Birth registration and access to health care: an assessment of Ghana's campaign success

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Problem Birth registration remains far from complete in many developing countries. This was true of Ghana before a major registration campaign was undertaken.

Approach This study, based on survey data, assesses the results of a registration campaign initiated in 2004–2005 in Ghana. Key strategies included: extending the legal period for free registration of infants; incorporating registration in child health promotion weeks; training community health workers to register births; using community registration volunteers; registering children during celebrations, and piloting community population registers. This paper discusses the contribution of these strategies to the increase in registration rates and shows the degree of association between birth registration and various health-care access indicators and family characteristics.

Local setting The Ghana Births and Deaths Registry worked together with international organizations, mainly Plan International and the United Nations Children's Fund, to implement the birth registration campaign.

Relevant changes Unlike many other sub-Saharan African countries, Ghana saw a substantial rise in registration rates over the campaign period. Campaign strategies improved accessibility and shortened distance to registration centres. Survey data show that the registration rate for children younger than 5 years rose from 44% in 2003 to 71% in 2008.

Lessons learnt Incorporation of birth registration into community health care, health campaigns and mobile registration activities can reduce the indirect costs of birth registration, especially in poorer communities, and yield substantial increases in registration rates. The link between the health sector and registration activities should be strengthened further and the use of community population registers expanded.

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

Background

In many developing countries today, the births of a substantial share of children go unregistered. According to survey-based estimates, between 2005 and 2008, the share of children younger than 5 years whose births were registered was 7%, 41%, 60% and 88% in Ethiopia, India, Kenya and Viet Nam, respectively.[1]

Registration of vital events is essential for accurately calculating birth and death rates and for assessing the level of infant mortality. It has other advantages. For example, when linked with medical records, birth registration systems can alert health-care providers to the presence of children needing vaccination.[2] Accurate information on births and deaths has been stressed as important for tracking progress towards the health-related Millennium Development Goals.[3,4] The importance of birth registration has also been emphasized from a child rights perspective.[2,5]

For slightly over a decade, children's organizations, in particular the United Nations Children's Fund (UNICEF) and Plan International, have been involved in campaigns promoting the registration of births in developing countries. In the context of sub-Saharan Africa, national action plans for registration were developed in 24 countries in central and western Africa in 2004.[6] This article reports on the experience of Ghana in raising birth registration rates from 2004 to 2008. Survey data, namely from the Demographic and Health Surveys (DHS)[7,8] and the Multiple Indicator Cluster Surveys (MICS),[9] are combined with observations from the field.

According to DHS data, registration rates for children younger than 5 years in Ghana increased from 44 to 71% between 2003 and 2008.[10] In 30 other sub-Saharan African countries with survey data for a similar period, progress in the registration of children younger than 5 years was slow. In these countries, the average registration rate was 53% in 1999–2003[11] and 49% in 2004–2010,[1] with only a few countries making notable progress. Therefore, Ghana stands out as a success story. This article discusses the different approaches taken to increase registration rates and focuses on the role played by the health system.

Birth registration and campaign strategies

In Ghana, Birth registration is compulsory under the Registration of Births and Deaths Act (1965). Ghana has 10 administrative regions and each of the country's 170 registration districts has at least one registry office. However, the absence of registration offices in rural areas and a shortage of registration staff have hampered registration.[12] The registration of births that occur in health facilities begins with the issuance of a medical certificate or a health card.[13] Formally, parents are required to present the health card when they visit a registry to register a birth. Birth registration offices are often located within the premises or in the proximity of public health facilities, although not all health facilities have a registration office. There has also been an expectation that births take place in health facilities, but according to DHS data, only approximately half do.

Registering a child generally involves both direct costs (fees) and indirect costs (time off from work, travel expenses). The indirect costs in particular affect poorer areas disproportionately. According to the 2006 MICS, the most common

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(*Submitted: 14 August 2012 – Revised version received: 28 February 2013 – Accepted: 7 March 2013 – Published online: 25 April 2013*)

Table 1. **Fraction of children younger than 5 years whose births were registered, by year of birth, Ghana, 2003, 2006 and 2008**

