

“I KNOW WHERE YOU BIN!”- INHALER DISPOSAL PRACTICES
IN A PAEDIATRIC DEPARTEMENT, ONE YEAR ON

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INTRODUCTION AND AIMS

Inhalers contribute disproportionately to NHS carbon emissions: **around 4%**.

Metered-dose inhalers (MDIs) release hydrofluorocarbon (HFC) propellant gas. Alongside efforts to replace MDIs with lower-impact alternatives, the NHS has identified inhaler disposal as an area for improvement.

When inhalers go into landfill, they release their remaining propellant. This accounts for **up to 25% of their total emissions**. This can be avoided by correct disposal and incineration

- In 2021 we surveyed staff regarding inhaler disposal
- We found that staff **lacked confidence** on the subject and **did not routinely give disposal advice**
- We organised training, posters and leaflets for staff and parents
- In December 2022 we repeated the survey, to reassess knowledge and confidence in providing disposal advice

METHODS

We designed an online survey, open to all health professionals in our paediatrics department. Staff could access this via a QR code or a link. Responses were collected over a 6-week period.

- Questions focused on:
- Knowledge of the environmental impact of inhalers
 - Current methods for disposal
 - Provision of inhaler disposal advice



Fig 7. 2021 Parent Information Leaflet



Fig 8. 2021 Staff Information Leaflet

RESULTS

We collected 31 responses, from nurses (39%) and doctors (61%) who regularly prescribe or dispense inhalers.

When asked how informed they think they are on the environmental impact of inhalers, on a scale of 1-5, **68% graded themselves 3 or higher** (fig 2). In 2021, only 39% had rated themselves 3 or higher (fig 1).

