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Policy and practice

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Abstract

Background: The take-back campaign, which focuses on enhancing public awareness, safe medication disposal practices, stakeholder engagement and patient participation was used to promote medication safety in Kuwait.

Aim: To evaluate the effectiveness of the take-back campaign in promoting medication safety in Kuwait.

Methods: The campaign was implemented systematically through several stages of planning, communication and coordination among several stakeholders. This social media campaign encouraged individuals from the participating healthy cities to bring unwanted medications to designated collection centres. Returned medications were categorized based on the British National Formulary and data analysis was conducted using Excel. Consultations were held at the collection sites to increase patient confidence in medication compliance and safety. The medications were sorted and disposed safely.

Results: The take-back campaign lasted 56 hours over a period of one month. It successfully engaged 405 households and collected 1005 kg of medication, comprising 7648 items, over a period 6 working days. Fifty-seven percent of the medications collected through the campaign

originated from the Ministry of Health and 43% from the private sector. Fifty-two percent had expired and 59% were in solid dosage form. Painkillers comprised the largest group (18%) among the returned medications.

Conclusion: The take-back campaign effectively raised awareness about medication safety and provided a safe disposal mechanism for unused and expired medications. This campaign has provided a foundation for future initiatives and contributed significantly to improving medication safety and public health outcomes in Kuwait.

Keywords: medication take-back, medication safety, medication disposal, awareness, take-back campaign, healthy cities, Kuwait

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Introduction

Unsafe medication is a critical global health concern that requires interventions spanning the policy, education and practice domains. The accumulation of medication in households contributes significantly to this global burden, which is further exacerbated by the inappropriate and inaccessible disposal mechanisms in many regions

(1, 2). This problem is especially worrisome in Kuwait, where the constitution guarantees free

healthcare for citizens, amplifying the likelihood of accumulation and potential misuse (3). Vulnerable groups such as children and the elderly are particularly at risk, with large amounts of unused medications at home linked to greater risk of self-medication, overdose and misuse (4).

Globally, policies have been implemented to reduce the accumulation of unused drugs at home, including drug donation programmes and extended shelf life for medications. These programmes have been effective in some countries, contributing to environmental sustainability and reducing medication misuse. An analysis of global medicine donation policies reveals a range of approaches and challenges in aligning with World Health Organization (WHO) guidelines, emphasizing the need for standardized and effective donation practices (5).

Unwanted medications include expired, unused, spilt and contaminated pharmaceutical products, along with drugs, vaccines and sera that are no longer required and need to be disposed of appropriately (6). The WHO recommends that unwanted medications should never be used and should always be considered pharmaceutical waste (7).

To coincide with the 2022 World Patient Safety Day theme, "Medication without Harm, a Multisectoral Initiative" “the take-back campaign” was implemented in Kuwait to address medication safety. This campaign was organized by the Healthy Cities Office of the Ministry of Health in Kuwait.

The Healthy Cities initiative, developed as part of the broader WHO vision, aimed to prioritize health on the agendas of decision-makers and to promote comprehensive local strategies for health protection and sustainable development (8). The Ministry of Health in Kuwait has been actively promoting the adoption and implementation of this initiative, as highlighted by the Healthy Cities Office (9). As a result of these efforts, there are currently 5 accredited healthy cities in Kuwait, with an additional 11 registered cities, representing all 6 governorates in the country. By aligning the take-back campaign with the healthy cities principles, the organizers fostered a comprehensive approach to medication safety, engaging diverse sectors and stakeholders within the community. This initiative demonstrated how a healthy city continuously improves its physical and social environments, expands community resources and enables mutual support for better health outcomes (10). Therefore, the implementation of the healthy cities initiative led to the selection of these cities to spearhead the take-back campaign, enabling them to harness the advantages of intersectoral collaboration, community organization and active participation. By leveraging these core principles, the selected healthy cities were able to maximize the impact of the campaign and effectively engage various sectors and community members.