Age (years)	DHS 2003[a] (n = 3442)		MICS 2006[b] (n = 3431)		DHS 2008[c] (n = 2555)	
	Born in	Births registered (%)[d]	Born in	Births registered (%)[d]	Born in	Births registered (%)[d]
0	2002/03	37	2005/06	45	2007/08	66
1	2001/02	47	2004/05	60	2006/07	79
2	2000/01	48	2003/04	58	2005/06	76
3	1999/00	51	2002/03	51	2004/05	83
4	1998/99	50	2001/02	47	2003/04	76

DHS, Demographic and Health Survey; MICS, Multiple Indicator Cluster Survey.
[a] Conducted between July and October.
[b] Conducted in July.
[c] Conducted between September and November.
[d] Sample weighted by weights for mothers.
Note: Information on whether the birth of a child has been registered is only available for children younger than 5 years. In 2003 (DHS) and 2006 (MICS), individuals were asked whether the birth of the child was registered with the government or a local authority. In 2006, for children whose births were reported to have been registered, this was followed up with a question on whether the child had a birth certificate (options: "yes, seen" and "yes, not seen"). In 2008 (DHS), individuals were asked whether the birth was registered and the person had a certificate (55% of children aged less than 5 years), or whether the birth was registered but the person did not hold a certificate (16% of children aged less than 5 years), or whether the person had neither a certificate nor birth registration (24% of children aged less than 5 years). The figures in the table capture a binary variable for whether the birth was registered or not, regardless of the presence of a certificate. This is consistent with how the United Nations Children's Fund reports statistics on birth registration.

reasons for not registering a child were the high cost of registration (31.9%), distance to registration locations (21%) and a lack of awareness that children should be registered (20%). Birth registration campaign activity in Ghana has focused on such factors.

To incentivize people to register a child, beginning in mid-2003 the legal period for free registration of infants was extended from 21 days to 1 year.[12,13] Late registration carries a fee (equivalent to about 1.1 United States dollars).[14]

In 2004–2005 other campaign activities began, including intensive public education. The first annual Birth Registration Day was held in September 2004 and 10 000 children were registered across the country. Since 2004, the Births and Deaths Registry has participated in annual child health promotion weeks, organized by the Ghana Health Service in May and November of each year. Community health workers were trained to register births.[12,13] These workers offer services in community health clinics and also on a mobile basis.[10] Mobile community registration volunteers were introduced to register births, especially in remote areas.[12,13,15] Community population registers, which in the long term are considered key to raising registration coverage and reducing the hidden costs of registration, were piloted in 21 remote communities in four regions.[12]

Table 1 shows the trend in the rate of birth registration among children younger than 5 years in Ghana based on data from the DHS for 2003 and 2008 and from the MICS for 2006. These surveys show different registration rates for children born in the same year perhaps because of age differences and overlaps. Differences in the precise questions posed may also explain some of the differences. Nevertheless, it is clear that birth registration rates increased significantly for children born in, or after 2003–2004, in tandem with the intensification of the campaign activities. The figures also suggest that campaign activities became more effective from 2006 to 2008 and that delayed registration took place over that period.

