SCALING-UP THE NURSING SCHOOL MODEL TO INCREASE COMMUNITY-BASED ACCESS TO CONTRACEPTION IN THE DRC:

An In-depth Assessment from Multiple Stakeholder Perspectives

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Full Report*

Scaling-up the nursing school model to increase community-based access to contraception in the DRC: an in-depth assessment from multiple stakeholder perspectives

by

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Executive Summary

This study evaluated the scale-up of an innovative approach to contraceptive service delivery in the Democratic Republic of the Congo (DRC) on multiple outcomes: fidelity to design, acceptability, sustainability, satisfaction, adoption by other organizations, penetration, and efficiency. The intervention consisted of incorporating a family planning module into the training of third-year nursing students, who then counseled and delivered services during community outreach events as their practicum several times a year through the end of their fourth year in selected provinces. Eight different stakeholder groups (for a total of 1238 persons) were interviewed – three by telephone survey, three by in-depth interviews, one by in-person interview, and one by focus group – at the national and provincial level in late 2023. Data were triangulated across stakeholder groups for each outcome. The scale-up of the nursing school model achieved many of its desired outcomes in terms of fidelity to design (across the six WHO domains of health systems strengthening), acceptability, satisfaction, penetration, adoption, and efficiency. Two areas in greatest need for improvement include pervasive contraceptive stockouts and difficulties in accurately entering the data on quantities of contraception distributed by students into the national health information system (SNIS). There is widespread concern for the sustainability of the model and near virtual agreement that the government should take ownership of the model, especially for the purchase of contraception. The DRC model originated from a scarcity of government or donor resources to pay community health workers but has proven to be a cost-effective means of increasing access to contraception. The results of this research will inform the further expansion of the model within the DRC and possibly to other countries facing similar challenges.

I. Introduction

A. Background

Modern contraceptive use remains low in the Democratic Republic of the Congo (DRC), estimated as 16.6% among all women of reproductive age as of 2023,[1] even in comparison to the average for Sub-Saharan Africa (SSA) as a whole (23.4% in 2022).[2]

The reasons are well documented. On the supply side, family planning in the DRC is managed in patchwork fashion across the 26 provinces and 519 health zones in the country the size of Western Europe. The program is highly donor-dependent, and the provinces and health zones often reflect the interests and priorities of donors. As such, some provinces benefit from support for family planning; others do not.[3] On the demand side, societal norms and low levels of female education continue to favor large families. Gender inequality decreases female autonomy in decision-making.

The DRC government remains favorable to family planning; it pays the salaries of government workers and provides office space, but almost no support for programmatic activities. (The one exception has been the use of government funds for contraceptive procurement in 2013, 2017, and 2021). The National Program for Reproductive Health (PNSR) serves a key role in establishing norms and guidelines, providing training in contraceptive service delivery, and managing contraceptive logistics in coordination with others. Yet it has neither the resources nor the personnel to manage service delivery at the national level. Rather, the major donors – USAID, World Bank, Central African Forest Initiative (CAFI), and FCDO/UK – support family planning in selected provinces, either as part of an integrated primary healthcare project or specifically for family planning.[4]

Family planning services are available in all provinces through government and private health facilities, but access to a full range of contraceptives delivered by trained personnel differs markedly by location. The 2017-18 Service Provision Assessment (known locally as the EPSS) showed that only 68% of health facilities in the DRC had the commodities and trained staff necessary to provide family planning services.[5] As in many low- and middle-income countries (LMICs), alternative approaches to service delivery – contraceptive social marketing (CSM), community-based distribution (CBD), and social franchising – have been developed to complement clinic-based services.

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[1] New, JR and Alkema, L (2015). Family Planning Estimation Tool (FPET). Available at http://fpet.track20.org/

[2] Rosenberg, Rebecca, John Ross, Karen Hardee, and Imelda Zosa-Feranil. "The National Composite Index for Family Planning (NCIFP): Results and Methodological Issues." Gates Open Research 6 (2022). https://doi.org/10.12688/gatesopenres.13464.1.

[3] Kwete, Dieudonné, Arsene Binanga, Thibaut Mukaba, Théophile Nemuandjare, Muanda Fidele Mbadu, Marie-Thérèse Kyungu, Perri Sutton, and Jane T Bertrand. "Family Planning in the Democratic Republic of the Congo: Encouraging Momentum, Formidable Challenges." Global Health: Science and Practice 6, no. 1 (2018): 40–54. https://doi.org/10.9745/ghsp-d-17-00346. p. 41.

[4] Bertrand, JT. (2024). Fifty Years of Family Planning in the Democratic Republic of the Congo: The Dogged Pursuit of Progress. London: Routledge. P. 269.