The take-back campaign aligns with the Sustainable Development Goals (SDGs) adopted by the United Nations, specifically SDG 3, SDG 6 and SDG 12. Indeed, SDG 3 aims to ensure healthy lives and well-being for all, promoting a sustainable society. The campaign addresses SDG 6 by advocating for the availability and sustainable management of water and sanitation by considering the environmental consequences of improper medication disposal (11). It contributes to SDG 12 by promoting the responsible prescribing, dispensing and consumption of medications, along with raising public awareness on the impact of medication waste on the economy and environment (12).

Currently, the Ministry of Health in Kuwait lacks a dedicated collection service for the proper disposal of household medication. The take-back campaign served as a platform to raise public awareness about the dangers of hoarding expired and unused medication at home while providing a safe mechanism for medication disposal. With the involvement of multiple partners, including Dahiya Abdullah Al-Salem Healthy City Office, the Quality and Accreditation Directorate, the medical waste disposal services in the Hotel Services Department, the Drug Inspection Administration, the Healthy Cities Committee, the Environment Public Authority, medical stores, and the College of Pharmacy at Kuwait University, the campaign exemplified the power of intersectoral collaboration in addressing public health issues.

An important foundation of the campaign was its goal of establishing a sustainable mechanism for the safe disposal of medications by the population. Addressing this aspect is important not only from the perspective of patient safety but also in considering the environmental ramifications of inappropriate medication disposal, which can result in pharmaceuticals contaminating our water and soil (13, 14). The Kuwait take-back campaign represents a significant step towards addressing the pressing issue of medication safety and serves as a model that could potentially be replicated in other regions facing similar challenges. The slogan for the 2022 World Patient Safety Day (15), Medication without Harm, actually exemplified this opportunity to actively involve the community in a campaign addressing the issue.

In this study, we aimed to evaluate the impact of the take-back campaign on medication safety in Kuwait. The objectives of the campaign were:

Raise public awareness

The campaign aimed to educate the public about the risks and hazards associated with hoarding expired and unused medications at home, emphasizing the potential for medication errors and drug-related harm.

Promote safe disposal practices

The campaign sought to provide a safe and controlled mechanism for the disposal of unused and expired medications. This involved organizing secure collection points at primary health care (PHC) centres, where individuals could safely dispose of their unwanted medications on designated collection days.

Enhance stakeholder engagement

Collaborative partnerships with various health and environmental sectors were pivotal to achieving the campaign's objectives. By engaging these stakeholders, the campaign aimed to leverage their expertise and influence to effectively address the issue.

Empower patient participation

The campaign highlighted the important role of patients and their families in ensuring medication safety. By actively involving them in the safe disposal of medications, the campaign aimed to foster a sense of responsibility and community engagement.

Methodology

The campaign used a systematic approach, encompassing several stages to ensure effective planning and coordination.

Communication was initiated with various stakeholders, including the Central Administration for Primary Health Care, the Drug Inspection Administration, the Medical Waste Treatment Department, the Quality and Accreditation Administration, the Environment Public Authority, the College of Pharmacy at Kuwait University, the World Health Organization Country Office, the Patient Aid Fund, and coordinating committee heads of participating Healthy Cities programmes.

Ethical approval

The campaign was approved by the Ministry of Health in Kuwait and its departments, including agreement with all laws and regulations controlling drugs and securing patients' rights. Consent was obtained from all participants through signed waivers, ensuring voluntary and informed participation.

Implementation sites and population

We identified 14 primary health care (PHC) centres (Al-Shamiya, Dahiya Abdullah Al-Salem, Al-Adailiya, Al-Yarmouk, Al-Dasma, Qurtuba, Al-Surra, Al-Faiha, Jaber Al-Ali, Mubarak Al-Kabeer, Al-Oyoun, Al-Rehab, Sulaibikhat, Al-Da'iya) in the selected healthy cities as implementation sites; these sites were selected to represent all governorates and accounted for approximately 13.6% of all PHCs in Kuwait.

Domains of the campaign

Education and awareness were the primary focus of the campaign. We introduced a comprehensive national media campaign through various channels, including social media, digital content, TV interviews, press releases, printed materials and an official booth at the Ministry of Health's celebration for World Patient Safety Day.