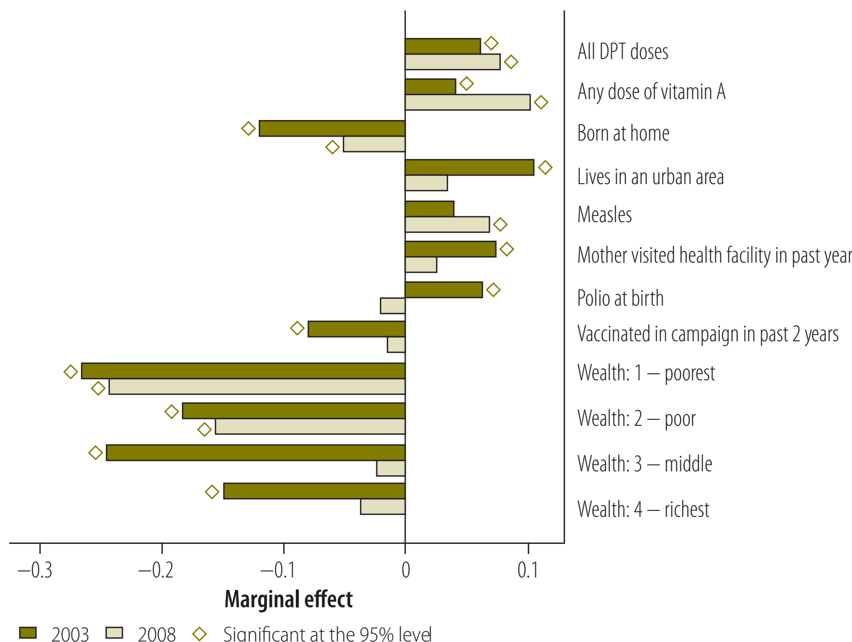
Role of the health system

One campaign strategy has been to tie registration more closely to the provision of health care. For instance, midwives and health workers were instructed to register children during child health campaigns.[12] According to UNICEF,[2] "immunization efforts provide an opportunity for health-care workers to be alerted to the absence of a health card or birth certificate, leading vaccination to be viewed as a potential point of entry to registration for a child". Another study suggests[16] that in Ghana "the collaboration between the civil registration office and Ghana Health Service, where volunteers and registration officers accompany community health nurses to the maternal and child welfare clinics in the communities to register infants, has the most direct impact on birth registration coverage". The fact that registration offices are often located within health facilities or close to them implies a direct connection between health care and registration.

As discussed by Addo,[13] a functioning interface from registration offices to health-care providers was still a task for the future in Ghana in 2009. Therefore, the registration system may not have been used yet for the planning of health services between 2004 and 2008. Fig. 1 plots the association between different indicators of access to health-care and birth registration, as well as between registration and household wealth quintile and urban residence. Through a logistic regression model we tried to isolate the effect of specific factors by controlling for each health-care access indicator and a range of family characteristics. We conducted separate estimates using DHS data for all children who were younger than 5 years in 2003 (those born in the pre-campaign period) and in 2008 (those born during the campaign). The health access variables we employed depict access to health care at birth, access to institutionalized health care, access to immunizations and participation in vaccination campaigns.

The analysis indicates that between 2003 and 2008, access to health care at birth (i.e. birth in a health facility) became less important as a determinant for registration. In 2003, the likelihood of having been registered was 12 percentage points lower for a child born at home than for one born in a health facility; in 2008, this likelihood was only 5 percentage points lower. In 2003, children who received polio vaccine at birth

Fig. 1. **Association between access to health care, household wealth quintile and urban/rural residence status on the probability of birth registration in 2003 ($n = 3212$) and 2008 ($n = 2490$), Ghana**



DPT, diphtheria, tetanus and pertussis.
Note: The figure shows the estimated contribution of specific factors to the likelihood of registration. The results are based on a logistic regression model that predicts the probability of birth registration. The *x*-axis represents the marginal effects calculated from the coefficients of the regression model. For instance, in 2003, children born at home were 12 percentage points (0.12) less likely to be registered than those born in health-care facilities. The model takes the following form: $\text{Prob}(R_i = 1/X) = F(\alpha + X'\beta + A'\delta + C'\gamma + \varepsilon_i)$, where F refers to a logistic function, R_i is a binary variable taking a value of 1 when the child's birth has been registered and a value of 0 otherwise, and the subscript i refers to a child. X refers to a set of explanatory variables for the characteristics of the child, mother and household, such as education, region and ethnicity, and it also represents health and wealth variables and urban residence. A refers to a set of binary age variables (dummies) for the child and C to a set of cohort (birth year) dummies. β, δ and γ are the estimated sets of coefficient for these variables. Standard errors are clustered by birth year. The sample is weighted by weights for mothers. Although a logit specification was chosen, the results would be similar with a probit model.
The health variables are binary variables: born at home or in a health facility; receipt of polio vaccine at birth (yes/no); receipt of all DPT doses versus none or some DPT doses; receipt of any dose of vitamin A (yes/no); receipt of measles vaccine (yes/no); maternal visit to a health facility (yes/no); participation in vaccination campaign (yes/no).
The wealth quintile index is based on a range of variables pertaining to household assets, access to water and sanitation, and materials used in the construction of housing. It is a categorical variable taking a value between 1 and 5. The reference wealth quintile is the richest (5) and the reference group for residence is rural residence, so the estimated effects should be interpreted in relation to these categories.
Source: Demographic and Health Survey, 2003 and 2008.[7,8]

