

Original research

Evaluation of tools for the implementation of clinical practice guidelines on sexually transmitted infections*

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ABSTRACT

Objective. Determine the acceptability, perceived usefulness, and adoption of implementation tools and technical assistance provided by the Health Technology Assessment Institute (IETS) in hospitals in two regions of Colombia.

Methods. Assistance was provided for implementation of clinical practice guidelines (CPGs) in 24 hospitals (17 in Antioquia and seven in Cundinamarca) in areas with high prevalence of sexually transmitted infections, and for use of the implementation tools. Health professionals were given surveys and medical specialists were interviewed.

Results. Overall, 86% of respondents are familiar with the CPGs, 86% with the tracer recommendations, 79% with the interactive flow charts, and 82% with the evidence sheets, while 41% never used the implementation tools. Of the respondents who used the tools, 55% did so on their work computer, while 24% used their personal telephone. The most useful tools were the evidence sheets and flow charts (98%) and the tracer recommendations (92%). The least useful were the budgetary impact tools (81%).

Conclusions. The implementation tools and technical assistance provided in hospitals in two regions of Colombia are perceived as useful and acceptable, although the degree of implementation is low. The findings of this research will help the different actors, such as the Ministry of Health and Social Protection, the IETS, and the Administrative Department of Science, Technology and Innovation (Colciencias), among others, improve their programs for the implementation of clinical practice guidelines.

Keywords

Health plan implementation; clinical practice guidelines; sexually transmitted diseases.

Genitourinary infections, including sexually transmitted infections (STIs), are one of the leading reasons for consultation in the adult population. According to the World Health Organization

(WHO) (1), there are 448 million new STI cases in adults aged from 15 to 49 years every year throughout the world. The principal causative microorganisms are: *Treponema pallidum*, *Neisseria gonorrhoeae*, chlamydia, and trichomoniasis (excluding cases of human immunodeficiency virus infections and other STIs).

A report on STIs in Colombia (1976-2000) estimated a prevalence of *Chlamydia trachomatis* infection of 6%, with a financial burden of over US\$ 28 million and an incidence of *N. gonorrhoeae*

infection of 1.7%, with costs of US\$ 7 million over the same period (2).

According to a report on the situation of sexually transmitted infections other than HIV in Colombia, 2009-2011, published by the Ministry of Health, STIs constitute a serious public health problem. Health care registries report an average 98 423 cases per year. One of the most salient issues is the prevalence of syphilis in pregnant women, which is estimated at 1.7%; higher than the 1% established by the Pan American

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Health Organization (PAHO) as a baseline criterion (3).

The national demography and health survey (4) showed that in the female population interviewed, 9% of respondents presented some STI-related symptoms in the 12 months prior to the survey.

The health system in Colombia consists of regulatory bodies, such as the Ministry of Health, insurance entities known as health promoters, and health service providers. Within this structure, hospitals are responsible for drawing up and implementing management protocols and guidelines while insurance companies, local governments, and national government entities are responsible for overseeing the implementation of such guidelines and protocols.

Since 2007, the Ministry of Health and Social Protection and the Administrative Department of Science, Technology and Innovation (Colciencias) have invested about 10 million dollars in developing over 50 clinical practice guidelines (CPGs) following highly rigorous methodologies. One of the guidelines developed with this funding was the CPG for a syndromic approach to the diagnosis and treatment of patients with STIs and other genitourinary infections, published in 2013.

The national government also developed other strategies to strengthen competences and the capacity to implement such guidelines: the compulsory inclusion of CPGs in the quality system, and activities to promote passive dissemination throughout the country. However, the investment in developing the CPGs was not accompanied by commensurate efforts to implement them, with the risk that the CPGs would be ignored and would not result in improvements to the quality of health care.

To facilitate implementation of the guidelines and improve the quality of health services, the IETS developed various tools such as tracer recommendations (key recommendations of the guidelines), evidence sheets (summary of evidence that justifies implementation of the recommendations in simple, easy-to-understand language), dynamic flow charts (on-line flow charts for effortless interaction), indicators, and a budgetary impact analysis tool (planning tool for administrative and financial management) to help members of the system reduce the gap between evidence and clinical practice.