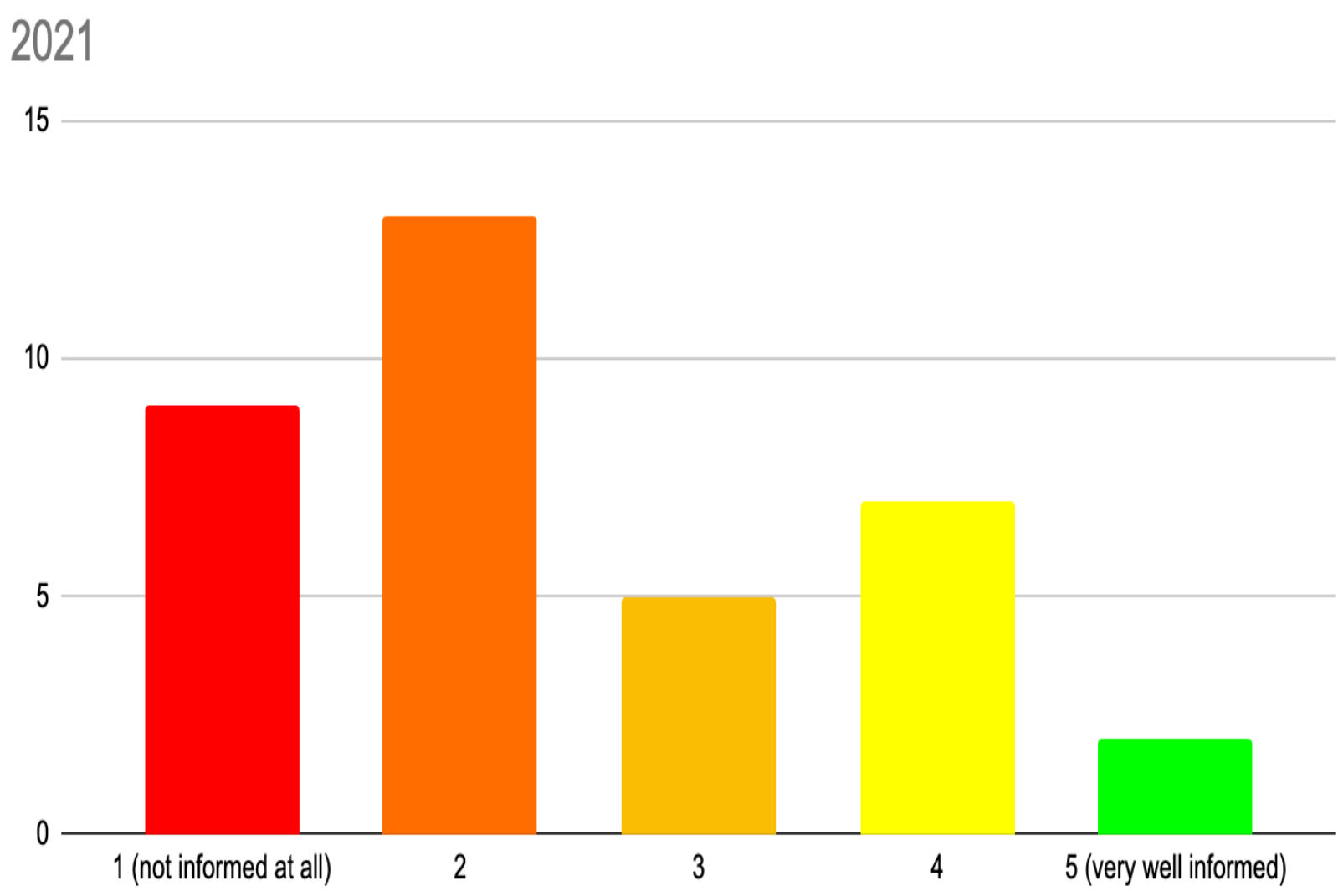


Fig. 1: 2021. How informed would you say you are now on the impact of inhalers on the environment?

