Short Report

Professional quality improvement project in vaccination services: results of a 5-year survey

Silvio Brusaferro¹, Carla Londero², Mateo Panariti¹, Federico Farneti¹, Laura Calligaris¹, Nora Coppola³, Tolinda Gallo⁴, Andrea Iob⁵, Ilva Osquino³ and the Regional Group for Vaccination Improvement

A voluntary professional quality improvement project involving preventive departments and vaccination centres of an Italian region was carried out through two surveys (in 2001 and in 2006) performed using a quality assessment manual including 12 standards and 157 criteria. After the first survey, a feedback was sent to all participating centres. All six local health authorities participated, as well as all regional vaccination centres, 48 in 2001 and 41 in 2006. The overall adherence rate to the criteria was 56.0% (3258/5820) in 2001 and 74.4% (3784/5085) in 2006. The improvement was obtained without mandatory interventions from regional authorities.

Keywords: accreditation, quality improvement, vaccination

Introduction

The importance of vaccines in public health programmes is rapidly growing due to widespread emphasis to prevention, scientific knowledge in disease pathogenesis and new technologies. Vaccination is a widespread preventive measure in health systems; traditionally it is not only used in childhood with schedules targeted to prevent infectious diseases,¹ in workers to prevent possible occupational risks² but it is also a tool used to protect travellers³ and special at-risk subpopulations (i.e. flu vaccine in elderly).⁴

Being public health tools, both vaccination programmes and single vaccination practices must follow quality improvement-oriented approaches. Vaccination involves mostly healthy people and therefore it is a must to guarantee that quality standards are as high as possible. Accreditation is one of the most widespread and shared techniques in healthcare systems in order to promote quality and to measure and guarantee high standards. When oriented to professional excellence, accreditation is still one of the most powerful means that improve quality in healthcare organizations.⁵,⁶

With respect to these considerations, we implemented a regional based project to improve quality through a voluntary professional accreditation in public vaccination services and evaluated its long term impact over 5 years.

Methods

The project took place in an Italian north-eastern region (Friuli Venezia Giulia) between 2001 and 2006.

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Vaccination policy in Italy is guaranteed by prevention departments (PD) that through vaccination centres (VC) govern these specific programmes.

In 2001, we promoted a voluntary quality improvement project involving public health nurses and doctors working in PD and VC. More than 50 professionals participated. In a few workshops, the professionals defined standards and criteria for self-evaluation, following the European Foundation for Quality Management approach to quality improvement.⁶ Once defined, shared and approved, standards and criteria resulted in an accreditation manual.⁷

The 2001 standards compliance surveys were performed as voluntary assessment. Both a course and a guide for standardized evaluation were provided. Each regional PD and each VC, after the acquisition of the informed consent (given by the PD director), were evaluated by one ad hoc trained nurse or doctor working in the same PD service, through a self-assessment methodology, together with a nurse or doctor from another PD and a third member from the coordinating centre participating as supervisor.

Data were centrally processed and a feedback was given to each PD and personally to each professional as well. The feedback reported global data benchmarked to the PD.

The manual, available on request, included 12 standards and 157 criteria. Criteria could apply to the local health authority PD, to the single VC or to both. Out of 157, 52 criteria applied to the local health authority, 26 to the vaccination centres and 79 to both.

In autumn 2006, as part of a new project for quality improvement of regional preventive services, the assessment was repeated adopting the 2001 methodology and tools. The team that took part in 2001 was reassembled for the second assessment 5 years later.

Personnel conducting the 2006 assessment had a specific retraining.

In both surveys, all six local health authorities actively participated as well as all vaccination centres, i.e. 48 in 2001 and 41 in 2006. Seven VC closed between the two surveys because of resources constraint.

Data were reviewed and analysed by the coordinating centre and results, compared to 2001, were reported to all centres. No regional target quality activities were conducted between the two surveys but data feedback after the first survey.
Table 1 Adherence rate to the standards in 2001 and 2006

<table>
<thead>
<tr>
<th>Standards</th>
<th>2001 N/Tot (%)</th>
<th>2006 N/Tot (%)</th>
<th>Difference %</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Policies and strategies</td>
<td>78/138 (56.5)</td>
<td>114/131 (87.0)</td>
<td>+30.5</td>
<td>&lt;0.01</td>
</tr>
<tr>
<td>Environment and process safety</td>
<td>159/228 (69.8)</td>
<td>157/200 (78.6)</td>
<td>+8.8</td>
<td>0.04</td>
</tr>
<tr>
<td>Facilities and technology</td>
<td>982/1800 (54.6)</td>
<td>1004/1548 (64.9)</td>
<td>+10.3</td>
<td>&lt;0.01</td>
</tr>
<tr>
<td>Staff empowerment</td>
<td>168/312 (53.8)</td>
<td>188/277 (67.6)</td>
<td>+13.8</td>
<td>&lt;0.01</td>
</tr>
<tr>
<td>Customer/patient involvement</td>
<td>15/24 (62.5)</td>
<td>15/24 (79.2)</td>
<td>+16.7</td>
<td>0.20</td>
</tr>
<tr>
<td>Vaccine supplies</td>
<td>18/18 (100.0)</td>
<td>17/18 (94.4)</td>
<td>−5.6</td>
<td>1.00</td>
</tr>
<tr>
<td>Quality assurance programmes</td>
<td>8/12 (66.7)</td>
<td>10/12 (83.3)</td>
<td>+16.6</td>
<td>0.64</td>
</tr>
<tr>
<td>Procedures</td>
<td>1222/2214 (55.2)</td>
<td>1552/1927 (80.5)</td>
<td>+28.2</td>
<td>&lt;0.01</td>
</tr>
<tr>
<td>Data management</td>
<td>284/594 (47.8)</td>
<td>347/517 (67.1)</td>
<td>+19.3</td>
<td>&lt;0.01</td>
</tr>
<tr>
<td>Customer satisfaction</td>
<td>276/590 (70.7)</td>
<td>295/341 (86.5)</td>
<td>+15.8</td>
<td>&lt;0.01</td>
</tr>
<tr>
<td>Staff satisfaction</td>
<td>7/24 (29.1)</td>
<td>10/24 (41.6)</td>
<td>+12.5</td>
<td>0.37</td>
</tr>
<tr>
<td>Outputs and outcomes</td>
<td>40/66 (60.6)</td>
<td>46/66 (69.7)</td>
<td>+9.1</td>
<td>0.27</td>
</tr>
<tr>
<td>Total</td>
<td>3258/5820 (56.0)</td>
<td>3784/5085 (74.4)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

