

Creating Ready-to-Use Packs to Facilitate the Use of Magnesium Sulfate

Health need

Preeclampsia and eclampsia (PE/E) account for at least 14% of maternal deaths in low-resource settings and are among the leading causes of maternal death and disability worldwide. In 2011, the World Health Organization (WHO) developed evidence-based recommendations for the prevention and treatment of PE/E and identified magnesium sulfate (MgSO₄) as the anticonvulsant of choice in cases of severe PE/E. Despite the endorsement by WHO and its presence on most national essential medicines lists, MgSO₄ is still underused, incorrectly administered, or unavailable in many low-resource settings due to a combination of provider and supply factors. The following are key examples of the many barriers surrounding MgSO₄ use:

- The current WHO regimen for MgSO₄ is extremely complex and requires intravenous (IV) and intramuscular (IM) administration, different dilutions for IV and IM doses, and different doses for IV, IM, loading, and maintenance.
- There are multiple concentrations of MgSO₄ currently available on the market, making the calculation of dosing and dilution even more complex and confusing.

Technology solution

Although simplifying the application regimen could be a solution to increase use of MgSO₄, this will require a large investment and a long timeline. As an interim solution, PATH has been working to develop and evaluate the concept of ready-to-use MgSO₄ packs that will eliminate dosing calculation and dilution at the time of use. Ready-to-use MgSO₄ packs could separately contain appropriate strengths of MgSO₄ for the loading and maintenance doses. Mechanisms such as color coding could be used to enable health care providers to easily identify which pack contains the loading dose or the maintenance dose.

Current status and results

PATH has developed a questionnaire for stakeholders to identify preferred components for the packs. Our next step is hold interviews with the key stakeholders, including health care workers, procurement agents, and international procurement agencies, in up to four countries in sub-Saharan Africa. These interviews will be conducted in collaboration with PATH country offices. After identifying the components for the packs, we plan to develop a prototype pack for health care professionals in the field to evaluate for acceptability and feasibility. The results from the evaluation are expected to be available by the end of 2014.



PATH/Evelyn Hockstein

An expectant mother in Burkina Faso.

“The risk that a woman in a developing country will die of pre-eclampsia/eclampsia is approximately 300 times higher than that for a woman in a developed country.”

Balancing the Scales: Expanding Treatment for Pregnant Women with Life-Threatening Hypertensive Conditions in Developing Countries. Engender Health, 2007.

Availability

For more information regarding this project, contact Mutsumi Metzler at mmetzler@path.org.

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