Take-back process

The take-back process was meticulously managed, through official letters, a streamlined process flow, designated contact points at each implementation site, a timeline for the collection process, and comprehensive inventory sheets for the collected items. Special labels were developed for the collection containers to ensure proper identification and safe handling of the medications that were collected.

Informed consent

We obtained written informed consent from those participating in the campaign. This outlined the campaign objectives and assured participants of the confidentiality of any information. Participants were informed that the medications would be disposed of directly, without any right for individuals to claim them back.

Sorting for data entry

A data entry schedule was prepared for post-sorting, comprising: medication status, classification, brand or generic name, source, pharmaceutical form and quantity returned.

Coordination

Coordination with the Ministry of Health helped in the involvement pharmacists from health clinics in the reception and sorting areas and supervision of students while entering the data into the data sheet. Coordination with the College of Pharmacy, Kuwait University, via an academic coordinator from the college helped involve students from years 1 to 7 in the

campaign.

Volunteer training

Training sessions were conducted for the various groups involved in the campaign, including main campaign entities, volunteer pharmacists and student volunteers from the College of Pharmacy. Three lectures were delivered to educate the volunteers on the objectives of the project and the tasks assigned to each group. Additionally, separate WhatsApp groups were created for effective communication and coordination. The training aimed to familiarize volunteers with the campaign, including receiving medications, sorting and classifying them, and entering data for proper disposal. The volunteer training served as a foundational capacity-building endeavour, equipping participants with the knowledge and skills necessary for continuous development and future expansion of the programme.

Participating centres

A table was prepared for the distribution of participating centres based on the suitable participation dates for the supervisors of the healthy cities programme, participating pharmacists, inspectors, and student volunteers.

A social media campaign was developed and implemented in the participating healthy cities to invite people to bring unwanted medications from all members of their households to the collection sites; no home visits were carried out. Specific collection days were announced within the community and 2 locations were designated for participation each day. Medications were collected from 9 am to 1 pm and taken to a specified sorting point in the pharmacy. The welcoming team received the returned medication and obtained informed consent, confirming that the medications could not be retrieved after delivery, and would be safely disposed of by the Ministry of Health's Services Administration, which is responsible for primary care waste disposal through incineration. The returned medication was taken to a specified place in the pharmacy where they were sorted. Medications were placed in appropriate yellow containers for solid, liquid or inhaled materials. Controlled substances were sorted and disposed of with the support of inspectors from the Inspection Administration.

Data entry was conducted by both student and pharmacist volunteers, using Excel for analysis, frequency tables, percentages and graphs. Agreed-upon indicators included weight and type of returned medication waste, sources (government or private), and status (expired or surplus). The financial values of the returned medications was calculated by referencing the drug cost list provided by the Ministry of Health. In cases where the price was unknown, information was obtained from reliable sources on the internet.

Returned medications were categorized into therapeutic classes based on the British National Formulary (https://www.pharmaceuticalpress.com/bnf-publications/) to facilitate analysis. Consultation sessions (medication reconciliation) were provided at all collection sites during the campaign to increase patient understanding of medication compliance and safety. During these sessions, patients were asked to bring all their medication to the consulting room, where the health workers reviewed the items, and any unsafe combinations were identified and further discussed with the patient. This provided an opportunity to check on the way patients were taking their medication and proper advice was given. Sometimes the management plan was revised, giving the patient the advice they needed.

Results

The campaign lasted one month, with the media campaign running throughout the period. Collection was done from 14 to 22 September 2022, spanning 6 working days. Each day, 2 or 3 health centres actively participated in the collection process, operating from 9 am to 1 pm. Throughout the campaign, 9 organisations (and their departments), including internal and external stakeholders, participated in the initiative.

Fourteen primary health care centres participated, and volunteers from the Ministry of Health were involved in the campaign: 14 pharmacists, 14 inspectors from the Drug Inspection Administration, 10 from the Healthy Cities Office, 54 students from the College of Pharmacy at Kuwait University, and 14 participants from the Environment Public Authority.

