NICE National Institute for Health and Care Excellence

Resource impact summary report

Resource impact

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Resource impact summary report

This summary report is based on the NICE assumptions used in the resource impact template. Users can amend the 'Inputs and eligible population' and 'Unit costs' worksheets in the template to reflect local data and assumptions.

Recommendation

NICE has recommended anhydrous sodium thiosulfate, within its marketing authorisation, for preventing hearing loss caused by cisplatin chemotherapy in people 1 month to 17 years with localised, non-metastatic solid tumours. It is only recommended if the company provides it according to the commercial arrangement.

Eligible population for anhydrous sodium thiosulfate

National Disease Registration Service (NDRS) estimates that over the period of 1997 to 2016, on average, there were 1,759 newly diagnosed cancer cases each year in England in people aged 0 to 17 years.

The molecular markers of paediatric solid tumors study estimates 60% of children with cancer have solid tumours.

The company' submission estimated that 65% of those with solid tumours have localised non-metastatic cancer. This was based on various published sources (Chen et al. 2021, Freyer et al. 2017, Youlden et al. 2019) which identified the percentage of localised disease per relevant cancer subgroup.

The Systemic Anti-Cancer Therapy (SACT) dataset for paediatric protocols that use cisplatin to treat non-metastatic solid tumours shows that 58 children have cisplatin treatment each year.

Table 1 shows the population that is eligible for anhydrous sodium thiosulfate and the number of people who are expected to have anhydrous sodium thiosulfate in each of the

next 5 years, including forecast population growth changes.

Table 1 Population expected to be eligible for and have anhydrous sodium thiosulfate in England

Eligible population and uptake	Current practice	2024 to 2025	2025 to 2026	2026 to 2027	2027 to 2028	2028 to 2029
People eligible for anhydrous sodium thiosulfate	58	58	58	57	57	57
Uptake for anhydrous sodium thiosulfate (%)	24	30	40	60	60	60
People having treatment each year	14	17	23	34	34	34

Anhydrous sodium thiosulfate is currently being used in England through the free of charge (FOC) medicines scheme. This indicates there are approximately 14 people each year having anhydrous sodium thiosulfate. The uptake for anhydrous sodium thiosulfate is based on the opinion of the lead pharmacist for haematology/oncology children's services.

Treatment options for the eligible population

There is currently no treatment available to prevent or reduce hearing loss caused by cisplatin chemotherapy in babies, children and young people with localised solid tumours.

Clinical trial evidence shows that hearing loss is less likely in people having anhydrous sodium thiosulfate after cisplatin. If hearing loss develops, it is less severe in those who have had anhydrous sodium thiosulfate.

Anhydrous sodium thiosulfate is required to be administered as a 15-minute infusion exactly 6 hours after the cisplatin infusion finishes. If it is given any earlier the cisplatin could be less effective, and if it is given any later it may not prevent hearing loss.

Based on average patient weight, 2 vials of anhydrous sodium thiosulfate are required for each cisplatin course of treatment.

For more information about the treatments, such as dose and average treatment duration, see the resource impact template.

Financial resource impact (cash items)

The company has a commercial arrangement. This makes anhydrous sodium thiosulfate available to the NHS with a discount.

Users can input the confidential price of anhydrous sodium thiosulfate and amend other variables in the resource impact template.

The payment mechanism for the technology is determined by the responsible commissioner and depends on the technology being classified as high cost.

For further analysis or to calculate the financial impact of cash items, see the resource impact template.

Capacity impact

Because of the duration of the cisplatin infusion, it is assumed that the person having treatment would be an inpatient, so there would be no additional cost to the commissioner for the administration of anhydrous sodium thiosulphate.

Anhydrous sodium thiosulfate is administered as an intravenous infusion in a hospital setting and it is currently being used in England through the free of charge (FOC) medicines scheme.

The number of hearing assessments in relation to hearing loss may reduce after the introduction and use of anhydrous sodium thiosulfate because hearing is protected.

It is assumed that everyone who has a cochlear implant will have bilateral cochlear implants rather than unilateral cochlear implants. NICE technology appraisal guidance on Cochlear implants for children and adults with severe to profound deafness (TA566) states that bilateral cochlear implants are provided for children.

It is assumed that, on top of the nurse time that is required for cisplatin treatment, 30 minutes of additional hospital nurse time may be required to administer anhydrous sodium thiosulfate (15 minutes for infusion and 15 minutes for setup). Users can amend to reflect local assumptions on extra supportive care and monitoring time.

Table 2 shows the impact on capacity activity in each of the next 5 years.

Table 2 Capacity impact (activity) in England

Capacity impact	Current practice	2024 to 25	2025 to 26	2026 to 27	2027 to 28	2028 to 29
Hearing assessment appointments	102	98	92	80	80	80
Administrations – duration of administrations (hours)	17	22	29	43	43	43
Preparation time before administration (hours)	17	22	29	43	43	43
Number of people with hearing loss	29	28	26	23	23	23

For further analysis or to calculate the financial capacity impact from a commissioner (national) and provider (local) perspective, see the resource impact template.

References

Chen H, Huang Z, Chen L, Li Y, Zhao T, Wei Q (2021) Characteristics of early death in patients with localized nasopharyngeal cancer: a population-based SEER analysis. Frontiers in Oncology 11: 580220

Freyer DR, Chen L, Krailo MD, et al. (2017) Effects of sodium thiosulfate versus observation on development of cisplatin-induced hearing loss in children with cancer (ACCL0431): a multicentre, randomised, controlled, open-label, phase 3 trial. *The Lancet Oncology* 18(1): 63–74

Youlden DR, Frazier AL, Gupta S, et al. (2019) Stage at diagnosis for childhood solid cancers in Australia: a population-based study. *Cancer Epidemiology* 59:208–14. doi:10.1016/j.canep.2019.02.013

Key information

Table 3 Key information

Time from publication to routine commissioning funding	90 days
Programme budgeting category	09X Problems of Hearing
Commissioner(s)	NHS England

Provider(s)	Secondary care – acute
Pathway position	Preventing hearing loss caused by cisplatin chemotherapy in people aged 1 month to 17 years with localised solid tumours

About this resource impact summary report

This resource impact summary report accompanies the NICE guidance on Anhydrous sodium thiosulfate for preventing hearing loss caused by cisplatin chemotherapy in people 1 month to 17 years with localised solid tumours and should be read with it.

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