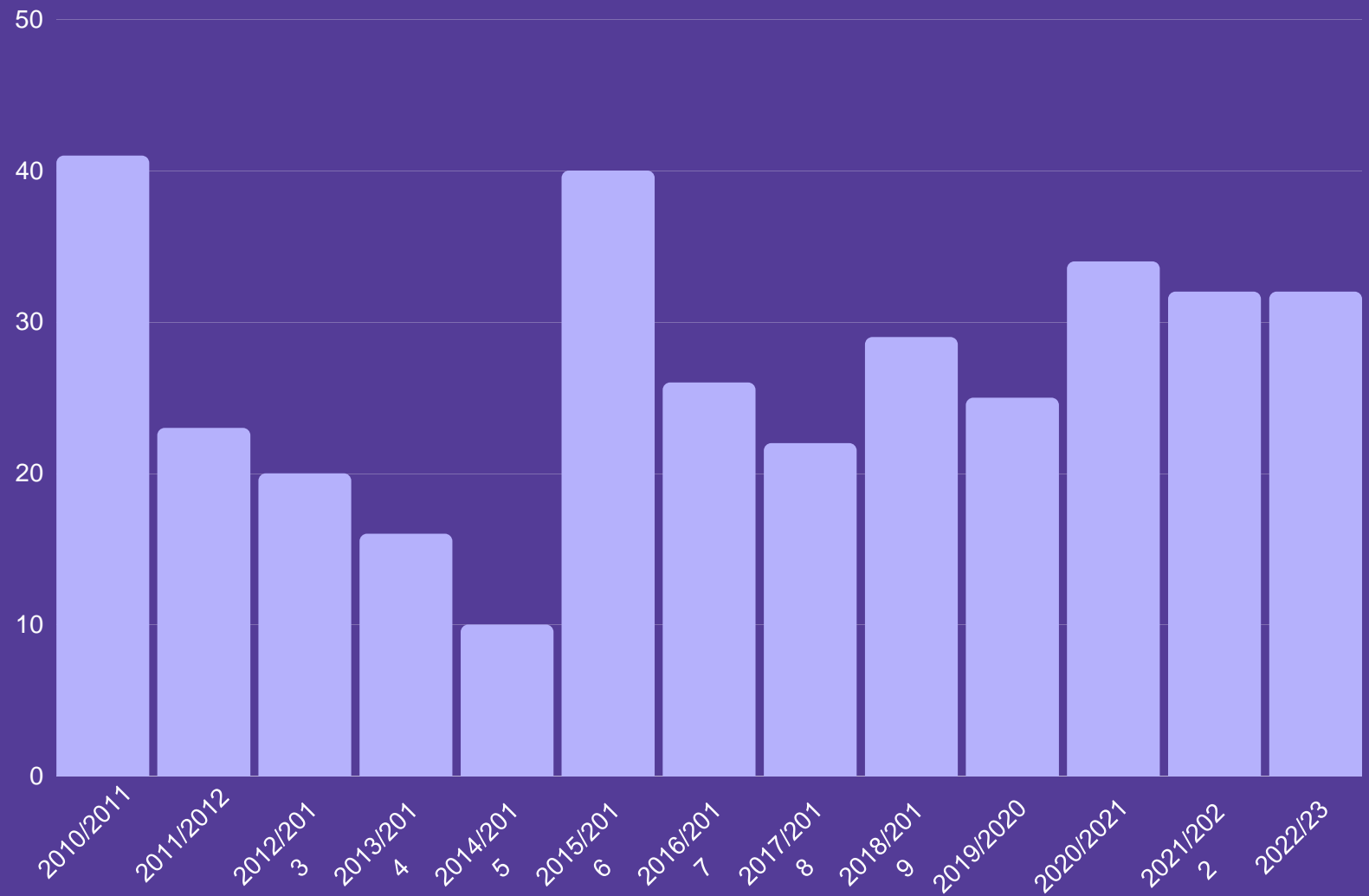
Death
Serious Injury



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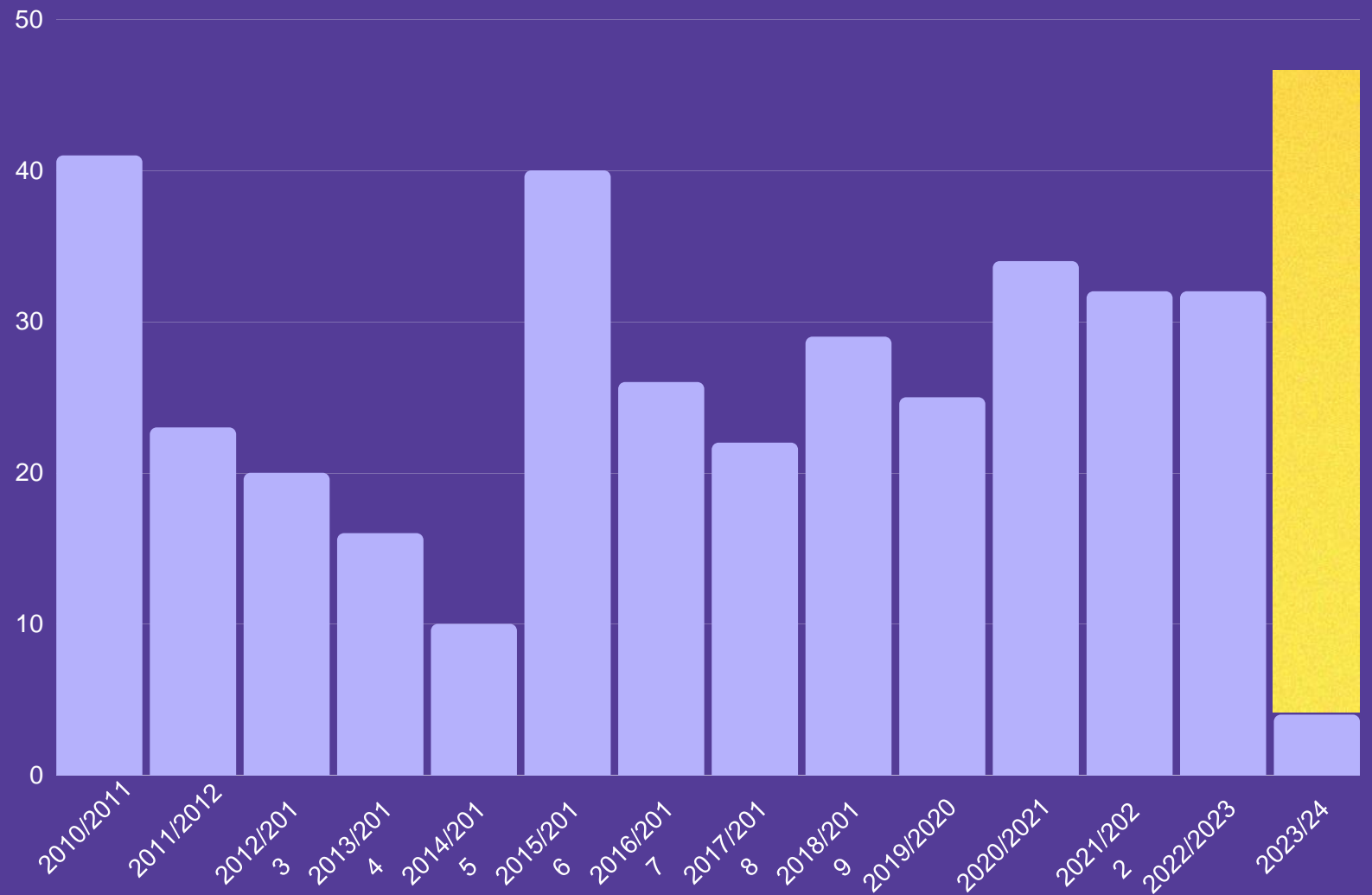
NHS England NGT Serious Events

- In the UK use of a misplaced NGT has been a "Never Event" since 2010.
- Since the advent of compulsory reporting incidents have increased.
- In that time the methods of confirming NGT placement have remained the same.