During the 56 hours of the campaign, 405 households participated and 1005 kg of medication waste was retrieved consisting of over 7648 different items. Painkillers were the most common type of medication returned, accounting for 18% of the total (Table 1). This was followed by gastrointestinal drugs (12%), antibiotics and other anti-infective drugs (11%) and vitamins and dietary supplements (10%). Over half of the items returned during this campaign, 4395 (57%), originated from the Ministry of Health and 3253 (43%) came from the private sector. Expiry dates were recorded, and we found that 52% of items had expired, 24% were used but not expired, and 21% were unused but not expired. No information was available for 3% of the items.

The 4 PHC centres that received the greatest amount of returned medication from the community were Al-Shamiya Health Centre, receiving 15% of the items, followed by Dahiya Abdullah Al-Salem with 13%, Al-Adailiya with 12% and Al-Yarmouk with 9%.

Pills and capsules constituted 59% of the returned items, 16% were in the form of creams/ointments and 25% in other dosage forms. The estimated values of the returned medications was recorded. The total for those items that had expired was 36 129 Kuwaiti dinars and for the unused/unexpired medications the total was 22 194 Kuwaiti dinars.

Discussion

The take-back campaign has proven to be a successful initiative, addressing the need for a safe medication disposal process, although within a limited time frame. The campaign effectively raised awareness about the risks associated with hoarding medications at home and highlighted the importance of intersectoral coordination and collaboration in addressing this issue. The collaboration with the Healthy Cities initiative has proven to be a valuable and sustainable platform for implementing multisectoral actions, including the process of obtaining approvals for the campaign from local governments, while also benefiting from strong community support, trust, and household engagement in actively participating in the campaign.

The campaign covered 14 medication collection sites. There were some differences in the responses, attributable to various factors. It is possible that more effective promotional efforts on platforms like Instagram may have influenced the turnout. For instance, the local announcements on a particular city's Instagram page may have attracted more attention than other cities, leading to a higher number of people at that site. Geography may also have played a role: sites that are more accessible or centrally located would naturally see higher footfall. The scheduling of the collection could have influenced attendance, as polyclinics listed later in the collection schedule may have accumulated visitors who were unable to attend on earlier dates. These observations will be valuable for designing future medication take-back campaigns to be more efficient. By focusing efforts on locations with greater engagement, perhaps influenced by the factors mentioned above, organizers can optimize the reach and success of such campaigns.

The active engagement of 405 households not only demonstrates the community's willingness to contribute but also signifies their heightened awareness of the importance of medication safety and proper disposal practices. The successful return of a substantial amount of medication is indicative of a growing recognition of the potential hazards linked to medication accumulation at home. This increased awareness can drive behaviour change, fostering safer medication practices and mitigating environmental impact (16).

A notable finding from the campaign was that 45% of the returned medications had not expired.

This observation raises concerns about the irrational use of medication, which could be attributed to prescribing or dispensing practices as well as patient behaviour. It emphasizes the importance of understanding both the provider and the user within the context of health care services in Kuwait.

Patient behaviour may indicate a need for health education on various aspects of disease management, including self-limiting diseases, home remedies, self-management, drug side-effects, proper medication use, and using the healthcare delivery system appropriately. Understanding the prescriber's behaviour is equally important in addressing the issue of over-prescription. Factors such as the patient's medical history, resistance to patient requests for unnecessary medication, spending more time to understand the patient's actual problems, and following policies and protocols and treatment guidelines for each disease to standardize care among different doctors can contribute to improving prescribing practices. Educational, managerial and regulatory strategies could be useful in improving medication use and prescribing practices (17, 18).

In the United States of America, effective drug donation programmes like Oklahoma's drug recycling programme and Wyoming's medication donation programme have been successfully implemented to redistribute large volumes of medications (19, 20); the challenges faced in Kuwait are, however, different. In Kuwait, where the healthcare system provides free services, there is a policy that prohibits medication donation by the public. This policy aims to prevent the potential increase in medication waste that could arise if patients stockpile drugs for donation, leading to issues of expired or near-expired medications. Therefore, while drug donation programmes in the United States of America have shown success in reducing waste and enhancing access to medicines, Kuwait has to consider strategies tailored to its own healthcare system and policies to effectively manage any accumulation of medication.