The project seeks to improve the quality of health care for people with STIs through the implementation of the guidelines. The aim of the study is to establish the level of acceptability, perceived usefulness, and deployment of the IETS implementation tools and technical assistance in hospitals in two regions of Colombia.

METHODS

This study forms part of a new initiative: Improving Program Implementation through Embedded Research (iPIER), developed by the Alliance for Health Policy and System Research (AHPSR) in collaboration with PAHO. The iPIER model ranks program implementers as key research agents who understand the barriers in health systems that obstruct implementation and thus help identify possible solutions to overcome such barriers. When research on program implementation is integrated into existing processes, this supports the effectiveness of such processes (and effective health policies in general) since the research carried out forms part of the implementation process. A detailed description of the application of the research methodology is included in the iPIER concept paper (Evaluation of the application of implementing tools to promote the adoption of clinical practice guidelines [CPGs] of STIs in Antioquia and Cundinamarca, Colombia).

Work team

The work team was made up of members of the IETS: a project leader physician with training in social projects and health administration, two physicians specialized in implementation with consultancy training, a clinical epidemiologist, and a health information systems manager. Furthermore, iPIER provided methodological support with personnel from the Institute for Clinical Effectiveness and Health Policy (IECS).

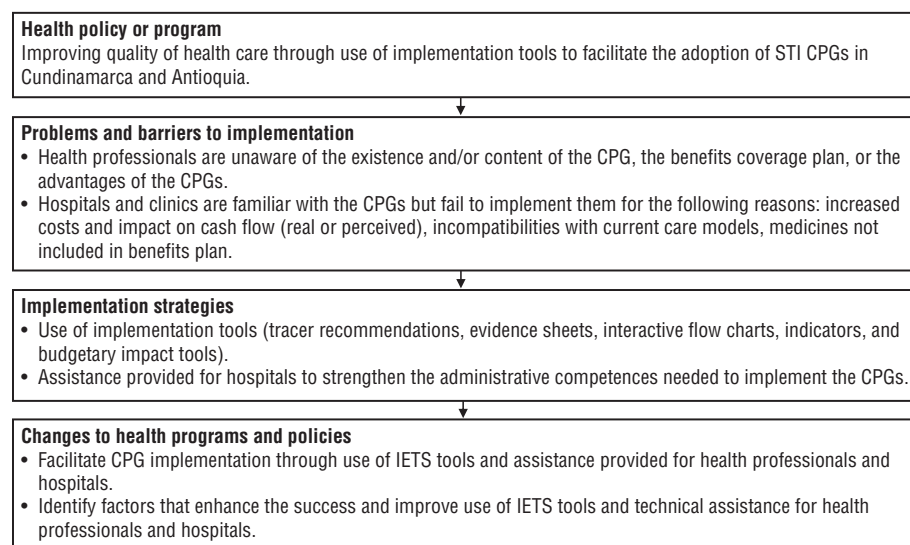
Ethical component

The study protocol was approved by the research ethics committee of the University Hospital of La Samaritana in Bogotá, Colombia.

Study design

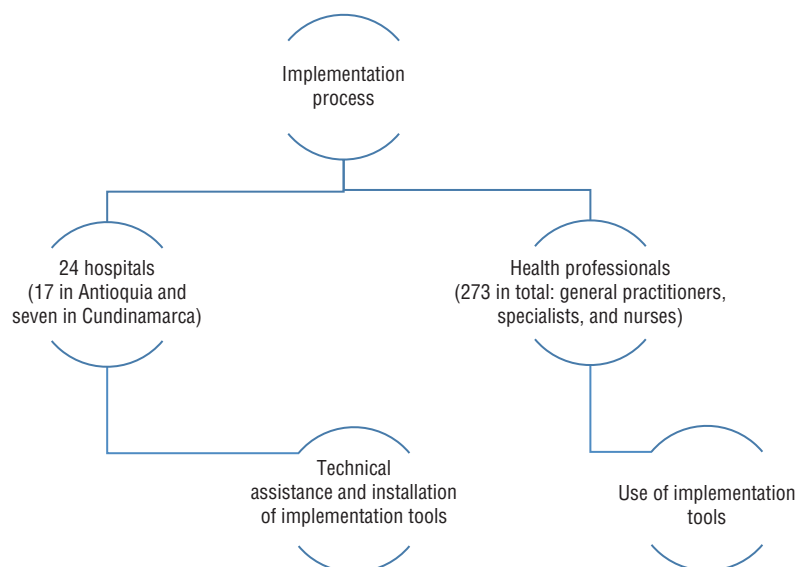
It is a descriptive qualitative study. The research protocol included assistance for participating hospitals both for the implementation and use of the implementation tools (Figures 1 and 2), through workshops on CPGs and assistance in identify barriers and facilitators, and the construction and adoption of implementation plans in each institution. Further assistance was provided with the installation and launch of the IETS implementation tools (tracer recommendations, evidence sheets, interactive flow

