Rapid monitoring in vaccination campaigns during emergencies: the post-earthquake campaign in Haiti

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Problem The earthquake that struck Haiti in January 2010 caused 1.5 million people to be displaced to temporary camps. The Haitian Ministry of Public Health and Population and global immunization partners developed a plan to deliver vaccines to those residing in these camps. A strategy was needed to determine whether the immunization targets set for the campaign were achieved.

Approach Following the vaccination campaign, staff from the Ministry of Public Health and Population interviewed convenience samples of households – in specific predetermined locations in each of the camps – regarding receipt of the emergency vaccinations. A camp was targeted for "mop-up vaccination" – i.e. repeat mass vaccination – if more than 25% of the children aged 9 months to 7 years in the sample were found not to have received the emergency vaccinations.

Local setting Rapid monitoring was implemented in camps located in the Port-au-Prince metropolitan area. Camps that housed more than 5000 people were monitored first.

Relevant changes By the end of March 2010, 72 (23%) of the 310 vaccinated camps had been monitored. Although 32 (44%) of the monitored camps were targeted for mop-up vaccination, only six of them had received such repeat mass vaccination when checked several weeks after monitoring.

Lessons learnt Rapid monitoring was only marginally beneficial in achieving immunization targets in the temporary camps in Port-au-Prince. More research is needed to evaluate the utility of conventional rapid monitoring, as well as other strategies, during post-disaster vaccination campaigns that involve mobile populations, particularly when there is little capacity to conduct repeat mass vaccination.

Abstracts in عربي, 中文, Français, Русский and Español at the end of each article.

Introduction

The severe earthquake that struck Haiti on 12 January 2010 led to the development of both planned and spontaneous temporary camps that together housed an estimated 1.5 million internally displaced children and adults.[1] To reduce the risk of outbreaks of vaccine-preventable diseases in the temporary camps, Haiti's Ministry of Public Health and Population – in collaboration with the World Health Organization (WHO), the Pan American Health Organization (PAHO), the United Nations Children's Fund and the United States Centers for Disease Control and Prevention – developed a plan for a vaccination campaign that targeted all of the people residing in the temporary camps, regardless of their vaccination histories.[2]

Following a disease-specific risk assessment, three vaccines were recommended for use in the emergency campaign: the diphtheria, tetanus and pertussis (DTP) vaccine for children aged 6 weeks to 7 years; measles and rubella vaccine for children aged 9 months to 7 years; and tetanus and diphtheria vaccine for everyone aged 8 years or older. According to *The Sphere Handbook*, the vaccination of infants and children against measles is one of the most important public health response measures during a humanitarian crisis when less than 90% of the children – or an unknown percentage – have already been vaccinated against measles.[3] In the context of regional initiatives for the elimination of measles and rubella, PAHO recommends using the measles and rubella vaccine in post-disaster campaigns. In post-earthquake Haiti, the Ministry of Public Health and Population decided to target multiple age groups in the camps with either DTP or tetanus and diphtheria vaccine because a diphtheria outbreak had occurred in Haiti in 2009.[4] The emergency campaign started in the Port-au-Prince metropolitan area in February 2010. Vaccinations were provided by teams from the Ministry of Public Health and Population and several of the nongovernmental organizations that were participating in the relief effort.[4]

Problem

Since no specific recommendations currently exist for monitoring post-disaster vaccination campaigns, a strategy was needed to ensure that the immunization targets set for the temporary camps in the Port-au-Prince metropolitan area were achieved. In the Americas, PAHO recommends that rapid monitoring should follow mass measles and rubella vaccination campaigns, as this makes it possible to identify potential gaps in vaccination coverage and to determine whether "mop-up vaccination" – i.e. repeat mass vaccination – should be implemented in targeted geographical locations.[5,6] In non-emergency settings, mop-up vaccination is generally implemented as soon as a single unvaccinated child is identified among a convenience sample of children from 20 households

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located in an area that is considered to be at high risk of poor vaccination coverage. The population of such an area may have difficult access to a health clinic, be underserved by the health service or have a history of low vaccination coverage.[5,6] Similar rapid-monitoring approaches have been implemented in other WHO regions. However, such approaches have generally been applied to stable populations in areas where the risk of poor coverage has already been estimated. In the months that followed the earthquake in Haiti in 2010, the Port-au-Prince metropolitan area did not have either a stable population or one in which the risks of poor coverage could be reasonably estimated. In this article, we present the approach that we used to conduct rapid monitoring in the temporary camps of post-earthquake Haiti and discuss the effectiveness of this approach in achieving the targets that had been set for the emergency vaccination campaign.