[5] Ecole de Santé Publique de Kinshasa ESPK/Kinshasa, République démogratique du Congo and ICF. "Republique démocratique du Congo: Evaluation des presentations des services de soins de santé (EPSS) 2017-2018." Kinshasa, République démocratique du Congo: ESPK and ICF, 2019. Available at http://dhsprogram.com/pubs/pdf/SPA30/SPA30.pdf. P. 26

B. Development and scale-up of the nursing school model through iterative pilot testing

In 2015 a new model of community-based distribution was pilot tested for feasibly and acceptability: the training of medical and nursing school students in the fundamentals of family planning service delivery, coupled with a year-long field practicum in which students offered a range of contraceptive methods during intermittent outreach events, door-to-door distribution, or sales from their homes. As a collaboration among multiple entities (Tulane International, the D10 [*Direction de la Santé de la Famille et des Groupes Spécifiques,* the Directorate of Health for Family and Specific Groups] and the DESS [*Direction de l'Enseignement des Sciences de Santé,* the Directorate of Health Sciences Education]), this first pilot demonstrated that clients were satisfied with DMPA-SC as a method and with the students as providers. The students appreciated the opportunity for hands-on interaction with clients (something that was limited in their classroom training) and the chance to give back to the community.[6] [7] The more far-reaching discovery was the potential of this cadre of students to increase access to low-cost contraception in the short run, while improving the quality of service delivery for future generations of healthcare providers.

The initial success of the model made it an excellent candidate for scale-up, defined as a "deliberate effort to increase the impact of successfully tested health innovations to benefit more people and foster policy and program development on a lasting basis."[8] From the start, the initiative was guided by the nine-step ExpandNet framework. Building on the original pilot, two subsequent studies evaluated the feasibility and acceptability of using nursing students for additional types of service delivery in a community outreach setting: to insert Implanon NXT[9] and educate interested clients in self injecting DMPA-SC,[10] which aligned with the WHO guidelines for appropriate types of family planning task-shifting for different cadres.[11]

Consistent with the principle of engaging governmental stakeholders from the start,[12] two government agencies played critical roles in the scale-up: the DESS and the PNSR (National

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[6] Binanga, Arsene, and Jane T. Bertrand. "Pilot Research as Advocacy: The Case of Sayana Press in Kinshasa, Democratic Republic of the Congo." Global Health: Science and Practice 4, no. 4 (2016): 542-551. Accessed June 30, 2023. https://doi.org/10.9745/GHSP-D-16-00236. P. 543-545

[7] Bertrand, Jane T., Paul Bukutuvwidi Makani, Julie Hernandez, Pierre Akilimali, Bitshi Mukengeshayi, Saleh Babazadeh, and Arsene Binanga. "Acceptability of the Community-Level Provision of Sayana® Press by Medical and Nursing Students in Kinshasa, Democratic Republic of the Congo." *Contraception* 96, no. 3 (2017): 211–15. https://doi.org/10.1016/j.contraception.2017.05.014. P 212

[8] World Health Organization, Department of Reproductive Health and Research - ExpandNet. Nine steps for developing a scaling-up strategy [Internet]. World Health Organization; 2010 [cited 2021 Sep 21]. p. 1–35. Available from: https:// www. who. int/reproductivehealth/publications/strategic_approach/ 9789241500319/en/

[9] Hernandez JH, Akilimali P, Glover A, Bertrand JT. Feasibility and acceptability of using medical and nursing students to provide Implanon NXT at the community level in Kinshasa, Democratic Republic of Congo. BMC Womens Health. 2020 Jun 24;20(1):133. doi: 10.1186/s12905-020-00993-9. PMID: 32580766; PMCID: PMC7315479

[10] Bertrand JT, Bidashimwa D, Makani PB, Hernandez JH, Akilimali P, Binanga A. An observational study to test the acceptability and feasibility of using medical and nursing students to instruct clients in DMPA-SC self-injection at the community level in Kinshasa. Contraception. 2018 Nov;98(5):411-417. doi: 10.1016/j.contraception.2018.08.002. Epub 2018 Aug 16. PMID: 30120925; PMCID: PMC6197832.