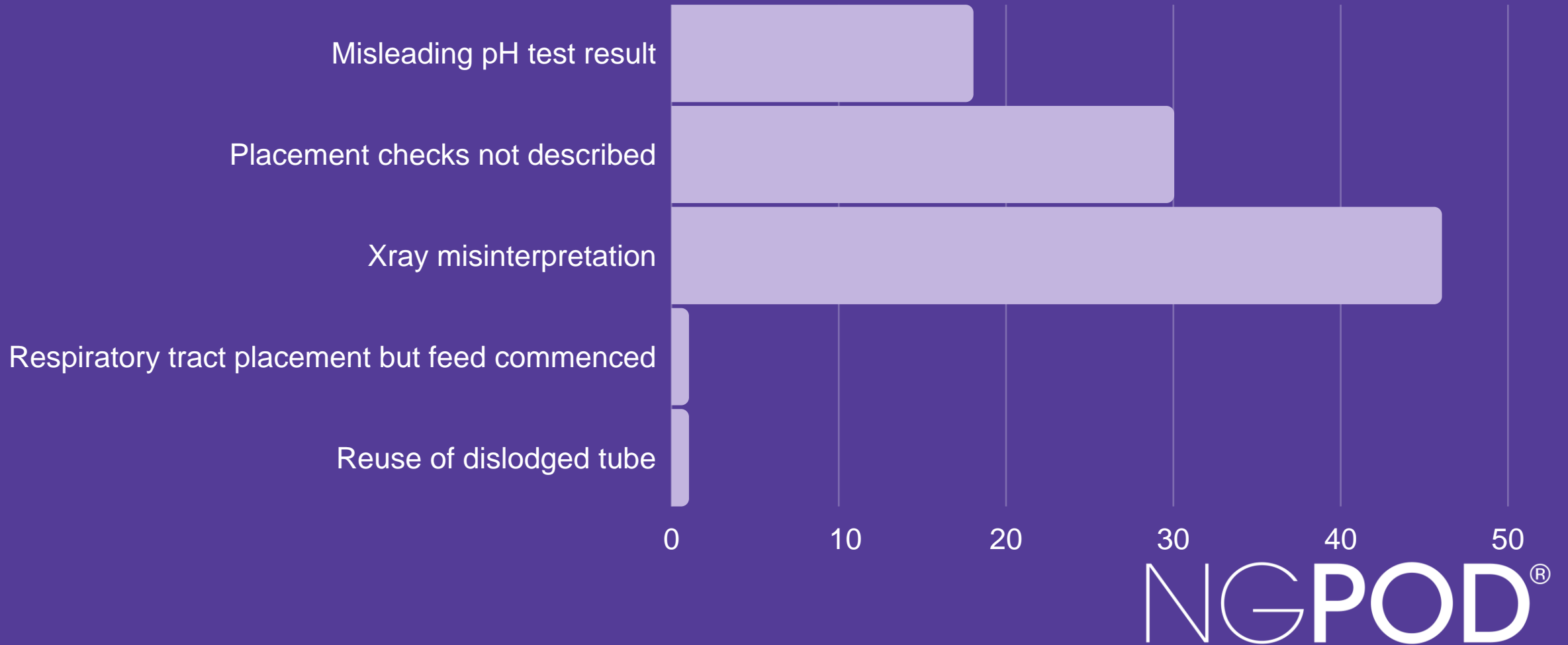


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Reasons for NGT related Never Events April 2020-March 2023



Reasons for NGT related Never Events April 2020-March 2023

Respiratory tract placement but feed commenced

1.5%



Misleading pH Result & Xray Misinterpreted

97%

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Nasogastric Tube Safety nothing has changed

Two Patient Safety Alerts (PSA) on “Reducing the harm caused by misplaced nasogastric tubes” released

2005



Third Patient Safety Alert released after further cases of death (29) & serious harm

2011

Two Patient Safety Alerts (PSA) on “Reducing the harm caused by misplaced nasogastric tubes” release

2013



HSIB Report & BAPEN SIG Report

2020



2009
Use of misplaced NG Tube added to NHS ‘Never Event’ list



2012
Rapid Response Report Issued



2016
Required assessment of healthcare providers compliance with NPSA/NHSI PSA’s 8



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"The accuracy of the pH paper decreased with an increase in pH." Hanna (2010)