However, it is important to note that, due to the design of the process for returning medications during the campaign, it was not possible to have in-depth discussions about these issues. Since the individuals returning the medications were not always the original users, it was not possible to collect direct information from patients to understand the reasons for not using their medications, and their subsequent accumulation. The only evident reason was in cases where the user had passed away, leaving behind a surplus of medications. Another potential reason could be prescription changes made by the doctor, resulting in unused previously dispensed medications. Exploring additional reasons and mitigation strategies reported in the literature could provide valuable insights for addressing this issue (21, 22).

The issue of free medication may have contributed to the problem, as 57% of the returned

medication originated from the Ministry of Health, including free medication for retirees, who are covered by the Kuwaiti insurance system. This highlights the need for further investigation to better understand the underlying causes of medication waste and to promote more rational and responsible use of medication. By examining the causes, appropriate measures can be implemented to effectively address medication waste.

Our findings vis-à-vis types of returned medication are consistent with those of similar studies conducted worldwide (23,24). We observed that many of the returned medications were categorised as analgesic/anti-inflammatory drugs and antibiotics. Unfortunately, this highlights a concerning trend in medication usage and disposal practices.

In-depth investigation is needed to increase patient compliance with the medication management plan. Emphasis should be on patient education and encouraging active involvement such as asking questions to better understand the proper use of their prescribed medication.

The success of the campaign can be attributed to the strong collaboration among the diverse stakeholders, including government agencies, health care providers, educational institutions, and environmental authorities, with tasks distributed as follows:

Services Department: manages medical waste.

Drug Supervision Department: oversees and regulates drug use.

Pharmaceutical Services Department: dispenses drugs to patients.

Quality Assurance Department: ensures best practices in prescription and patient safety.

Primary Health Care Department: established PHC centres as collection sites.

Environment Public Authority: promotes a healthy environment and enforces environmental protection laws.

Healthy Cities Office: provided a platform for collaboration and facilitated official communications.

Faculty of Pharmacy Sciences: students assisted with data entry for the inventory.

This multisectoral partnership highlights the significance of intersectoral cooperation in tackling complex public health issues effectively. Indeed, involving students from the College of Pharmacy at Kuwait University in the campaign had multiple benefits. Not only did it provide valuable volunteering opportunities for the students, it also helped raise awareness among the next generation of healthcare professionals. By engaging students, the campaign aimed to ensure continuity and sustainability of medication safety practices. It also aimed to cultivate a culture of responsible medication use and disposal among the future healthcare workforce, fostering a long-term impact on public health in Kuwait.

Conclusion

The take-back campaign initiated in Kuwait to mark World Patient Safety Day 2022 has made a substantial contribution to addressing the pressing issue of medication safety. Through its wide reach across 14 healthy cities, the campaign succeeded in raising public awareness about the risks associated with hoarding expired or unused medication at home and offered a viable solution for their safe disposal. Repeating the campaign regularly could maintain and boost awareness about the health and environmental risks resulting from the accumulation of medications in the home.

Adapting best practices programmes into Kuwait’s health management system for medication use could significantly reduce the accumulation of medications at home, and could be a successful model for providing a comprehensive approach to medication safety and setting a precedent for other regions.

The intersectoral collaboration showcased in the campaign undeniably amplified its impact,

demonstrating the power of coordinated action in addressing complex public health issues. The campaign underscored the importance of a patient-centred approach, encouraging the public to actively participate in medication safety practices. The Healthy Cities initiative proved to be an excellent platform for promoting health and building on the remarkable capacity for coordination and community participation where there is multisectoral involvement.

The success of the take-back campaign lays a strong foundation for future initiatives. It provides valuable insights and lessons that can be used to design more robust strategies for medication safety, contributing to enhanced patient safety and improved public health outcomes.

