



PAIN RELIEF (HEADACHE)

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Research Summary:

Health and Development Policy – Pain Relief (Headache)

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Executive summary

Migraine imposes a substantial burden on the world's population. To put it in perspective, migraine contributes an annual DALY¹ burden of ~42 million DALYs compared to malaria's 46 million ([Global Health Data Exchange, 2019a](#)). The DALY burden is distributed across the globe, with a similar problem size in high-income and low-income countries ([Global Health Data Exchange, 2019b](#)).

Migraines are not fatal, so all of the burden is from chronic pain and suffering. This means that addressing migraines might be a key priority for those with ethical views that value preventing suffering above saving lives, such as negative-leaning² utilitarians.

Despite this huge DALY burden, work to prevent headaches or reduce the pain that they cause is extremely neglected.

¹ Disability-adjusted life year.

² Negative-leaning utilitarianism prioritizes preventing negative utility (suffering) over increasing positive utility (happiness).

One of the leading organizations working in the space is [Lifting the Burden with its Global Campaign Against Headache](#). It has proposed a promising solution to tackling the burden of headache: the Structured Headache Services approach ([Steiner et al., 2021](#)). However, it has limited capacity and limited ability to focus on policy campaigning work. Therefore, there is potential for a new organization to work on advocacy in this space.

We evaluated 3 interventions attempting to reduce the burden of headache, which were all informed by Lifting the Burden's Structured Headache Services approach. Each intervention tackles a different headache type and operates at a different level of the Structured Headache Services approach. (It should be noted that for ease of analysis we broke down the concept of the Structured Headache Services approach into its key separate components, however, given these components are all inter-related it may be that breaking down the problem in this way might miss out on some of the benefits of a fully combined approach.)

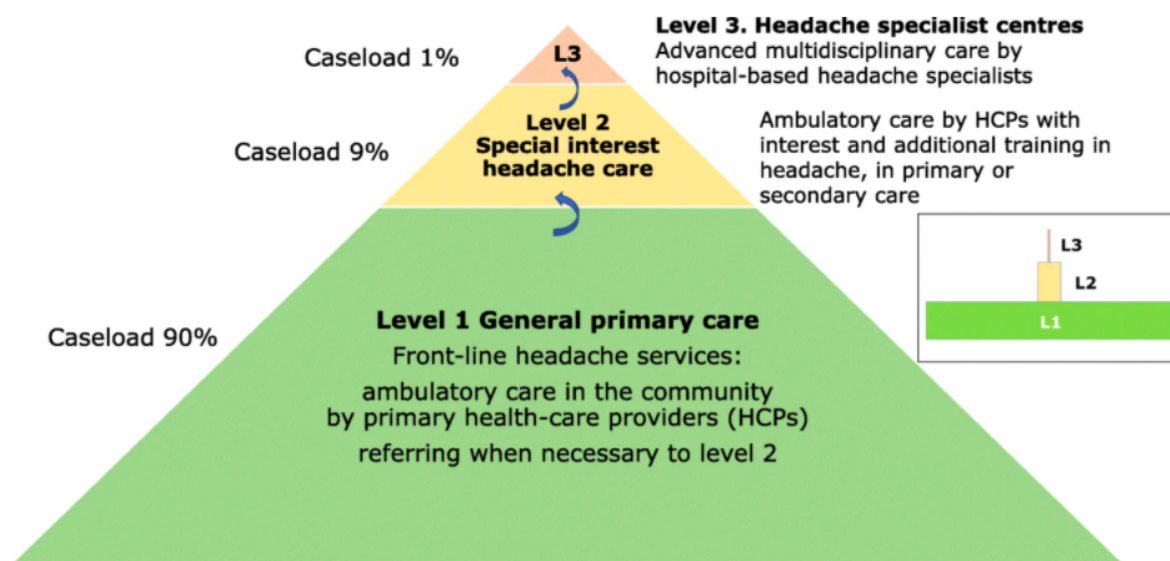


Figure 1. Depiction of Lifting the Burden's Structured Headache Services model, organized on three levels with predicted caseloads ([Steiner et al., 2021](#)).

1 Government provision of headache clinics

This intervention would involve a new charity advocating for the government provision of specialist headache clinics, focusing on the diagnosis and treatment of migraine. Governments would open these clinics and cover the staff salaries, as well

as any overhead costs, including the costs of diagnostics. These clinics would provide Level 2 and Level 3 services as defined under Lifting the Burden's Structured Headache Services model (Figure 1).

We were unable to find substantial evidence specifically looking at the clinical outcomes of specialist headache clinics, though we did discover one study. In Georgia, two interdependent headache clinics providing Level 2 and 3 services were opened. The main clinical outcome was that headache frequency decreased after treatment (that is, patients experienced fewer days with headache than before treatment).