Approach

The larger temporary camps – those that each had more than 5000 residents – were targeted first for the vaccination campaign and the same camps were prioritized for rapid monitoring. To facilitate monitoring activities, these camps were divided into sections, each of which had about 2000 households. In each camp section, we recruited a convenience sample at three locations: the area in the section nearest the vaccination post, the centre of the section, and the area in the section that was farthest from the vaccination post. In each of these sections, a minimum of 10 households had to be visited, and eight of them had to include at least one child aged 9 months to 7 years.

In all camps, monitors used a standard paper monitoring form to collect information about the number and age of each visited household's occupants, whether each household member had been vaccinated during the campaign, and, if applicable, the reasons for not participating in the campaign. Participation was assessed using the data recorded on campaign-specific vaccination cards and the statements made either by those who should have been vaccinated or their caregivers. We entered data from the paper monitoring forms into a database created in Excel (Microsoft, Redmond, United States of America) and reviewed the results weekly, by camp and age group. For each camp, we compared our monitoring results with the administrative coverage that was determined – by the Ministry of Public Health and Population – by dividing the number of doses of vaccine administered in the camp during the campaign by the number of age-eligible individuals in the camp. The latter number was based on the estimated number of people in the camp and the assumption that the age distribution of the camp's population was similar to that of the whole population of Haiti.

Following a review of the monitoring results for each age group, camps in which more than 25% of the children aged 9 months to 7 years in the convenience sample had not been vaccinated in the campaign were targeted for mop-up vaccination. The threshold of 25% used to determine the need for mop-up vaccination was based on a review of the initial monitoring results – which suggested substantial coverage gaps in a large number of camps – and the anticipated availability of vaccination teams in the weeks following the main campaign. This threshold was based on reported campaign participation among children aged 9 months to 7 years because children in this age group were considered at greatest risk of infection if the measles virus were imported into Haiti. However, mop-up vaccination provided another opportunity for all camp residents to receive the vaccines recommended for their age group. The campaign-specific vaccination cards frequently indicated that a camp resident had been vaccinated without specifying the vaccine or vaccines that the resident had received. We therefore simply assumed that each camp resident who claimed to have participated in the campaign had received all of the vaccines that were appropriate for a resident of his or her age. Monitoring results from the other age groups – including camp residents who were at least 8 years old – were used to assess and improve social mobilization or other campaign implementation issues, such as the time and location of vaccine delivery.

Relevant changes

By 31 March 2010, the campaign had been implemented in 310 temporary camps. Rapid monitoring had been conducted in 72 (23%) of these camps, including 39 large camps that had more than 5000 residents each. The mean interval between campaign completion and monitoring was 8 days (range: 1–17) and 4811 households (31 to 220 per camp) had been visited by the monitors. The mean number of residents in each visited household was 7.4 (range: 1–35).

Monitoring results varied greatly by camp. Overall, 32 (44%) of the 72 monitored camps were targeted for mop-up vaccination (Table 1). Among these 32 camps, 14 (44%) had administrative coverage among children aged 9 months to 7 years that was greater than 75%. This included seven camps with administrative coverage greater than 100%. According to our convenience samples, campaign participation was similar in each of the three camp locations visited (data not shown). However, participation varied with age group and was relatively low among camp residents who were aged 8 years or older. The percentage of residents in this age group who were not vaccinated in the campaign ranged from 1% to 86% across the 72 monitored camps. Among all age groups, the most frequently reported reason for not being vaccinated during the campaign was being away from the camp at the time of vaccine delivery. This was the reason given by 44% of all unvaccinated residents who provided a reason for not participating in the campaign. Of the unvaccinated children aged 9 months to 7 years, 42% were reported to be away from the camp at the time of vaccine delivery, 18% had caregivers who were unaware of the campaign, and 3% were members of families who had not been living in the camp at the time of the campaign.

Mop-up vaccination was conducted in only six (19%) of the 32 camps targeted for such vaccination and took place about 2–4 weeks after monitoring ended (F Lacapère, unpublished data, 2010). All of the campaign activities, including mop-up vaccination, were terminated in May 2010.[3] Time and resources were then allocated to a second phase of the emergency vaccination plan, which aimed to provide vaccinations to all residents in the earthquake-impacted area. The second phase was implemented during the recovery stage of the humanitarian response to the earthquake, after the population in the area affected by the earthquake had stabilized.