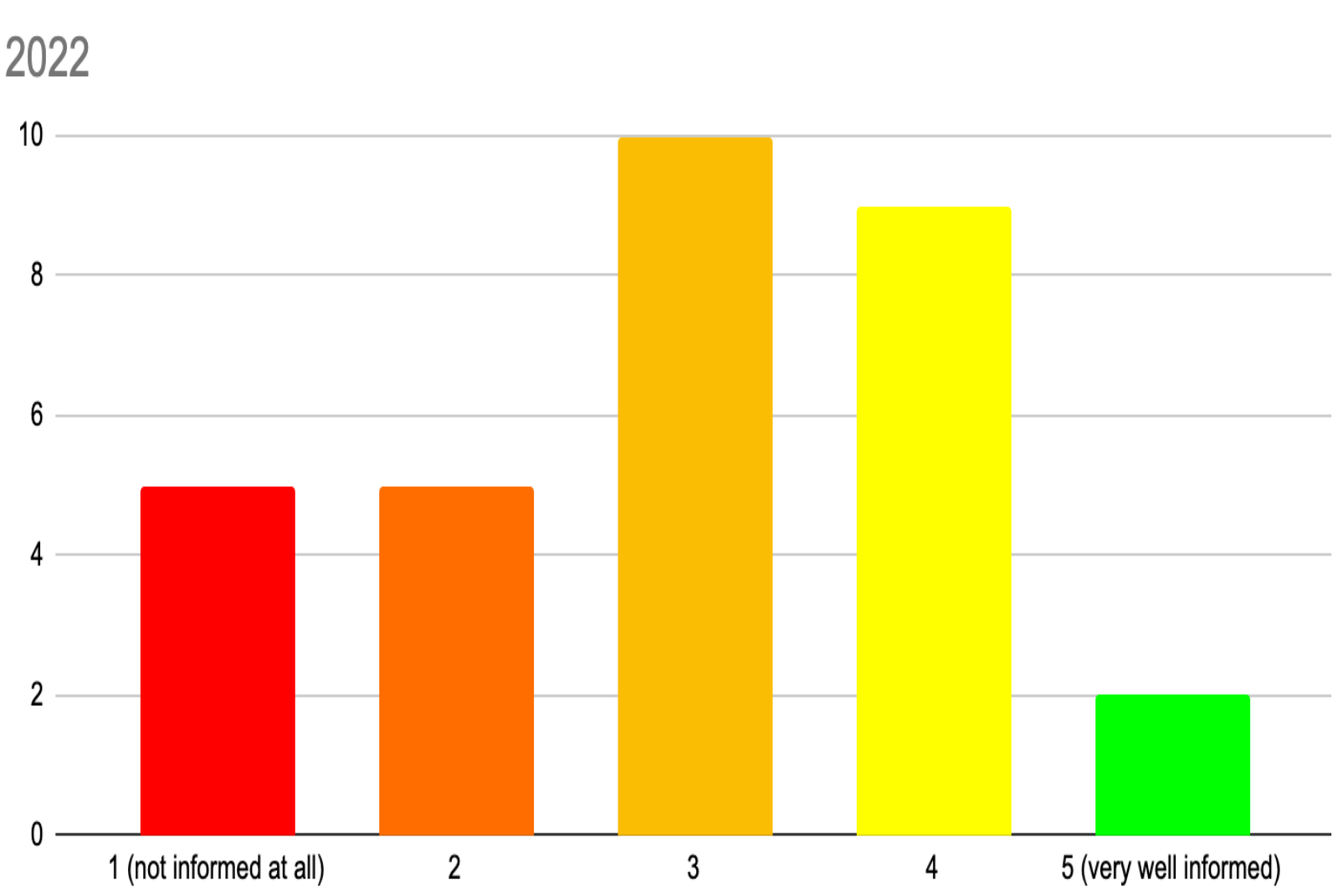


Fig. 2: 2022. How informed would you say you are now on the impact of inhalers on the environment?

When asked how informed they NOW think that they were one year ago, 73% said that were not informed at all, and 0% felt they were very well informed.

45% are currently advising parents on responsible inhaler disposal as part of their routine practice (Fig 4), compared to just 19% in 2021 (Fig 3). Of those who give advice, **82% started this following our training**. (Fig 5)