It is also possible that failure of a pH strip to indicate accurately or to be read accurately,...might contribute to some NEs." BAPEN (2020)

"When pH strips can be impregnated, in 66.8% of cases pH strips fail to provide a clear outcome". Borsci (2017)

"The process of confirmation of correct NG tube placement using pH testing strips is potentially unreliable and its complexity underestimated." HSIB (2020)

"...participants made up to 11.15% errors in reading the (pH) strips..." Borsci (2017)

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Legacy NGT placement confirmation (UK)

Existing methods have significant flaws which create [new risks](#) and [delays](#) to treatment



Xrays	Aspirate & pH Strips
Risk of misinterpretation	Unreliable up to 45% failure rate in obtaining aspirate
Resource intensive	Multiple Human Factor risks
Treatment Delays	Reduced accuracy as pH increases
Multiple exposure risk	Risk of misinterpretation (12%)
High Cost	Treatment Delays

NGPOD System

NO ASPIRATE REQUIRED



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NGPOD[®] Clinical trial

Fibre-optic, electronic pH test device
compared with current NHS guidance to
confirm nasogastric tube placement

Published BMJ Nutrition, Prevention & Health ,8th December 2022
(doi: [10.1136/bmjnph-2022-000506](https://doi.org/10.1136/bmjnph-2022-000506))

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Performance against Objectives

Primary

Is as reliable in establishing the position of a NGT as current methods on both initial insertion and repeat testing?



Secondary

Will NGPOD[®] reduce the requirement for confirmatory x-ray?