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Approche multisectorielle de la sécurité des médicaments au Koweït à travers la campagne de reprise

Résumé

Contexte : La campagne de reprise, qui met l'accent sur l'amélioration de la sensibilisation du public, les pratiques d'élimination des médicaments sans danger, l'engagement des parties prenantes et la participation des patients, a été utilisée pour promouvoir la sécurité des médicaments au Koweït.

Objectif : Évaluer l'efficacité de la campagne de reprise pour promouvoir la sécurité des médicaments au Koweït.

Méthodes : La campagne a été mise en œuvre de manière systématique à travers plusieurs étapes de planification, de communication et de coordination entre plusieurs parties prenantes.

Cette campagne menée sur les médias sociaux a encouragé les habitants des villes-santé participantes à apporter les médicaments dont ils ne voulaient plus aux centres de collecte désignés. Les produits retournés ont été classés selon le British National Formulary et l'analyse des données a été effectuée à l'aide d'Excel. Des consultations ont été organisées sur les sites de collecte afin d'accroître la confiance des patients en matière d'observance et de sécurité des médicaments. Ces derniers ont été triés et éliminés en toute sécurité.

Résultats : La campagne de reprise a duré 56 heures sur une période d'un mois. Elle a permis de mobiliser 405 ménages et de collecter 1005 kg de médicaments, comprenant 7648 articles, sur une période de six jours ouvrables. Cinquante-sept pour cent des médicaments collectés dans le cadre de la campagne provenaient du ministère de la Santé et 43 % du secteur privé. Cinquante-deux pour cent d'entre eux étaient périmés et 59 % se présentaient sous forme de doses solides. Les antalgiques constituaient le plus grand groupe (18 %) parmi les médicaments retournés.

Conclusion : La campagne de reprise a permis une sensibilisation efficace de la population à la sécurité des médicaments et a fourni un mécanisme d'élimination sans danger pour les médicaments non utilisés et périmés. Cette campagne a constitué une base pour les futures initiatives dans ce domaine et a contribué de manière significative à l'amélioration de la sécurité des médicaments et des résultats en matière de santé publique au Koweït.

WHO EMRO | A multisectoral approach to medication safety in Kuwait using the take-back campaign

: نُفِّذت الحملة على نحو منهجي عبر عدة مراحل من التخطيط والتواصل والتنسيقطرق البحث
بين العديد من أصحاب المصلحة . وشجعت هذه الحملة، التي نُفذت عبر وسائل التواصل
الاجتماعي، الأفراد من المدن الصحية المشاركة على جلب الأدوية غير المرغوب فيها إلى
مراكز تجميع محددة . وصُنفت الأدوية التي أُعيدت إلى فئات استنادًا إلى " الدليل
البريطاني الوطني للأدوية " ، وحُللت البيانات ببرنامج إكسل . وأُجريت مشاورات في مواقع
التجميع لزيادة ثقة المرضى في الالتزام بشأن الأدوية وسلامتها . وصُنفت الأدوية وجرى
التخلص منها بأمان .

: استمرت حملة استرداد الأدوية 56 ساعة على مدى شهر واحد . ونجح البرنامج فيالنتائ ج
إشراك 405 أُسَر معيشية وجمع 1005 كيلوجرامات من الأدوية، تشمل 7648 صنفًا، على مدى 6
أيام عمل . وأشار إلى أن 57% من الأدوية التي جُمعت عبر الحملة من وزارة الصحة، و 43% من
القطاع الخاص . وقد انتهت صلاحية 52% منها، وكان 59% منها في صورة جرعات صلبة . ومثَّلت
مسكنات الألم أكبر مجموعة بين الأدوية المعادة (بنسبة 18%).

: أذكت حملة استرداد الأدوية الوعي بشأن مأمونية الأدوية، ووفَّرت آليةالاستنتاجات
مأمونة للتخلص من الأدوية غير المستخدمة والمنتهية الصلاحية . وقد وضعت هذه الحملة
أساسًا لمبادرات مستقبلية، وساهمت مساهمةً كبيرةً في تحسين السلامة الدوائية ومخرجات
الصحة العامة في الكويت .

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