

# Reasons for underreporting of notifiable diseases by Syrian paediatricians

H. Al-Laham,<sup>1</sup> R. Khoury<sup>2</sup> and H. Bashour<sup>3</sup>

## أسباب نقص الإبلاغ من قبل أطباء الأطفال السوريين عن الأمراض الواجبة التبليغ

هاني اللحام، رياض خوري وهيام بشور

**الخلاصة:** قمنا باستقصاء أسباب نقص التبليغ عن الأمراض الواجبة التبليغ بين أطباء الأطفال السوريين. وتم إرسال استبيانات تستوفي بياناتها ذاتياً ومظاريف معنونة بحيث تعود تلقائياً بعنوان فريق الدراسة إلى جميع أطباء الأطفال الذين وردت أسماءهم في السجلات الحديثة لقيادة الأطباء السورية. وقد أعادت مكاتب البريد 55 استبياناً من أصل 723 استبياناً بسبب عدم صحة العنوان. ولم يزد عدد الاستبيانات التي تمت الإجابة عنها على 160 استبياناً (23.9%). وقد أورد 50% تقريباً من أطباء الأطفال سببين اثنين لنقص التبليغ، هما: عدم توافر استمارات التبليغ، وعدم معرفة أرقام الهواتف التي يمكن التبليغ من خلالها. وقد أوضح حوالي 70% من الأطباء أن أهم التحسينات التي يمكن إدخالها هي توفير استمارات للتبليغ يمكن استخدامها بسهولة، وقائمة مكثفة وسهلة الاستخدام للأمراض الواجبة التبليغ.

**ABSTRACT** We investigated reasons for underreporting of notifiable diseases among Syrian paediatricians. Self-administered questionnaires and self-addressed envelopes were sent to all paediatricians listed in the recent records of the Syrian Medical Association. Of 723 questionnaires, 55 were returned by the post office due to an incorrect address. Only 160 questionnaires (23.9%) were answered. Approximately 50% of paediatricians gave two reasons for underreporting: lack of reporting forms and ignorance of reporting telephone numbers. Nearly 70% indicated that the most important improvements would be the availability of easy reporting forms and a condensed and feasible list of notifiable diseases.

## Raisons de la sous-notification des maladies à déclaration obligatoire par les pédiatres syriens

**RESUME** Nous avons examiné les raisons de la sous-notification des maladies à déclaration obligatoire chez des pédiatres syriens. Des questionnaires à remplir soi-même et des enveloppes pré-adressées ont été envoyés à tous les pédiatres inscrits dans les registres récents de l'Association des médecins syriens. Sur 723 questionnaires, 55 ont été renvoyés par le bureau de poste en raison d'une adresse incorrecte. Seuls 160 questionnaires (23,9 %) ont fait l'objet d'une réponse. Environ 50 % des pédiatres ont donné deux raisons pour la sous-notification : le manque de formulaires de notification et la méconnaissance des numéros de téléphone pour la notification. Près de 70 % d'entre eux ont indiqué que les améliorations les plus importantes concerneraient la disponibilité de formulaires de notification faciles à utiliser et une liste condensée et réaliste des maladies à déclaration obligatoire.

<sup>1</sup>Directorate of Communicable Diseases, Ministry of Health, Damascus, Syrian Arab Republic.

<sup>2</sup>ARI Programme, Ministry of Health, Damascus, Syrian Arab Republic.

<sup>3</sup>Department of Community Medicine, Faculty of Medicine, University of Damascus, Damascus, Syrian Arab Republic.

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## Introduction

Public health surveillance is the ongoing systematic collection, analysis and interpretation of outcome specific data for use in the planning, implementation and evaluation of public health practice [1]. The core of public health practice is surveillance and public health surveillance data are used to assess public health status, to define public health priorities, to evaluate programmes and to conduct research [2].

Surveillance concepts are increasingly being applied to new areas of public health practice. For infectious diseases, however, surveillance activities have traditionally relied on notifiable diseases reporting systems based on legally mandated reporting of cases to state and local health officials. In most countries, underreporting is a consistent and well-established problem of the notifiable diseases reporting systems.

In the Syrian Arab Republic, reporting of notifiable diseases at the national level started in 1945 when the Communicable Diseases Law was enacted [3]. In 1970, a law managing medical practice and licensing was issued [3]. The current practice of reporting notifiable diseases follows Decree No. 12 issued in 1992 by the Syrian Ministry of Health [4] and its appendices. According to this decree, the list of notifiable diseases includes 9 diseases, such as poliomyelitis, neonatal tetanus and cholera, that require immediate reporting by telephone or facsimile and 16 other diseases, such as pertussis, diphtheria and viral hepatitis, that require monthly routine reporting. Issue 3 in this decree penalizes physicians who do not report notifiable diseases. The decree is directed not only at physicians working in the health centres, but also to physicians in all other sectors, including governmental and private doctors. Monthly

reporting forms are issued by health authorities, but other forms are also acceptable.