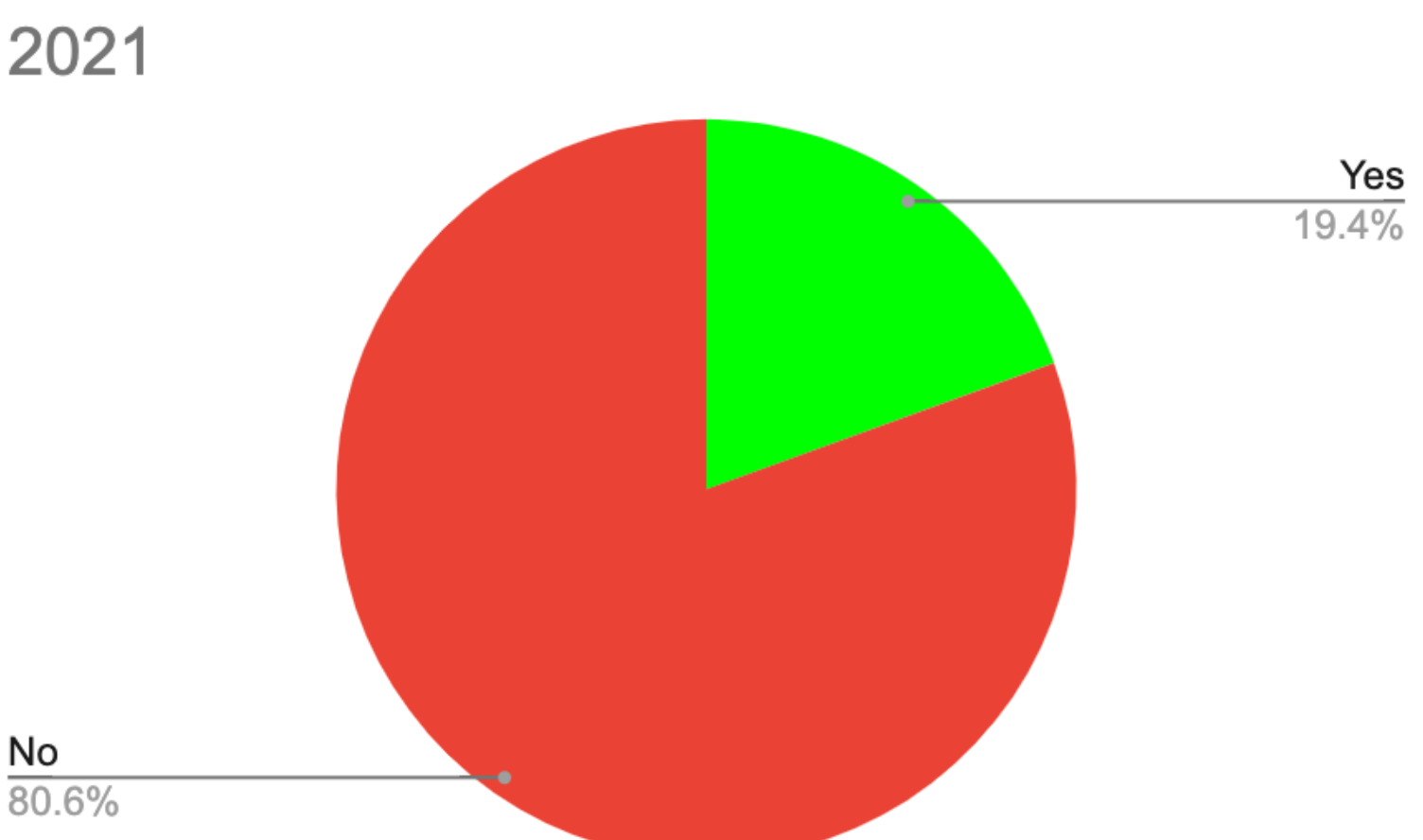


Fig 3. 2021. Do you currently advise patients and their carers on how to dispose of their inhalers?