Lessons learnt

Despite the complex nature of the post-earthquake environment in Haiti, we developed and implemented a rapid monitoring approach for the mass vaccination campaign that was used in 72 temporary camps. We identified gaps in campaign quality as well as limitations in interpreting administrative coverage. Rapid monitoring was originally developed for use during vaccination campaigns in relatively stable community settings with little – or, at least, no major – immigration or emigration. In contrast, the target population for the post-earthquake campaign in Haiti was constantly changing and, at the camp-level, almost impossible to quantify accurately. There were daily changes in camp populations, new camps appearing, older camps disappearing, and displaced people moving from camp to camp. Inaccuracies in the estimates of the numbers of residents in the camps probably account for some of the differences between our rapid-monitoring results – which were based on household visits – and the estimates of administrative coverage.

Rapid monitoring had only a slightly beneficial impact on our efforts to achieve the immunization targets set for the campaign in the Port-au-Prince metropolitan area, partially because too few vaccination teams were available for the mop-up vaccination (Box 1). Although the threshold that we used as an indicator of the need for mop-up vaccination – over 25% unvaccinated children in the convenience sample – was substantially higher than the corresponding value of over 5% recommended by PAHO for mass measles and rubella vaccination campaigns, we still found that almost half of the monitored camps needed mop-up vaccination. If we assume that the unmonitored camps were similar to the monitored, more than 200 camps would have been targeted for mop-up vaccination once all the camps had been monitored. As a result of the shortage of vaccination teams, the frequent movement of people from camp to camp and the identification of camps that had not been recorded when the campaign began, this level of mop-up vaccination was determined to be impractical.

After the earthquake, the monthly numbers of humanitarian workers travelling to Haiti from countries where measles remained endemic gradually increased. This elevated the risk that the measles virus would be introduced and this elevated risk – along with the identification of several suspected diphtheria cases in Haiti – led the Ministry of Public Health and Population to halt the emergency vaccination campaign that was focused on the temporary camps. The camp-based campaign was replaced with a more wide-ranging campaign that covered all of the area affected by the earthquake.[4]

Rapid monitoring is typically conducted in communities or neighbourhoods that are known to be at high risk of low vaccination coverage.[5,6] The large population movements in post-earthquake Haiti made it impossible to identify areas of low coverage with any accuracy. Therefore, at the start of the emergency vaccination campaign, we assumed that there would be problems in achieving immunization targets in all communities in Port-au-Prince and so planned for rapid monitoring in every camp.[7] For our rapid monitoring approach, we divided the large camps into smaller sections and ensured that data on campaign participation were collected consistently from three different locations in each camp section. This provided a standard protocol that was easily adapted to differences in camp size and organization and captured information on all age groups. Additionally, the approach allowed us to determine that many children had not been vaccinated during the campaign – generally because their caregivers were unaware of the campaign or were not present at the time of vaccine delivery. Within a camp, the distance or location of households in relation to the point of vaccine delivery did not appear to have affected campaign participation.

Our approach would also have allowed Haiti's Ministry of Public Health and Population to adjust the threshold for mop-up vaccination – or to address observed coverage gaps in additional age groups – as the situation evolved. The threshold that was initially set for mop-

Table 1. **Post-disaster emergency vaccination campaign, Port-au-Prince metropolitan area, Haiti, 2 February to 30 March, 2010**

Commune[a]	Administrative coverage[b] (%)	No. of camps			
		Vaccinated	Monitored	Targeted for mop-up[c]	Provided mop-up vaccination
Carrefour	2.9–405.1	90	10	2	0
Cité Soleil	16.9–345.7	16	3	2	0
Croix des Bouquets	43.0–95.8	7	3	1	0
Delmas	10.8–162.1	51	22	10	2
Pétion-Ville	15.0–318.2	43	10	3	0
Port-au-Prince	5.7–514.3	103	24	15	4
Total	2.9–514.3	310	72	32	6

[a] A commune is a geopolitical unit in Haiti. The Port-au-Prince metropolitan area comprises seven communes. One of the seven – Tabarre – is not shown here because rapid monitoring was not implemented there during the post-disaster vaccination campaign.
[b] For the measles and rubella vaccine. Calculated by dividing the number of doses of vaccine administered to children aged 9 months to 7 years in a camp by the number of children of the same age group in the camp – assumed to be 15.7% of the estimated camp population – and then multiplying by 100.
[c] A camp was targeted for mop-up vaccination if, according to vaccination cards and caregiver recall, more than 25% of the children aged 9 months to 7 years included in the convenience sample used for rapid monitoring had not participated in the campaign.