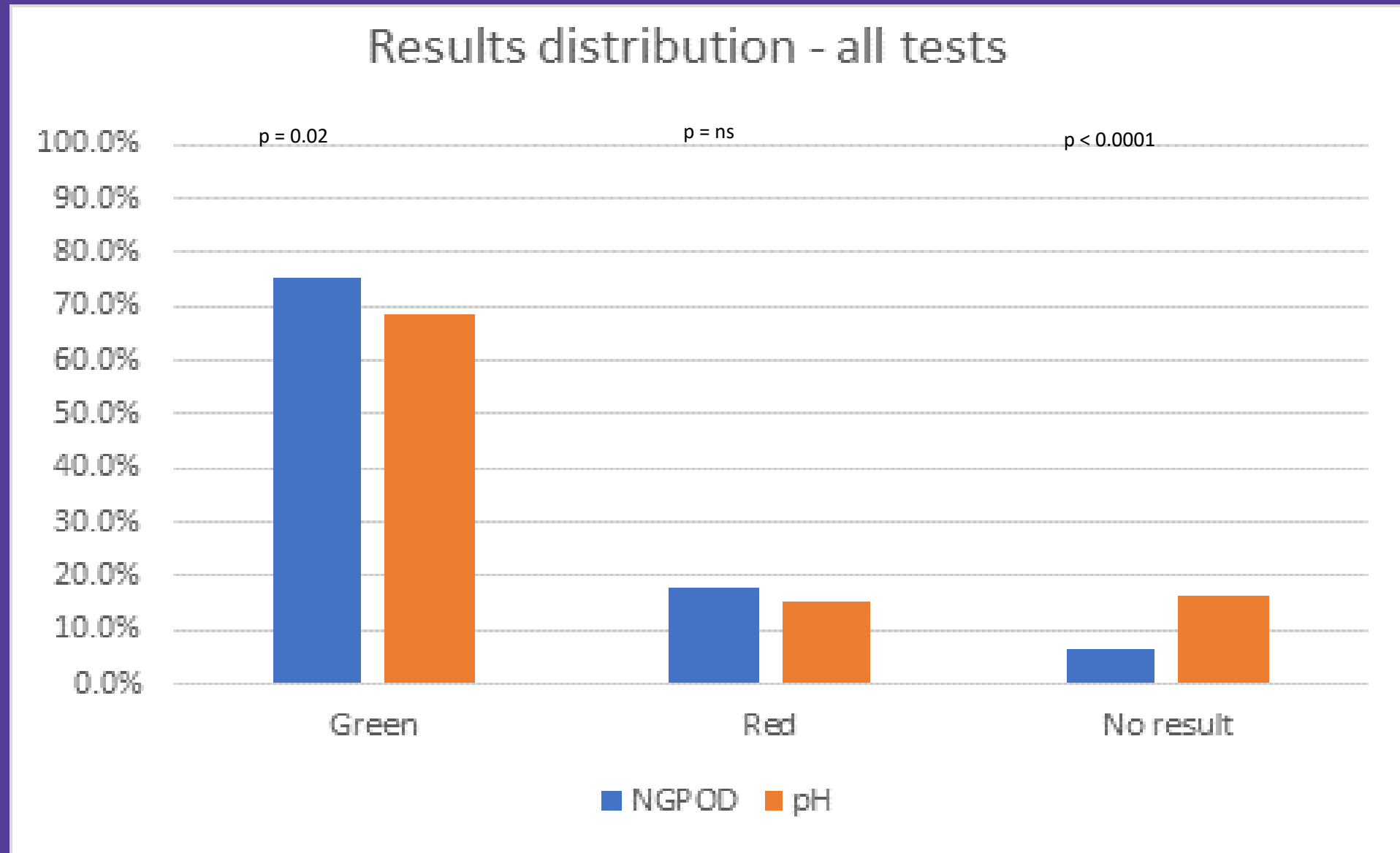


Will NGPOD[®] reduce delays to patients receiving nutrition, hydration or medication?