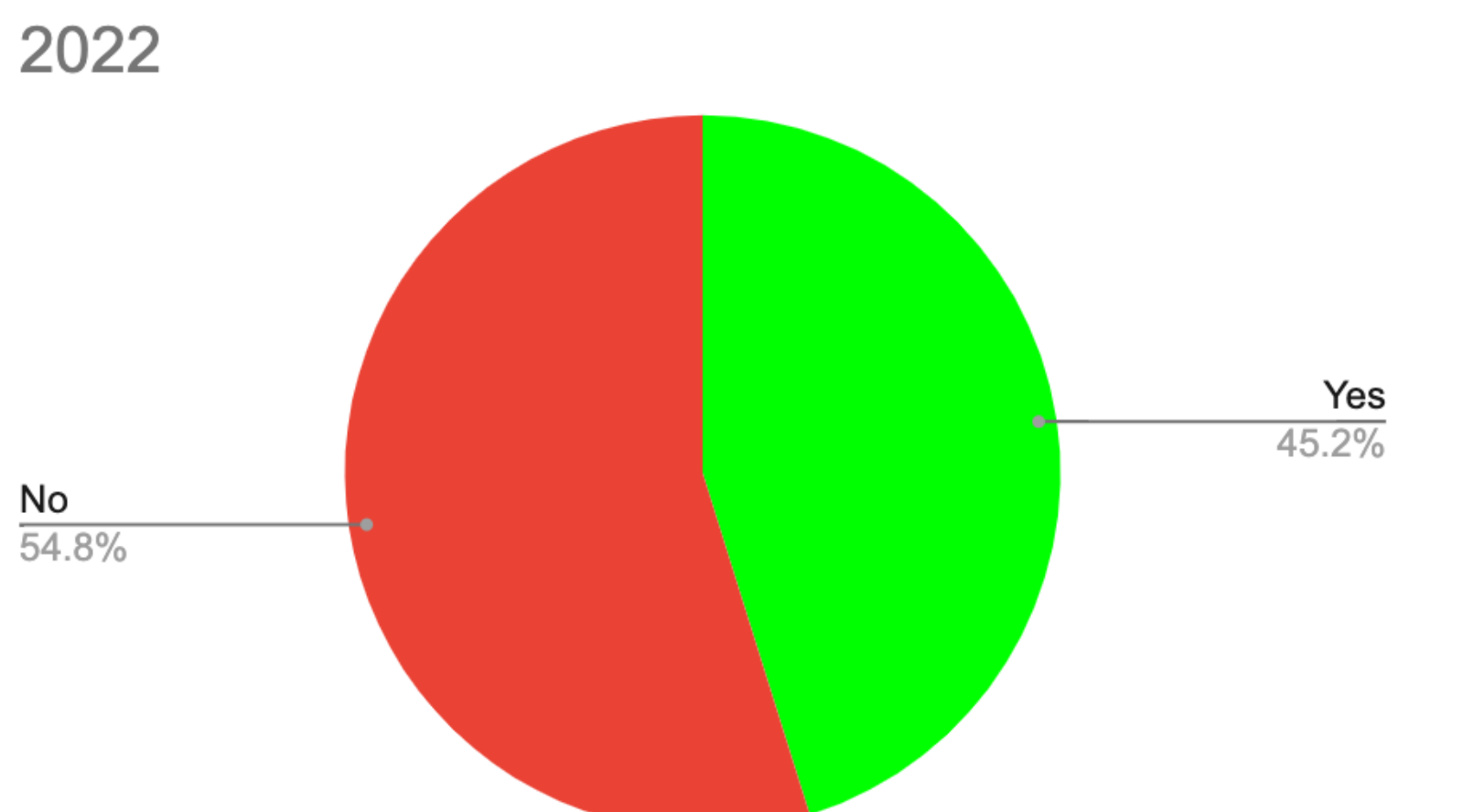


Fig 4. 2022. Do you currently advise patients and their carers on how to dispose of their inhalers?

RESULTS

When asked what advice they give to patients and parents, **“return to pharmacy” was, correctly, the most commonly given answer** in both the 2021 and 2022 surveys. It was given By 51% of respondents in 2021, and 65% of respondents in 2022 (Fig 6).