Box 1. **Summary of main lessons learnt**

- In the post-disaster emergency vaccination campaign in the temporary camps in Port-au-Prince, Haiti, rapid monitoring was only marginally beneficial for achieving immunization targets.
- More research is needed to assess the utility of conventional rapid monitoring during post-disaster vaccination campaigns, especially when targeting displaced and mobile populations.
- Other approaches, with greater flexibility and capacity to adapt to the evolving nature of the emergency, may be necessary to achieve immunization targets in future post-disaster campaigns.

up vaccination was based on feasibility and programmatic issues. However, if monitors had identified only a few unvaccinated children later in the campaign – or additional vaccination teams had become available – this threshold could easily have been lowered.

Achieving high measles vaccination coverage remains one of the most important public health measures to protect children following a natural disaster, such as the Haitian earthquake.[3] Post-disaster vaccination campaigns were implemented in Aceh province, Indonesia, following the 2004 tsunami (M Brennan and R Nandy, unpublished data, 2005)[8] and in Bihar province, India, after flooding of the Kosi River in 2008.[9] According to coverage surveys conducted after completion of these post-disaster campaigns, the estimated coverage for measles vaccination reached 72% in Aceh[8] and 75% in Bihar.[9] Although we are unable to assess the role of rapid monitoring in achieving these coverage estimates, each of the post-disaster campaigns involved similar challenges. These challenges included a highly mobile population, limited information on the location of the target population, and shortages in the health workforce to assist with campaign implementation. These challenges probably limited the usefulness of rapid monitoring during the post-earthquake campaign in Haiti. Many aspects of the planning and implementing of post-disaster vaccination campaigns – including the role of rapid monitoring – have recently been described in a report prepared by WHO's Scientific Advisory Group of Experts for the Working Group on Vaccination in Humanitarian Emergencies.[10]

Conclusion

Rapid monitoring of vaccination campaigns can provide important decision-making information but could have limitations in achieving vaccination targets in certain post-disaster settings. In Haiti, the large number of camps, continued population migration and the small number of vaccination teams reduced the usefulness of such monitoring. Given the unpredictable nature of post-disaster health emergencies, more research is needed to evaluate the utility of rapid monitoring in these settings. Other approaches for achieving vaccination targets could be required. Global immunization organizations and international humanitarian agencies should develop policy recommendations for achieving targets in vaccination campaigns during complex emergencies – ideally before the next disaster-related health emergency. ■

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ملخص

الرصد السريع في حملات التطعيم أثناء الطوارئ: حملة ما بعد الزلزال في هايتي

المشكلة أدى الزلزال الذي ضرب هايتي في كانون الثاني/ يناير 2010 إلى تشريد حوالي 1.5 مليون شخص في مخيمات مؤقتة. وقامت وزارة الصحة العمومية والسكان في هايتي وشركاء التمنيع العالميين بوضع خطة لإيتاء اللقاحات لسكان هذه المخيمات. وتطلب الأمر استراتيجية لتحديد ما إذا كانت أهداف التمنيع الموضوعة للحملة قد تحققت.

الأسلوب عقب حملة التطعيم، قام فريق من وزارة الصحة العمومية والسكان بعقد مقابلات مع عينات ملاءمة من الأسر المعيشية – في مواقع معينة محددة سلفاً في كل مخيم – فيما يتعلق بتلقي تطعيمات الطوارئ. وكان يتم استهداف المخيم من أجل "تطعيم الاجتثاث" – أي التطعيم الجماعي المتكرر – إذا تبين عدم تلقي أكثر من 25 ٪ من الأطفال الذين تتراوح أعمارهم من 9 أشهر إلى 7 سنوات في العينة تطعيمات الطوارئ.

المواقع المحلية تم تنفيذ الرصد السريع في المخيمات الواقعة في المنطقة الحضرية في بورت أو برينس. وتم رصد المخيمات التي ضمت أكثر من 5000 شخص أولاً.