FIGURE 1. Current program flow chart

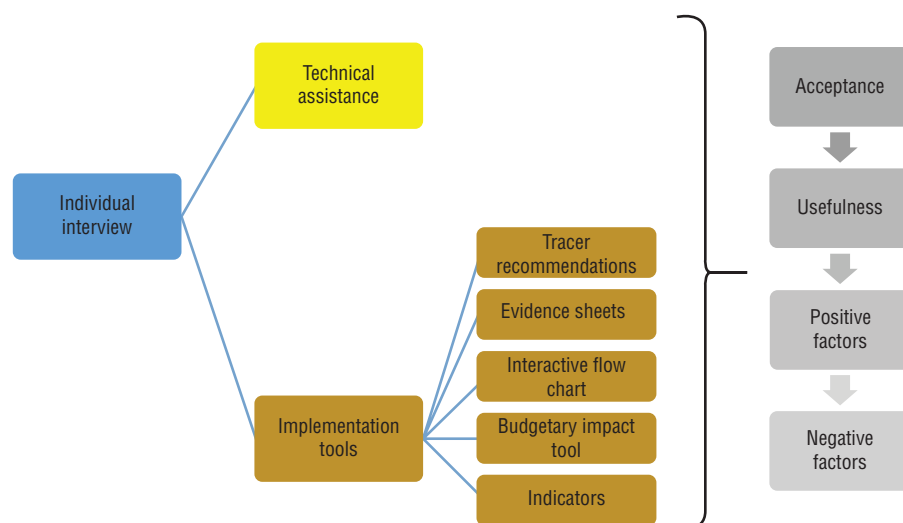


Source: prepared by authors, 2015.

CPGs, clinical practice guidelines; IETS, Health Technology Assessment Institute; STIs, sexually transmitted infections.

FIGURE 2. General research protocol outline

Source: prepared by authors, 2015.

FIGURE 3. Interview data analysis plan

Source: prepared by authors, 2015.

charts, indicators, and budgetary impact tools) in each hospital.

The interventions were undertaken between March and April 2015. In each region, an implementation specialist carried out the activities by nodes: one in Cundinamarca and five in Antioquia. The organization of these nodes was defined by geographical integration.

Following the intervention, process leaders who participated in the workshops were interviewed and health professionals at centers where the tools were installed were surveyed. Quantitative data were analyzed using descriptive statistics with Google Survey®, and qualitative data

(from interviews) were transcribed, ordered, and analyzed by subject (Figure 3). Principal messages as well as key terms and words were identified. Microsoft Excel® was used for the identification.

For the data analysis, the following conditions were taken into account:

- Actor characteristics: identification of the characteristics of the institutions, such as level of complexity, the services involved, the number of sites, the availability of computers in each physician's office, the availability of Internet, and the specialty of professionals.

- System characteristics: existing relationships between hospitals and other actors such as insurers and surveillance entities, and factors of these that could influence CPG implementation.
- Evaluation of the usefulness and acceptability, as perceived by medical specialists, of the processes followed during the implementation workshops.

The results will be integrated into all phases of the CPG implementation process:

- CPG development phase: strengthen the analysis of CPG implementability (future CPGs and updates of existing ones).
- Implementation tool development phase: information on the construction and adjustment of existing or new tools.
- Implementation phase: improve capability of IETS implementation specialists and facilitate their interaction with institutional health service providers (IPS) and health professionals.