- In patients with migraine, the proportion with infrequent headache (2 days/month) increased from 22.7% to 53.3%, while the proportion with headache on 6–15 days/month decreased from 41.2% to 8.9%.
- In patients with tension-type headache, the proportion with headache on 2 days/month increased from 21.8% to 50.0%, while the proportion with headache on 6–15 days/month decreased from 45.5% to 0%.

([Giorgadze G, Mania M, Kukava M et al., 2018](#))

There has also been a study from Lifting the Burden modeling the potential impact and cost-effectiveness of Structured Headache Services in Luxembourg, Russia, and Spain. The study modeled that Structured Headache Services can close 50% of the gap between current and “target” care (where target care is total coverage). For example, in Luxembourg, where the current treatment uptake for migraine is 83.8%, the treatment uptake following the introduction of Structured Headache Services would be 91.9%. This study also modeled the potential cost-effectiveness of the Structured Headache Services approach ([Tinelli, M., Leonardi, M., Paemeleire, K. et al., 2021](#)). The results from their model in Luxembourg are as follows:

- Migraine: €2,192 spent for each healthy life-year gained
- Tension-type headache and medication overuse headache: cost-saving

Although we could find little specific research on this intervention, this lack of evidence was not what ultimately ruled it out. Rather, our main concerns about this intervention were two-fold:

- 1. Experts highlighted the lack of government support as a significant barrier to progress in this space.**

The historical lack of government support for work in this space has meant that the progress to date has mostly been a result of interested individuals opening their own clinics. In fact, there has been little government support for clinics even after they have been opened and have been shown to be successful. For example, in Georgia, clinics have struggled to provide headache services at Level 1, as they would need government support to do this, which they still do not have.

Note that there are a few examples where the government has done work in this space—the UK, Denmark, and China—though none of it has been done very effectively. For example, in Denmark, it seems that private clinics were created and then governments bought into them and supported them, rather than supporting their creation (or providing these services themselves).

2. This intervention has a limited cost-effectiveness

As the number of patients that can be treated by each clinic is quite small, it is difficult to impact a large number of DALYs. As a result, this intervention does not look as cost-effective as the other ideas we were considering in this research round, with a cost per DALY equivalent of \$2,664 (accounting for both charity and government costs).

2 Education campaign

This intervention entails advocacy for the government to run an education campaign that would teach those with tension-type headaches how to self-manage and self-treat their headaches. Tension-type headaches are almost always self-manageable, and there is little that professional care can do beyond offering over-the-counter medications ([Steiner et al., 2021](#)).

The impacts of this approach would be two-fold: 1) The direct impact for those with tension-type headaches who get relief from better-managed or averted headaches, and 2) The indirect impact of reducing doctor visits and the resultant saved health care resources.

Ultimately, we ruled out this intervention as well. It did not look as cost-effective as the other ideas we were considering, with a cost per DALY equivalent of \$3,822 (accounting for both charity and government costs). The cost-effectiveness of this intervention is limited by the following:

- The relative effectiveness of self-treatment at averting DALYs is lower than treatment in a clinic (or following a treatment plan prescribed through a clinic).
- The disability weight of tension-type headaches is an order of magnitude lower than the disability weight of migraine (0.441 for migraine vs. 0.037 for tension-type headaches).

Both of these factors mean that we would have to reach a large number of people for this intervention to look extremely promising, and we think that it would be prohibitively difficult to effectively reach the required magnitude of people.

It is important to note, however, that this intervention may be more cost-effective than we have modeled. Lifting the Burden's model of Structured Headache Services in Luxembourg, Russia, and Spain found that an education campaign focused on tension-type headaches could actually be cost-saving. This is because the education campaign is expected to increase self-treatment, thereby reducing doctor visits for tension-type headaches and saving health care resources. We did not fully capture these cost-savings in our CEA (as we are generally skeptical of CEAs that are dominated by hard-to-estimate second order effects, such as potential cost-savings), so our evaluation might be an underestimate. It could be worth further research into these cost-savings.

3 Provider training

This intervention focuses on asking the government to provide training to primary health care professionals (GPs, nurses, etc.) on how to effectively diagnose and treat some types of headache – that is, they would be providing Level 1 services as defined under Lifting the Burden's Structured Headache Services model ([Steiner et al., 2021](#)).

This approach would mostly focus on medication overuse headaches (MOH), which can usually be recognized and effectively managed at Level 1. The impact of this approach would also be two-fold: 1) The direct impact for those with MOH who get relief from better-managed headaches or averted headaches, and 2) The indirect impact of reducing specialist visits (at Levels 2 and 3) and the resultant saved health care resources.

This is the approach that we have evaluated the least, so it may be worth further research in the future. We ruled this intervention out largely due to an inability to

find previous examples of this approach being taken for headaches. We also think that advocacy to governments may not be the best target. Rather, advocacy may be better targeted at individual medical and nursing colleges to provide this kind of training in their institutions.