التغيّرات ذات الصلة بحلول نهاية آذار/ مارس 2010، تم رصد 72 (23.2 ٪) مخيماً من بين 310 مخيماً خضعت للتطعيم. وعلى الرغم من استهداف 32 (44 ٪) مخيماً من المخيمات التي خضعت للرصد من أجل تطعيم الاجتثاث، لم يتلق سوى ستة مخيمات منها التطعيم الجماعي المتكرر عند فحصها بعد الرصد بعدة أسابيع.

الدروس المستفادة كان الرصد السريع مفيداً فقط بشكل هامشي في تحقيق أهداف التمنيع في المخيمات المؤقتة في بورت أو برينس. ويجب إجراء مزيد من البحث لتقييم فائدة الرصد السريع التقليدي، بالإضافة إلى غيره من الاستراتيجيات، أثناء حملات التطعيم بعد الكوارث التي تشتمل على سكان متنقلين، ولاسيما عند انخفاض القدرة على إجراء تطعيم جماعي متكرر.

摘要

突发事件期间快速监测疫苗接种活动：海地的地震后活动

问题 2010 年 1 月海地遭受地震灾害，造成 1500 万人栖身于临时营地。海地公共卫生与人口部以及全球免疫合作伙伴制定计划向这些营地的居住者发放疫苗。确定是否实现了为该计划设定的免疫目标需要一项策略。

方法 在疫苗接种活动之后，公共卫生和人口部的工作人员对方便抽样的样本家庭（在每个营地特定的的预先确定位置）进行了访谈，了解接受紧急接种疫苗的相关情况。如果在样本中发现在 9 个月到 7 岁大的儿童中超过 25% 的儿童没有接受紧急疫苗接种，就要对营地进行“扫荡式免疫接种”，即重复大规模疫苗接种。

当地状况 对位于太子港市区的难民营实施快速监测。首先对拥有超过5000 人的营地进行监测。

相关变化 到 2010 年 3 月底，310 个接过种的营地有 72（23.2%）个经过了监测。尽管有 32（44%）个被监测的营地要进行扫荡式免疫接种，其中只有六个营地

在监测后数周进行检查时接受了这样的重复大规模疫苗接种。

经验教训 在实现太子港临时营地免疫目标方面，快速监测收效不大。对于涉及流动人口的灾后疫苗接种活动，尤其是在没有能力进行重复大规模疫苗接种的时候，需要更多的研究来评估这种活动中传统快速监测以及其他策略的效用。

Résumé

Suivi rapide des campagnes de vaccination pendant les situations d'urgence: la campagne post-séisme en Haïti

Problème Le séisme qui a frappé Haïti en janvier 2010 a causé le déplacement de 1,5 million de personnes dans des camps temporaires. Le ministère de la Santé publique et de la Population d'Haïti et les partenaires mondiaux de vaccination ont élaboré un plan pour fournir des vaccins aux personnes qui résident dans ces camps. Une stratégie a été nécessaire pour déterminer si les objectifs de vaccination définis pour la campagne ont été atteints.

Approche Après la campagne de vaccination, le personnel du ministère de la Santé publique et de la Population a interrogé un échantillon représentatif de ménages – dans des lieux prédéterminés spécifiques dans chacun des camps – en ce qui concernait la réception des vaccinations d'urgence. Un camp faisait l'objet d'une «campagne de vaccination de ratissage» – c'est-à-dire une vaccination de masse répétée – si plus de 25% des enfants âgés de 9 mois à 7 ans dans l'échantillon n'avaient pas reçu les vaccinations d'urgence.

Environnement local Le suivi rapide a été mis en œuvre dans les camps situés dans la zone métropolitaine de Port-au-Prince. Les camps accueillant plus de 5 000 personnes étaient surveillés en premier.

Changements significatifs À la fin du mois de mars 2010, 72 (23,2%) des 310 camps vaccinés avaient été surveillés. Bien que 32 (44%) des camps surveillés aient fait l'objet d'une campagne de ratissage, seulement 6 d'entre eux avaient bénéficié d'une telle vaccination de masse répétée lors du contrôle effectué plusieurs semaines après le suivi.

Leçons tirées Le suivi rapide n'a été que peu bénéfique dans la réalisation des objectifs de vaccination dans les camps temporaires de Port-au-Prince. Il est nécessaire d'effectuer plus de recherches pour évaluer l'utilité du suivi rapide traditionnel, ainsi que de mettre en place d'autres stratégies, pendant les campagnes de vaccination post-catastrophe, qui impliquent des populations mobiles, en particulier lorsqu'il y a peu de capacité pour mener à bien des vaccinations de masse répétées.