were 6 percentage points more likely to have been registered than those who did not, a difference that was statistically significant; in 2008, the difference was no longer significant. Regarding institutionalized care, in 2003 children whose mothers had visited a health facility within the last year were 7 percentage points more likely to have been registered than those whose mothers had not done so. This may be because of the ease of accessing registration facilities during health centre visits due to their proximity, or because the visit alerted health officials to the absence of a birth certificate. However, in 2008 those children whose mothers had accessed a health facility were no longer more likely to have been registered. On the other hand, having been vaccinated showed an association with registration in both years, and this association was even stronger in 2008. A significant positive association between registration and the receipt of all doses of the diphtheria, tetanus and pertussis (DPT) vaccine and vitamin A was present both in 2003 and 2008. The connection with vitamin A became stronger in 2008 and that with the receipt of measles also was statistically significantly positive. Birth registration has been incorporated into vaccination campaigns in Ghana since 2004. In 2003, children who participated in a vaccination campaign were 8 percentage points less likely to have been registered than those who did not. However, by 2008 the difference is no longer statistically significant, which suggests that children participating in vaccination campaigns were no longer disadvantaged with respect to registration. By 2008, rural children were no longer at a disadvantage, as they had been in 2003, with respect to urban children in terms of birth registration, and socioeconomic status played a smaller role in the likelihood of registration in 2008.

Discussion

This study shows that the birth registration campaign initiated in Ghana in 2004 substantially increased registration rates among children younger than 5 years. It reduced inequalities in registration as a function of socioeconomic status and place of residence (urban versus rural) and weakened the association between birth registration and access to health care at birth or subsequent access to health centres. However, vaccinated children were more likely to have been registered both before and during the campaign period. Vaccination in turn could take place not only during health centre visits, but also through community health workers and through mobile services and outreach health activities.

The key policy lessons are summarized in Box 1. The findings of this study show that the incorporation of birth registration into community health care and child health campaigns, together with mobile registration activities in remote areas, succeeded in raising registration rates. However, full registration coverage has not been reached and progress has slowed down, with an estimated 65% of births registered in 2011, a rate similar to the 2008 rate for children younger than one year.[15] Hence, efforts should be made to target the poorest households, which are less likely than more prosperous households to have access to vaccination and health centres. It may not be possible to rely on mobile strategies and outreach activities as permanent, long-term solutions. In more remote areas, the promotion of community population registers is seen as a key strategy. Additionally, health facilities could be even more strongly connected to birth registration by including regis-

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

- The incorporation of birth registration into community health care, health campaigns and mobile registration activities have increased birth registration in Ghana by reducing the indirect costs of birth registration, especially in poorer communities.
- The links between the health sector and birth registration should be strengthened further, ideally by locating registration facilities within all health facilities.
- In more remote areas, local community population registers should be actively encouraged to expand registration coverage.

tration facilities in all health centres and mandating that health workers register births. Not all health facilities in Ghana have incorporated registration facilities, but a large proportion of children still come into contact with health facilities for basic health-care needs. Thus, more remains to be done to connect health facilities with the registration process. ■

Acknowledgements
The authors thank Emelia Allen from UNICEF Ghana and Simon Heap (formerly at Plan International) for helpful background information and discussion.

Competing interests: None declared.

ملخص

تسجيل المواليد والحصول على الرعاية الصحية: تقييم نجاح حملة غانا

المشكلة لا يزال تسجيل المواليد بعيد المنال في العديد من البلدان النامية. و يصدق هذا على غانا قبل تنفيذ حملة تسجيل رئيسية.

الأسلوب تقوم هذه الدراسة، المستندة على بيانات دراسة استقصائية، بتقييم نتائج حملة تسجيل تم إطلاقها خلال عامي 2004 و2005 في غانا. واشتملت الاستراتيجيات الرئيسية على ما يلي: توسيع نطاق الفترة القانونية للتسجيل المجاني للرضع؛ وإدراج التسجيل في أسابيع تعزيز صحة الطفل؛ وتدريب العاملين الصحيين المجتمعيين على تسجيل المواليد؛ واستخدام متطوعين للتسجيل من المجتمع؛ وتسجيل الأطفال أثناء الاحتفالات والتنفيذ التجريبي لسجلات سكان المجتمع. وتناقش هذه الورقة مساهمة هذه الاستراتيجيات في زيادة معدلات التسجيل وتوضح درجة الارتباط بين تسجيل المواليد والمؤشرات المختلفة للوصول إلى الرعاية الصحية وخصائص الأسرة.

المواقع المحلية تعاون سجل مواليد ووفيات غانا مع المنظمات الدولية، وبشكل رئيسي مع الخطة الدولية وصندوق الأمم المتحدة للطفولة (اليونيسيف)، لتنفيذ حملة تسجيل المواليد.

