



EMPOWERING THE COMMUNITY TO PRACTICE SAFE AND EFFECTIVE MEDICATION STORAGE AT HOME

Issue / Purpose and Background

The improvement of the disease condition of a patient depends primarily on the quality of the treatment the patient receives. It is a collective effort of health care professionals, the patient, and the caregiver at home to ensure the **continuity of medical care** for a patient. Among other things, handling and managing the medication used for patient's treatment is an aspect that requires much attention.(1) Storing the medication in the **appropriate condition** is a prominent part of the medication handling at home.

Generally, four main factors to be considered in ensuring proper storage of medicines are light and heat, humidity, storage temperature and factors.(2) The storage conditions might **affect the physical, chemical, and pharmacological** properties of the medicines. For example, storing insulin at high temperatures (32 and 37°C) showed 14-18% decreases the potency of several formulations of three different insulin brands.(3) Furthermore, to such an extent, inappropriate storage might lead to the unfortunate event of accidental **medication poisoning**.(4)



Figure 1: Infographic on “Where to store medicines?” (translated from *Di mana nak simpan ubat?*), taken from Know Your Medicines Portal, Ministry of Health.(5)



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It is essential to **educate the patients and the caregivers** on ways to keep the medicine appropriately at home.(6) Increasing awareness of and imparting knowledge to the community should not be limited to the Ministry of Health. It is indeed a collaborative duty of many agencies and ministries. This paper will illustrate a few recommendations for the Ministry of Women, Family and Community Development, the Ministry of Education, and the Ministry of Communication and Multimedia.

The current situation

Several studies in other countries have demonstrated inappropriate practices by the sampled communities. Firstly, a study in Saudi Arabia in 2020 illustrated more than 35% of participants (n=1065) **could not identify the most suitable** conditions.(7) 10% of those were unaware of the effect storage conditions may exert on the medication shelf-life. The results also showed many respondents store their medication **in inappropriate areas**.

Another study conducted in Palestine also showed almost similar findings. Most of the respondents stored the medications (43.4%) in **unsafe places** around the house.(8) For example, at a location within the reach of children. Approximately, one third (32.5%) of the medications had been taken out from their original container.

An online survey conducted recently in the United States of America showed 72 (46.8%) participants stored at least one of their medications on the countertop.(9) The majority of the participants were known to keep at least one medication **inappropriately** with one or more of these medication storage issues: **moisture and humidity, temperature, and poisoning hazard**.

To date, no study has been conducted to assess the practice of home medication storage among Malaysians. However, we could infer similar situations observed through studies by different countries to the practice among medication users in this country. With such information, we should start strategizing and find possible measures to **educate** the community to practice safe and effective home medication storage.

The recommended action

Empowering the women

In most families, the women are known as **the main caregiver** and are often responsible to handle and manage the medication (both acute and chronic diseases). Therefore, a **training program** including workshops and courses should be provided to them. It is recommended for the Ministry of Women, Family and Community Development and the corresponding agencies under it



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such as the Department of Women Development to be the main player in this women empowerment program.

With the collaboration with the Ministry of Health for technical inputs, the Ministry of Women, Family and Community Development could contribute **logistically and financially**. This training could be implemented using the same structure of the existing **capacity building initiatives** organized by the ministry.(10) The only difference is that this new training intended to train the women to become **more efficient caregivers** at home with basic knowledge of proper medication handling and management.

Empowering the children

In addition to women empowerment, we should also educate the children at a young age and emphasize the importance of appropriate medication use throughout the schooling period. As the first step, the Ministry of Education had integrated a topic, namely **Know Your Medicines**, into the Physical and Health Education subject for Standard 1 students.(11) The chapter generally introduces the medications, their uses and benefits, and the correct way to store the medicines to the students.

However, the introductory topic only demonstrates to the students where they should or should not keep the medications. The recommendation

Is to **further elaborate** the chapter on **the rationale for the appropriate storage condition**, perhaps to students at an older age, preferably at 10 to 12 years old. Integration of the elaborated chapter into Physical and Health Education subject or a part of Science subject would be the best options for the ministry. The students should be taught the **consequences** of inappropriate medication storage chemically, physically and therapeutically.

Empowering the general community

Next, let's move to another level of society, that is the community members at large. The Ministry of Communication and Multimedia should work hand-in-hand with the Ministry of Health to cater for this target group of audiences. Ministry of Health will be **the information provider** while the media could act as the **educator, supporter, promoter and supplement**.(12)

Health promotion and education about medication storage at home could be carried out by all media entities, either the government or private, through the conventional mass media or even the emerging social media. For example, in addition to the usual **public service announcement** on obesity, diabetes mellitus, child abuse, dengue and others commonly seen or heard on the television or radio, the message on "where do you keep your cough



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mixture?” should also be aired for the audiences.

Ministry of Communication and Multimedia through the Broadcasting Department should provide more platforms for **talk shows or television or radio interviews**. The experts from the Pharmaceutical Service Division could be the guest and talk about medication storage. The Department should encourage the private agencies to do the same as part of their **corporate social responsibility**. Apart from the broadcasted show on television and radio, it is essential to promote the published **educational articles** in the newspaper. The healthcare professionals in the MOH will be useful in providing relevant information. Last but not least, the **use of social media will help the community**

to access such information more readily.

Conclusion

Some people would think of medication storage is not as critical as other health issues. They might take it for granted. A very experienced physician could treat a patient with the highest skill and prescribe an expensive thermolabile medication. But the question is, will **the treatment remain effective** if the medicine is kept at an inappropriate temperature or near the heat sources at home? This scenario highlights the reason to educate the community on the importance of home medication storage, and this duty is **a shared and an overlapping responsibility** of multiple agencies or ministries.

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