RESULTS

The project commenced with 24 institutions (17 in Antioquia and seven in Cundinamarca) of which 20 were hospitals of low complexity, three of medium complexity, and one of high complexity. Seven had only one center and 17 had more than one site (urban and rural). All the institutions had general practitioners and nursing professionals, and eight had gynecology specialists. Nineteen of the 24 institutions had a computer in each physician's office (only in the main buildings) and all had Internet access, but only in administrative areas.

The hospitals are organized into services networks (by geographical proximity) which interact through what is called a referral and cross-referral system: low complexity hospitals refer patients to medium- and high-complexity hospitals. However, depending on the characteristics of the payer (insurer), this interaction can change and involve referrals to other public or private hospitals from different sections of the department, and not necessarily to those involved in the project.

A total of 273 surveys were sent out via Google Docs®, with weekly reminders over a period of one month, and 74 responses (27%) were received of which three stated they did not wish to

participate in the survey. Table 1 illustrates the results obtained.

Eighty-six percent of participants indicated that they were familiar with the CPGs, 86% with the tracer recommendations, 79% with the interactive flow charts, and 82% with the evidence sheets. However, 41% of respondents never used the implementation tools. Regarding the barriers to the implementation of the guidelines, these include elements extraneous to the health professionals. The principal barrier was that 50% of hospitals had neither the required medicines nor procedures in place; secondly, programmed consultation times greatly impeded guideline implementation (35%); and thirdly, the type of hospital employment contracts also constituted a barrier (28%). Actions that favor implementability included continuing education (92%), interactive education (76%), and auditing (73%).

With regard to use, 55% of users stated that they used the tools on their work computer, while 24% used them on their personal telephone and 11% on other devices.

The most useful tools were the tracer recommendations and flow charts (98%) and the evidence sheets (92%), while the least useful were the budgetary impact tools (81%). In regard to ease of use, two-thirds of the respondents ranked the tools as easy to use provided training is available (Table 2).

In order to evaluate the acceptability and usefulness of the assistance provided, data from 20 interviews were compiled. Four institutions did not participate for reasons external to the project, such as political changes, disinterest, or lack of personnel in the organization to take on such commitments.

With regard to usefulness, the results reveal great interest in the assistance provided, and the tools developed by IETS are perceived as being very useful. However, the study also reveals that from the baseline perspective, given that CPG implementation is a regulatory requirement, this actually increases the workload of organizations generating greater need for external support from technical assistance entities at territorial level.

One of the most relevant positive factors is that the IETS strengthens the work of organizations through the various types of assistance provided. The implementation tools support the activities

carried out by the hospitals. However, greater dissemination of these is required in the training process.

A negative factor is that to achieve a positive outcome with these processes in hospitals, the work capacity of professionals must be strengthened, given their low level of commitment. Public hospitals are poorly equipped to implement structured implementation processes due to sparse resource availability, high staff turnover, and the lack of political will among hospital managers.

Taking the results into account, the following elements were established to be included in the CPG implementation program:

- Include an analysis of the administrative political context in the implementing and assistance phases.
- Provide instructions for professionals to enhance comprehension of the implementation tools.
- Seek greater interaction among the various implementation tools, making them more dynamic.
- Develop implementation tools for mobile devices such as tablets and smart phones.
- Include tools and CPGs in staff training for human resources in health.

DISCUSSION

Implementation of clinical practice guidelines is a legal requirement in Colombia, but novel in scope and extension, considering the regulations governing the Colombian health system (5).

To facilitate the implementation process and narrow the gap between theory and practice, the MoH developed a clinical practice guideline implementation manual (6) which was published in March 2014.

The evidence implementation process should be active, planned, strategic, and involve all interested parties including professionals, health service providers, and decision-makers. The characteristics of the process—and how it is perceived—should always be assessed in order to evaluate and improve the structure of the activities (7).

The assessment criteria were defined with reference to the short-term categories established by Proctor et al. (8), who indicate that the usability, acceptability, and ease of use of the implementation tools should be determined early on.