التغيرات ذات الصلة على خلاف العديد من البلدان الأخرى في أفريقيا جنوب الصحراء الكبرى، شهدت غانا ارتفاعاً كبيراً في معدلات التسجيل على مدار فترة الحملة. وحسّنت استراتيجيات الحملة من الوصول وقصّرت المسافة إلى مراكز التسجيل. وتشير بيانات الدراسة الاستقصائية إلى أن معدل التسجيل للأطفال الأقل من 5 سنوات ارتفع من 44 ٪ في عام 2003 إلى 71 ٪ في عام 2008.

الدروس المستفادة يمكن تقليل التكاليف غير المباشرة لتسجيل المواليد عن طريق إدراج تسجيل المواليد في الرعاية الصحية المجتمعية والحملات الصحية وأنشطة التسجيل المتنقلة، ولاسيما في المجتمعات الفقيرة، وتحقيق زيادات كبيرة في معدلات التسجيل. وينبغي تعزيز الربط بين قطاع الصحة وأنشطة التسجيل وتوسيع استخدام سجلات سكان المجتمع.

摘要

出生登记和就医：对加纳活动成功与否的评估

问题 在许多发展中国家，出生登记工作还远未完成。加纳在执行一项重要登记活动之前的情况正是如此。

方法 本研究基于调查数据评估加纳 2004-2005 年启动的登记活动的结果。主要战略包括：延长婴儿免费登记的法定期限；将登记纳入儿童健康宣传周；培训社区卫生工作者进行出生登记；使用社区登记志愿者；在庆祝活动期间进行儿童登记；进行社区人口登记试点。本文讨论了这些战略在提高登记率方面的贡献，表明出生登记和各种就医指标和家庭特征之间的关联度。

当地状况 加纳出生和死亡登记处与国际组织（主要是国际计划和联合国儿童基金）合作实行出生登记活动。

相关变化 与其他许多撒哈拉以南非洲国家不同，加纳在活动期间登记率大幅上升。活动战略改善了就医条件，缩短了与登记中心的距离。调查数据显示，5 岁以下儿童的登记率从 2003 年的 44% 提高到 2008 年的 71%。

经验教训 出生登记与社区卫生保健、卫生宣传和流动登记活动相结合，可以减少出生登记的间接成本（在贫困社区尤其如此），登记率大幅增加。卫生部门和登记活动之间的联系应进一步加强，并应扩大对社区人口登记的利用。

Résumé

Enregistrement des naissances et accès aux soins de santé: une évaluation de la réussite de la campagne du Ghana

Problème L'enregistrement des naissances est encore loin d'être systématique dans de nombreux pays en développement. C'était d'ailleurs le cas au Ghana, avant qu'une campagne d'enregistrement ne soit lancée.

Approche Cette étude, basée sur les données d'une enquête, évalue les résultats d'une campagne d'enregistrement des naissances initiée en 2004-2005 au Ghana. Les stratégies clés suivantes incluaient: le prolongement de la durée légale pour l'enregistrement gratuit des nouveau-nés, l'intégration des démarches d'enregistrement des naissances lors des semaines de promotion de la santé des enfants,

la formation d'agents de santé communautaires pour enregistrer les naissances, le recours à des bénévoles de la communauté pour les enregistrements, l'enregistrement des enfants lors de grands événements et le pilotage des registres d'état civil de la communauté. Ce document traite du rôle de ces stratégies dans l'augmentation des taux d'enregistrement et indique le degré d'association entre l'enregistrement des naissances, divers indicateurs de l'accès aux soins et les caractéristiques familiales.

Environnement local Le bureau des naissances et des décès du Ghana a collaboré avec des organisations internationales, principalement le Plan International et l'UNICEF, afin de mettre en œuvre la campagne d'enregistrement des naissances.

Changements significatifs Contrairement à de nombreux autres pays d'Afrique subsaharienne, le Ghana a connu une hausse substantielle des taux d'enregistrement au cours de la campagne. Les stratégies menées ont permis d'améliorer l'accessibilité des centres d'enregistrement et de les rapprocher de la communauté. Les données de l'étude montrent que le taux d'enregistrement des enfants de moins de 5 ans est passé de 44% en 2003 à 71% en 2008.