The Syrian Arab Republic is similar to many other countries in that compliance with the reporting of notifiable diseases is poor. No estimates of the thoroughness of reporting are available except for diseases under specific health programmes, such as the Expanded Programme of Immunization (EPI). EPI has implemented special surveillance activities including the surveillance of acute flaccid paralysis and measles. The Division of Epidemiological Investigation in the Syrian Ministry of Health is currently working to develop a strategy for improving the communicable diseases surveillance system.

Although lack of compliance in reporting notifiable diseases is a problem, no studies have been undertaken to evaluate its magnitude. We investigated reasons for underreporting of notifiable conditions by practising physicians in order to recommend activities to improve such reporting.

## Methods

The study group included all paediatricians practising in the Syrian Arab Republic. Only paediatricians were included in the study because they are frequently exposed to messages concerning the surveillance of childhood communicable diseases. They usually maintain good communication with concerned health units in the Ministry of Health. Such communication is well established for specific programmes such as poliomyelitis eradication and measles elimination. The methods of communication include annual national workshops with the Syrian Paediatric Society, continuous education and incentives.

This cross-sectional study included all paediatricians in the country. Self-administered questionnaires and self-addressed envelopes were mailed to all paediatricians practising in the country as listed in the records of the Syrian Medical Association. A covering letter signed by the Minister of Health was also sent. It explained the study objectives and requested cooperation. The questionnaire included introductory information plus two predetermined checklists: the first listed possible reasons for underreporting and the second listed possible activities to improve reporting. An extra open item was provided for doctors to add additional comments if they desired to do so. It was determined that this questionnaire design would be convenient for busy doctors.

The total number of letters sent to paediatricians was 723. The letters were mailed to addresses listed in the most recent directory of the Syrian Medical Association, published in 1992 [5]. More up-to-date directories were used for Damascus, the capital, and Aleppo, the second largest city in the country, since they were available and had been updated in 1995–1996. Paediatricians in Damascus and Aleppo constituted 58.4% of all study subjects. All letters were dispatched between 17 and 20 February 1997. Doctors were asked to return their answers within 2 weeks. Questionnaires returned up to May 1997 were processed, coded and entered into a computer and analysed using SPSS. Proportions were calculated and statistical significance was studied using chi-squared test.

## Results

Of 723 questionnaires, only 160 (23.9%) were returned (excluding 55 questionnaires that were returned by the post office). The

response rate differed by province and ranged from 12.5% to 36.4%. The mean age of responding doctors was 44.8 years. Their place of work was distributed as follows: 38.1% in private practice only, 20% in private practice and hospital, 26.5% in private practice and governmental hospital, 5% in health centres and 8.1% did not state their place of work.

Table 1 shows reasons for underreporting as indicated by the paediatricians. Nearly 50% of doctors checked two reasons only: namely lack of reporting forms and ignorance of reporting telephone numbers. Only 49 doctors (30.6%) chose to state other reasons under the open-ended item. The non-predetermined reasons were collated and analysed. Of the 49 doctors, 17 (34.7%) thought that reporting would not be taken seriously by the relevant authorities; thus, they thought that reporting was useless. A further 10 doctors (20.4%) indicated that the method of reporting was impractical. Others mentioned lack of feedback and lack of laboratory confirmation. A few doctors thought that it was the responsibility of health centres and governmental hospitals only to report, without the need for any involvement from the private sector.

Activities for the improvement of notifiable diseases reporting as indicated by the responding paediatricians are shown in Table 2. Of all the responding doctors, 72.5% checked the item stating the necessity of providing easy reporting forms. The next most important activity as chosen by almost 70% of paediatricians was the need to provide a feasible list of notifiable diseases. As for multiple activities, 56.3% of paediatricians thought that the two main activities for improvement were providing a feasible list of notifiable diseases and easy reporting forms. Another 52.6% of paediatricians thought that the two main activities were

**Table 1 Reasons given by paediatricians for failure to report notifiable diseases**

<b>Reason for underreporting</b>	<b>No.</b>	<b>% of questionnaires (n = 160)</b>	<b>% of responses (n = 441)</b>
Do not know that reporting is required	14	8.8	3.2
Do not have notifiable disease reporting form	112	70.0	25.4
Do not know how to report notifiable diseases	54	33.8	12.2
Do not know telephone numbers to call	89	55.6	20.2
Do not have a copy of the list of communicable diseases	86	53.8	19.5
Do not report due to concerns about confidentiality	2	1.3	0.5
Do not have time; reporting is time-consuming	14	8.8	3.2
Assume that the case will be reported by someone else	5	3.1	1.1
Do not believe that reporting is useful	16	10.0	3.6
Other reasons	49	30.6	11.1

**Table 2 Activities suggested by the paediatricians to improve reporting by doctors**

<b>Activities for improvement</b>	<b>No.</b>	<b>% of questionnaires (n = 160)</b>	<b>% of responses (n = 518)</b>
Maintain a reasonable list of notifiable diseases	111	69.4	21.4
Maintain a clear case definition for notifiable diseases	65	40.6	12.5
Provide easy reporting forms	116	72.5	22.4
Provide good communication with concerned health units	108	67.5	20.8
Analyse, use and disseminate the data	66	41.3	12.7
Other suggestions	52	32.5	10.0

providing a feasible list of notifiable diseases and better methods of communication with concerned authorities. The first four activities listed were checked together as the most important activities by approximately 25% of the doctors. Only 52 paediatricians added other suggestions under the open-ended item: 13 suggested the need to provide special postal forms, another 13 indicated the necessity of providing feedback and 9 doctors wrote of the need for close supervision.