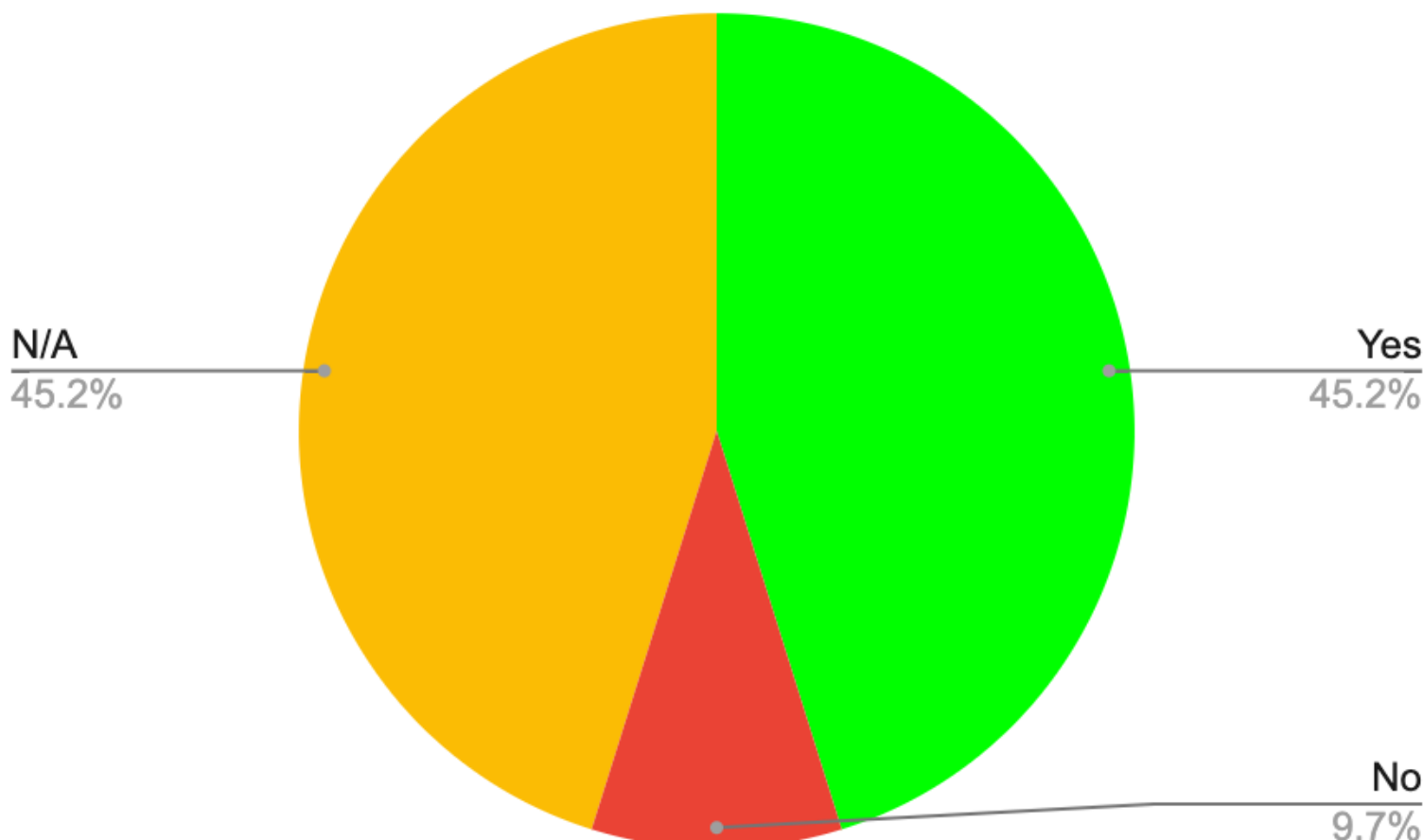


Fig 5. 2022. If yes, is this something you have started to do in the last year? (ie since the last survey)

In 2021, 45% of staff answered “don’t know”, when asked what advice they would give. When asked again in 2022, **this had reduced to just 19%** having no answer to give (Fig 6).

Fig 6. 2021/2022. What would you advise a parent/patient about disposal of their inhalers?

	2021	2022
Return to pharmacy	15	20
Take back to clinic appointment	0	2
Take back to GP	0	3
Consult their doctor	0	1
Recycle/Don't throw in general waste	0	3
Don't dispose before empty	3	6
Could not name ANY methods	13	6

Baseline understanding of inhalers’ environmental impact was also assessed in 2022. 84% of respondents recognised that inhaler disposal contributes to global warming. 29% knew that 7/10 inhalers are thrown away unfinished, 26% knew inhalers account for 4% of NHS’ emissions [2]. Notably, in every question asked about the impact of inhalers, the answer was underestimated by respondents. For instance when asked “What proportion of the NHS’ total greenhouse gas emissions do you think is due to inhalers?”, the most common answer given was 0.5%. The true answer is 4%. [1].

CONCLUSIONS

Our project has demonstrated that following training, paediatric staff felt more confident in their knowledge of the environmental impact of inhalers and, as a consequence, are regularly advising parents about responsible inhaler disposal.

We have had many new staff, nurses and doctors, join our department in the last year, who may have missed the training sessions. We plan to continue to show the importance of responsible inhalers disposal at staff inductions and departmental meetings, to reach all members of staff.

We plan to share this project with other departments in the region, to widen its impact.

REFERENCES

- 1.“Costs of switching to low global warming potential inhalers. an economic and carbon footprint analysis of NHS Prescription Data in England,” *BMJ Open*, 9(10). Wilkinson, A.J. *et al.* 2019.
2. “Climate change in healthcare: Exploring the potential role of Inhaler prescribing,” *Pharmacology Research & Perspectives*, 8(6). Hansen, J. *et al.* 2020.