Leçons tirées L'intégration de l'enregistrement des naissances dans les soins de santé communautaires, les campagnes de santé et les activités d'enregistrement itinérantes permettent de réduire les coûts indirects liés à l'enregistrement des naissances, en particulier pour les communautés les plus pauvres, ce qui entraîne des augmentations substantielles des taux d'enregistrement. Le lien entre le secteur de la santé et les activités d'enregistrement doit être renforcé et l'utilisation des registres d'état civil pour la communauté élargie.

Резюме

Регистрация рождений и доступ к здравоохранению: оценка успехов кампании в Гане

Проблема Проблема регистрации рождений еще далека от своего решения во многих развивающихся странах. Такая же ситуация существовала и в Гане до проведения там крупной регистрационной кампании.

Подход В этом исследовании, основанном на данных обследований, оцениваются результаты регистрационной кампании, проведенной в Гане в 2004-2005 годах. Ключевые использованные стратегии: продление установленного законом периода бесплатной регистрации младенцев, включения процедуры регистрации в ходе мероприятий по укреплению здоровья детей, обучение общинных медицинских работников регистрации рождений, использование добровольцев из состава сообщества для проведения регистрации, регистрация детей во время праздников и апробация общинных реестров населения. В данной статье рассматривается вклад этих стратегий в более широкое применение регистрации и показывается степень взаимосвязи между регистрацией рождений и различными показателями доступа к здравоохранению и характеристиками семей.

Местные условия Реестр рождений и смертей Ганы был разработан совместно с международными организациями, в основном с Plan International и Детским фондом ООН, в целях проведения кампании по регистрации рождений.

Осуществленные перемены В отличие от многих других африканских стран к югу от Сахары, в Гане был отмечен значительный рост доли зарегистрированных рождений за период кампании. Стратегии кампании улучшили доступность регистрационных центров и сократили расстояние до них. Данные опросов показывают, что доля зарегистрированных рождений среди детей в возрасте до 5 лет выросла с 44% в 2003 году до 71% в 2008 году.

Выводы Включение регистрации рождения в состав общественного здравоохранения, кампании по охране здоровья и услуги по мобильной регистрации могут снизить косвенные затраты на регистрацию рождений, особенно в бедных общинах, а также приводят к значительному увеличению доли зарегистрированных рождений. Необходимо и в дальнейшем укреплять связь между сектором здравоохранения и деятельностью по регистрации, а сфера применения общинных реестров населения должна быть расширена.

Resumen

Registro de los nacimientos y acceso a la atención sanitaria: una evaluación del éxito de la campaña en Ghana

Situación El registro de los nacimientos sigue presentando carencias en muchos países en vías de desarrollo. Dicha afirmación era cierta en Ghana antes de acometer una importante campaña de registros.

Enfoque Este estudio, basado en datos de una encuesta, evalúa los resultados de una campaña de inscripciones iniciada en Ghana en 2004–2005. Las estrategias clave comprendieron: ampliar el período legal para el registro gratuito de los bebés; incorporar el registro en las semanas de promoción de la salud infantil; formar a los profesionales sanitarios locales sobre el registro de los nacimientos; utilizar voluntarios locales para el registro; registrar a los niños durante celebraciones y dirigir los registros de población locales. En este documento se discute sobre la contribución de dichas estrategias al incremento en las tasas de registro y se expone el grado de asociación entre el registro de los nacimientos y diversos indicadores del acceso a la atención sanitaria y las características familiares.

Marco regional El Registro de Nacimientos y Defunciones de Ghana trabajó junto con organizaciones internacionales, principalmente Plan International y UNICEF, para desplegar la campaña de registro de nacimientos.

Cambios importantes A diferencia de muchos otros países subsaharianos, Ghana experimentó un alza sustancial en las tasas de registro durante el período de la campaña. Las estrategias de la campaña mejoraron la accesibilidad y acortaron la distancia hasta los centros de registro. Los datos de la encuesta muestran que la tasa de registro de niños menores de 5 años aumentó del 44% en 2003 al 71% en 2008.

Lecciones aprendidas La incorporación del registro de los nacimientos en la atención sanitaria local, en campañas sanitarias y en actividades de registro ambulantes puede reducir los costes indirectos del registro, especialmente en las comunidades más pobres, y redundar en incrementos sustanciales de las tasas de registro. El vínculo entre el sector sanitario y las actividades de registro debe fortalecerse en mayor medida y se ha de generalizar el uso de los registros de población locales.

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