By characterizing and mapping the actors and the system, it was possible to establish that while CPG implementation might be compulsory, hospitals seem to present various elements that impede the satisfactory performance of the activities. Among the situations that hinder implementation are high staff turnover, hospital cash flow, knowledge gaps concerning implementation processes and, most importantly, conflicting interests among the system's governing entities, monitoring institutions and organizations that contract and cover costs for the services provided. This correlates with the McKillop findings, which indicate that implementation is contextual and depends on the work of the implementation team (9). Using implementation tools facilitates the process in a general fashion, as described by Yang in a study on the implementation of thyroid cancer guidelines (10).

The interviews with specialists at the institutions and the data compiled from the surveys show that the work and tools developed by IETS improve understanding of the process; however, the organizations cannot guarantee the resources needed to implement the CPG recommendations. This corroborates the PARIHS Framework, which indicates that one of the key elements in the implementation process is the context of the implementing entity (11).

Finally, Bohmer (12) describes three scenarios to be taken into account with regard to unsuccessful implementation in organizations: firstly, not knowing what to do, secondly, not doing what we know, and thirdly, even when we know what to do and we do what we know, we fail to do it well. These situations reflect the opinions expressed by professionals who argue that increased (continuous and interactive) educational processes would favor implementation processes. This, however, contradicts the survey results which point to inadequate organizational management as the principal barrier rather than knowledge gaps.

Strengths and weaknesses

With respect to the characteristics of the project, the assistance provided to the institutions is considered adequate, but their capacity to receive it is less than optimal. This is reflected by the

fact that key specialists participated extensively in the process and in responding to the interview, while health professionals who participated expressed little interest in responding to the survey (27%). This makes it difficult to generalize from the responses obtained.

By establishing a normative structure that obliges health providers to improve CPG implementation, patient outcomes would ultimately be strengthened through the changes resulting from the tools and assistance activities. This, in turn, would make this type of activity sustainable over time, allowing it to be incorporated into other health system policies and regulations.

CONCLUSIONS

Both the implementation tools and the technical assistance provided are perceived as useful and acceptable, although implementation in participating hospitals is low. These findings should help convince the Ministry of Health and Social Protection, the IETS, and Colciencias, among others, to further expand the development of these tools, convince hospitals to develop active information transfer strategies in their CPG implementation programs, and convince other decision-makers to make greater efforts toward implementation and changes in clinical practice.

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Conflicts of interests. None declared by the authors.

Disclaimer. The authors are solely responsible for the views expressed herein, which may not necessarily reflect the policy or opinion of the PAHO/WHO.

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Evaluación de herramientas de implementación de la Guía de Práctica Clínica de infecciones de transmisión sexual

RESUMEN

Objetivo. Establecer la aceptabilidad, percepción de utilidad y la implantación de las herramientas de implementación y el acompañamiento técnico del Instituto de Evaluación Tecnológica en Salud (IETS) en los hospitales de dos regiones de Colombia.

Métodos. Se desarrolló acompañamiento para la implementación de la Guía de Práctica Clínica (GPC) en 24 hospitales (17 de Antioquía y 7 de Cundinamarca) en zonas de alta prevalencia de infecciones de transmisión sexual (ITS), así como la instalación de las herramientas de implementación. Se aplicaron encuestas a los profesionales y entrevistas a los referentes.

Resultados. Del total de los encuestados, 86% conocen la GPC, 86% las recomendaciones trazadoras, 79% los flujogramas interactivos, 82% las hojas de evidencia y 41% nunca utilizó las herramientas de implementación. De los encuestados que han utilizado las herramientas, 55% lo hacen en el ordenador del sitio de trabajo, mientras que 24% utiliza su teléfono personal. Las herramientas de mayor utilidad son las hojas de evidencia y los flujogramas con 98% y las recomendaciones trazadoras con 92%. Las de más baja utilidad son las herramientas de impacto presupuestal (81%).

Conclusiones. Las herramientas de implementación y el acompañamiento técnico en los hospitales de dos regiones de Colombia se perciben como útiles y aceptables, aunque el grado de implantación es bajo. Los hallazgos de esta investigación contribuirán para que los diferentes actores, como el Ministerio de Salud y Protección Social, el IETS y el Departamento Administrativo de Ciencia, Tecnología e Innovación (Colciencias) entre otros, puedan mejorar los programas de implementación de guías de práctica clínica.

Palabras clave

Implementación de plan de salud; guía de práctica clínica; infecciones de transmisión sexual.