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Primary end-point results



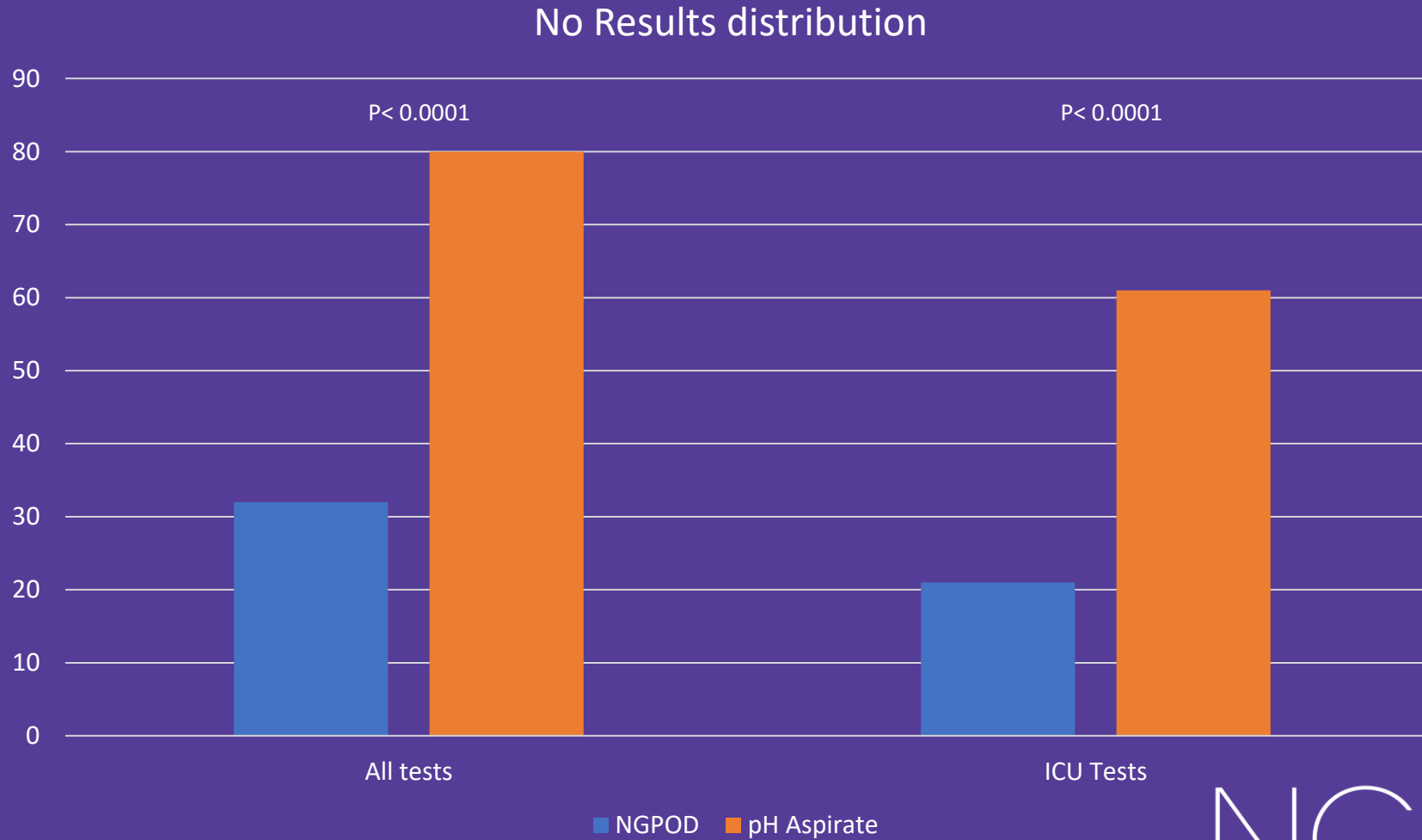
Primary Objective - Key Trial finding

For the ITT population (all tests), as well as ICU, initial and repeat test subgroups, there was a **STATISTICALLY SIGNIFICANT** reduction in the number of inconclusive tests when using NGPOD, relative to pH aspirate testing

"The objective, yes, no result delivered by NGPOD, eliminates the subjective reading a pH strip colour change..."*

*Earley T, Young A, Pringle S, et al Fibre-optic, electronic pH test device compared with current NHS guidance to confirm nasogastric tube placement BMJ Nutrition, Prevention & Health 2022;e000506. doi: 10.1136/bmjnph-2022-000506

Secondary end point-progression to x-ray



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Secondary Objective - Key Trial findings

- On Initial NGT placement NGPod can reduce the need for CXR or SCA in 61% of patients
- In ITU NGPod can reduce the need for CXR or SCA by 25%
- For all patients (ITT) NGPod can reduce the need for CXR or subjective clinical assessment (SCA) by 21%
- When performing Repeat tests NGPod can reduce the need for CXR or SCA in 16% of cases

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Secondary end point- time to treatment



Average time from false negative pH “Red” result* or No Aspirate to receive feed or medication via NGT

5hrs 30mins

* pH Red=>5.5 when subsequently x-ray confirmed correct placement

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Additional Findings – Discordant results

- In 43 tests NGPOD and pH testing gave opposing results (74% ICU)
 - In 23 cases where NGPod indicated Green vs. pH aspirate >5.5 (ave pH 6.4), in all cases the nasogastric tubes was confirmed to be correctly placed by CXR or SCA
 - In 20 cases NGPod indicated Red vs. pH aspirate ≤ 5.5 (ave pH 5.1) Data shows that in 85% of these NGPod tests the user not allowing the protocol time (5mins) for the test with an average test time ≤ 2 minutes.

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[NGPOD] “has the opportunity to reduce risk, improve safety and decrease the numbers of patients requiring X-ray. It, therefore, has the potential to reduce never events associated with NGT misplacement.”*

*Earley T, Young A, Pringle S, et al Fibre-optic, electronic pH test device compared with current NHS guidance to confirm nasogastric tube placement BMJ Nutrition, Prevention & Health 2022;e000506. doi: 10.1136/bmjnph-2022-000506

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Cost Analysis- NGPOD[®] vs pH Aspirate

Mean Cost/test



■ pH ■ NGPOD

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TRITECH

Sefydliad | Institute

Hywel Dda University Health Board

**Evaluation Report
NGPOD real world evaluation**

Report Produced on 20.01.2023

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Hywel Dda University Health Board

Evaluation Report
NGPOD real world evaluation

Report Produced on 20.01.2023

Jan '22-Sept '22

"NGPOD was found to be effective when using the device for the intended purpose and using it as per the manufacturer's specified conditions and instructions for use. It is just as quick as aspirate testing and reduces the need for x-rays in a real-world setting."

Nasogastric tubes:

Treatment Delays, Never Events,

unnecessary Xray's.

It doesn't have to be this way.



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