The association between characteristics of the doctors and their responses was investigated. No clear tendencies were noted, except a statistically significant relationship ( $P < 0.05$ ) between place of work and tendency to add other activities under the open-ended question. Of those working in health centres, 56.6% added their personal opinions under the open-ended item as compared with 12.5% of those not working in health centres. This may be due to wider knowledge and better communication among those who work in the health authority.

## Discussion

We assessed the opinions of practising paediatricians in the Syrian Arab Republic concerning reasons for underreporting of notifiable diseases and activities for improvement. A strikingly low response rate was noted in the study. Less than 25% responded to the questionnaire although the study instrument was designed to maximize response. The questionnaire was anonymous and simple with predetermined checklists, and the time needed to check the items on the questionnaire was minimal. Furthermore, self-addressed and stamped envelopes were sent to the doctors.

We chose this method of data collection for two main reasons. First, we expected that we could reach a wider population. Second, we wanted to avoid the problems associated with the use of face-to-face interviews since we were tackling an issue that can be sensitive to doctors. Although it is well known that mailed questionnaires usually have a low response rate, it is also known that the interest of the respondents is the more important factor [6].

The list of suggested reasons for underreporting seemed to agree with the opinions of most doctors and also the results of other studies. Most doctors indicated that the defects in the reporting process are due to ignorance of the list of notifiable diseases, lack of reporting forms or ignorance of the reporting process. Only a few doctors did not know that reporting was necessary and only two claimed patient confidentiality. One subgroup of 16 doctors was not interested in reporting and did not believe that reporting was important.

The main constraints facing the process of reporting were ignorance of its importance and difficulties in its process, in addition to a few other reasons such as lack of feedback and lack of laboratory confirmation. Our results agree with Hallaj [7] as regards the main constraints facing surveillance in the Eastern Mediterranean Region. Other studies have also identified reasons for underreporting that agree with our findings [8-10]. Abdool-Karim et al. found that factors influencing knowledge of notifiable conditions and underreporting were the accessibility and complexity of the notification form, lack of motivation because of poor feedback on reported cases and a perception that it was useless to report notifiable conditions [8].

Suggested activities for improvement correlated well with the reasons stated for

underreporting. The activities focused primarily on facilitating the process of reporting and disseminating a feasible list of phone numbers and postal forms. Respondents also indicated the need to increase doctor awareness and continuous communication and follow-up, emphasizing the need for feedback.

We noted from the doctors' responses that some did not distinguish between the routine reporting of notifiable diseases and the necessity to report in order to take immediate public health action.

Our study has strengths and limitations that should be noted. It systematically collated the opinions of paediatricians practising in the Syrian Arab Republic thus providing an objective basis for future actions. However, we targeted paediatricians only. Not only was the study comprised of a subject group of only one specialty but that group might also be a biased sample. Paediatricians have been highly involved in well-established child health programmes in the country, especially very successful programmes such as those for poliomyelitis eradication and measles elimination. Nevertheless, we suspect that paediatricians' opinions are not different from the opinions of other doctors. The inclusion of other specialties might have resulted in a further decrease in the response rate. We were aware from the beginning of the study of our selection bias, but if we included all physicians a much lower response rate would have been expected. The questionnaire of the study was very simple and yet the response rate was extremely low. More sophisticated tools might have resulted in an even lower response rate. We chose not to use a second recall because we did not expect further responses. The low response rate in this study might in-

deed indicate the lack of interest in the reporting system.

Our results indicate that Syrian paediatricians may lack interest in the reporting system and be unaware of its necessity. Reasons for underreporting indicated that the process of reporting was the main constraint. Facilitating the process of reporting, providing a feasible list of notifiable diseases and maintaining good communications with doctors can form the cornerstone of improving the reporting system, and hence, the surveillance system. Feedback seems very important and awareness of doctors should be increased. Wahdan stressed that health workers should not feel threatened if they report cases and that a system of feedback to them must be developed; more importantly, a system of acknowledging their work is needed [11].

Faculties of Medicine are responsible for teaching the doctors-to-be, and the subject of surveillance should be integrated into the teaching of medical students. Health legislation should reach all doctors and its follow-up is necessary. Doctors should be convinced of the importance of reporting and their important role in it. Finally, we suggest that future activities focus on legislative, administrative and educational activities.

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