Резюме

Оперативный мониторинг во время кампаний по вакцинации в чрезвычайных ситуациях: опыт в Гаити после землетрясения

Проблема В результате землетрясения на Гаити в январе 2010 года 1,5 миллиона человек было размещено в лагерях временного проживания. Министерство здравоохранения и населения Гаити и глобальные партнеры в области иммунизации разработали план по доставке вакцин пострадавшим, размещенным в этих лагерях. Необходимо было выработать стратегию, которая позволила бы определить, достигнуты ли были цели иммунизации, поставленные перед этой кампанией.

Подход После кампании по вакцинации сотрудниками Министерства здравоохранения и населения проводился опрос нерепрезентативных выборок домохозяйств – в конкретных, предварительно установленных местах в каждом лагере – о прохождении экстренной вакцинации. "Подчищающая вакцинация" – т.е. повторная массовая вакцинация – планировалась в лагерях, где обнаруживалось, что более 25% детей в возрасте от 9 месяцев до 7 лет в выборке не проходили экстренную вакцинацию.

Местные условия Оперативный мониторинг осуществлялся в лагерях, расположенных в окрестностях Порт-о-Пренса. Сначала проводился мониторинг лагерей, вмещавших более 5 000 человек.

Осуществленные перемены К концу марта 2010 года был проведен мониторинг 72 (23,2%) из 310 лагерей, прошедших вакцинацию. Несмотря на то, что 32 (44%) проверенных лагеря были определены на получение подчищающей вакцинации, только шесть из них прошли подобную повторную массовую вакцинацию, что выяснилось при проверке, проведенной несколько недель спустя после мониторинга.

Выводы Оперативный мониторинг принес лишь незначительную выгоду в достижении целей по проведению вакцинации на территории лагерей временного проживания в городе Порт-о-Пренс. Необходимо провести дополнительные исследования для оценки целесообразности традиционного оперативного мониторинга и других стратегий, использующихся для кампаний по проведению вакцинации в период после стихийных бедствий среди мобильных групп населения, особенно в случае ограниченных возможностей по проведению повторных массовых вакцинаций.

Resumen

Vigilancia rápida de las campañas de vacunación durante emergencias: la campaña tras el terremoto en Haití

Situación El terremoto que asoló Haití en enero de 2010 provocó el desplazamiento de 1,5 millones de personas a campamentos provisionales. El Ministro de Sanidad Pública y Población haitiano y las partes implicadas internacionales desarrollaron un plan para el reparto de vacunas entre los residentes de los campamentos. Fue necesario desarrollar una estrategia a fin de determinar si se habían logrado los objetivos de inmunización de la campaña.

Enfoque Siguiendo la campaña de vacunación, el personal del Ministerio de Salud Pública y Población entrevistó muestras por conveniencia de hogares en emplazamientos predeterminados específicos de cada uno de los campamentos sobre la recepción de las vacunas de emergencia. Se seleccionaron los campamentos en los que más del 25 % de los niños con edades comprendidas entre 9 meses y 7 años de la muestra no habían recibido las vacunas de emergencia para una inmunización «de barrido», esto es, una vacunación masiva repetida.

Marco regional La vigilancia rápida se puso en marcha en campamentos

situados en la zona metropolitana de Port-au-Prince. En primer lugar se supervisaron los campamentos que acogían a más de 5000 personas.

Cambios importantes A finales de marzo de 2012 se habían vigilado 72 (23,2 %) de los 310 campamentos vacunados. Aunque se habían seleccionado 32 (44 %) de los campamentos supervisados para la inmunización «de barrido», solo seis de ellos habían recibido la vacunación masiva cuando se efectuó un control varias semanas tras la supervisión.

Lecciones aprendidas La supervisión rápida únicamente ofreció ventajas marginales en la consecución de los objetivos de inmunización en los campamentos temporales de Port-au-Prince. Es necesario llevar a cabo más investigaciones para evaluar la utilidad de la vigilancia rápida tradicional y otras estrategias durante las campañas de vacunación tras desastres en los que se vean involucradas poblaciones móviles, en particular, en los casos en los que haya poca capacidad para efectuar inmunizaciones masivas repetidas.

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