N/Tot = no. of opportunities fulfilling the standards on total opportunities eligible for criteria included in those standards

For statistical analysis, we used chi-squared test and we considered significant a P-value ≤ 0.05.

Results

The global response rate to criteria was 100% (5085/5085) in 2006 and 94.4% (5492/5820) in 2001. Table 1 shows the adherence rate to the standards and criteria in 2001 and 2006.

Altogether, the adherence rate to criteria was 56.0% (3258/5820) in 2001 and 74.4% (3784/5085) in 2006, with a significant increase. A significant better result in standard compliance rates comparing 2006 to 2001 was seen respectively for: policies and strategies (+30.5%), procedures (+28.2%), data management (+19.3%), customer satisfaction (+15.8%).

Discussion

Our results show a significant increase in adherence rate to quality standards by PD and VC >5 years. These results were achieved on a voluntary basis since no specific formal addresses or directives were officially promoted by regional or local authorities nor an ad hoc funding was allocated. The feedback of the results in 2001 contributed to the quality improvement gain assessed in 2006.

These results were achieved in a context where the regional vaccination services have a long tradition and guarantee good performances over the years since both in 2001 and 2006 vaccination coverage reached high rates, i.e. polio and DTaP (diphtheria–tetanus–pertussis) over 96% and MMR (mumps–measles–rubella) >90%.

The wide involvement of the personnel in standards definition as well as in the assessments, over 50 doctors and nurses from all local health authorities and centres, created a spontaneous movement towards standards achievement. The way the feedback was produced and spread in 2001 had an important role too: professionals responsible and/or involved in vaccination activities both at regional and local level received and discussed the results of the first assessment. Information acquired gave the professionals the awareness about the critical points to focus on in their organization.

A fundamental role was played by nurses and doctors reviewing the way clinical activities were organized as well as responsibilities of different professionals. Moreover, a special attention was paid to the opportunity to use the vaccination arrangement as a good chance to meet people and suggest them other relevant health promotion programmes such as accident prevention.8 All these results were achieved without a formal target assigned by regional or local health authority.

Some standards, after 5 years, still showed great room for improvement. This is the case of personnel management and satisfaction and structural aspects of the organization. It must be highlighted that the improvement of the latter requires building investment on a regional and local level and it also requires time.

Personnel management and satisfaction is an even more critical aspect. It may be stressed in the future in two main ways: (i) increasing the use of surveys on personnel perception (only a few organizations reported to have considered this aspect) and (ii) implementing an approach where job description and performance evaluation are clearly defined.

This study showed some limitations, too. The first is that the project involved only vaccination services while in the regional system other actors play an active role in vaccinating people such as general practitioners, hospitals (i.e. emergencies rooms, hygiene units and occupational health units), etc.

A second potential limitation of the study is the self-assessment methodology: the personnel assessed their own units with an external supervisor. Nevertheless, we considered this approach the most useful and affordable one since it does not require a lot of resources and guarantees a uniform approach through a single external professional being present during all the assessments.

Our goal was not to compare the services/centres but to reduce their heterogeneity and to increase the quality of local health authorities PD and VC in order to better satisfy citizens. To this end, the aspects analysed in Friuli Venezia Giulia region could be investigated outside the regional context in the perspective of a wider application of this project. The results obtained in terms of improvement in 5 years express the strong motivation of the team and its continuous engagement, since the healthcare workers were the actors of the process and the coordinating centre acted only as a facilitator.

The potential value of this experience for other services both in Italy and in Europe is noteworthy since this manual could be spread and translated into other languages in order to be adopted elsewhere. The standardization of the quality performance criteria leads to measurements that can be used for benchmarking. Moreover, thanks to these kinds of accreditation processes towards excellence, every service/centre can make an explicit analysis of its own organization and improve many aspects, going beyond the old paradigm of being within the mandatory law only but showing the awareness of straining towards a
nationwide or Europe-wide better health service in the field of vaccination.

Conflict of interest: None declared.

Key points
- Professional accreditation is a valuable quality improvement system based on teamworking.
- An accreditation manual made of standards helps in standardizing vaccination practices performed in different settings and it is an important benchmark tool.
- The compliance rate to the standards gives the regional health authority an overview on an important public health field: vaccination.

References

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