[11] Task shifting to improve access to contraceptive methods http://www.who.int/reproductivehealth/publications/family_planning/task_shifting_access_contraceptives/en/

[12] Mai M, Hassen E, Ntabona AB, Bapura J, Sarathy M, Yodi R, Mujani Z. Government Ownership and Adaptation in Scale-Up: Experiences from Community-Based Family Planning Programme in the Democratic

Program for Reproductive Health), both within the Ministry of Health. In 2018, these two agencies collaborated in developing a competency-based family planning curriculum, which was then introduced during Year 3 of the four-year nursing school training through the ITMs (*Instituts des Techniques Médicales*). It consisted of eight days of classroom instruction in counseling, contraceptive technology, management of side effects, and data collection, followed by a 2-day field practice in which nursing students would counsel clients and administer methods under the supervision of their instructors. This training prepared them to continue community-level counseling and service delivery through periodic community outreach events in the form of a practicum, with referrals to fixed clinics for additional methods (e.g., IUDs) or complicated cases. The nursing schools coordinated the outreach events with the local *Médecins Chefs de Zone* (chief district medical officers), who generally welcomed the program as a means of increasing access to contraception within their target area. Additional details of the model are described below in relation to "fidelity to design."

The nursing school model has met with considerable enthusiasm as a promising mechanism for increasing access to contraception, while building the capacity of the future healthcare providers in contraceptive delivery. An initial evaluation of the model conducted in 2019 in the provinces of Kinshasa and Kongo Central yielded several key findings.[13] The nursing school personnel were generally favorable toward the introduction of the family planning model into the curriculum. The model had increased access to contraception, as reflected by 461,769 couple-years of protection (a measure of the quantity of contraceptives distributed) during a four-year period. Among graduates of the nursing program that received the training in family planning, only 40% had found paid employment in the year following graduation; yet among those, the vast majority had been able to use the skills obtained from this training for counseling clients and providing contraception.

C. Objectives of the study

The previous assessment of the nursing school model described its evolution, consistent with the nine steps of the ExpandNet process.[14] The current study assesses the outcomes of the scale-up, using the framework of Proctor et al. for three types of outcomes in implementation research (See **Figure 1**). Each outcome has multiple categories, only some of which are covered in this research: (1) implementation outcomes (fidelity, acceptability, sustainability, adoption, and penetration); (2) service outcomes (costs); and (3) client outcomes (satisfaction). Conducted almost ten years after the first pilot test, this study addresses key questions:

1) Fidelity: Is the model currently implemented according to the original design?
2) Acceptability: To what extent is the model acceptable to different stakeholders who play some role in the implementation of the model?
3) Sustainability: Will this model remain sustainable in future years?
4) Adoption: Have other organizations adopted/replicated it, with what results?

Republic of the Congo. Afr J Reprod Health. 2019 Dec;23(4):35-45. doi: 10.29063/ajrh2019/v23i4.5. PMID: 32227738

[13] Ntabona, Alexis, Arsene Binanga, Mr. Désiré Bapitani, Beatrice Bobo, Bitshi Mukengeshayi, Pierre Akilimali, Gloria Kalong, Zenon Mujani, Julie Hernandez, and Jane T Bertrand. "The Scale-up and Integration of Contraceptive Service Delivery into Nursing School Training in the Democratic Republic of the Congo." *Health Policy and Planning* 36, no. 6 (2021): 848–60. https://doi.org/10.1093/heapol/czab014. P 848-860.

[14] Ntabona et al.

5) Client satisfaction: To what extent are the beneficiaries (family planning clients) satisfied with the services received?
6) Penetration (coverage): To what degree has the model been expanded in terms of number of provinces and number of health zones?
7) Efficiency: What is the cost per unit of output and has it changed over time?

This research examines the perspectives of multiple stakeholders at the national and provincial levels, using both quantitative (surveys) and qualitative methods (in-depth interviews and focus groups). The results of this study will inform the further expansion of the project with the DRC and possibly to other countries facing similar challenges.

II. Methodology

A. Overview of the data collection for the study

This mixed-methods study was conducted from October 1-December 24, 2023. Ethical approval for this study was obtained from the Kinshasa School of Public Health *Comité d'Éthique* (#ESP/CE/063B/2023) and the Institutional Review Board at the Tulane University (#2023-755).

Data were collected from multiple categories of stakeholders (sources) at the national and provincial level. The number of data sources used to examine each selected outcome ranged from one (e.g., for penetration) to five (e.g., acceptability). Table 1 outlines the types of data collection methods used, the number of respondents, and the domains of the WHO framework for health system strengthening covered for each type of stakeholder. Two types of qualitative interviews were used: in-depth interviews (IDI, among government health authorities at the national and provincial levels and staff of iNGOs implementing the model providing financial and technical support to the operation) and focus groups (among parents of nursing students). In addition, two types of quantitative surveys were administered: telephone interviews (among the chief district medical officers (known locally as *médecin chef de zone* or MCZ), focal points/instructors, and nursing students) and client-exit interviews (CEI) among clients receiving family planning services. To reduce costs, the in-person data collection for IDIs and CEIs was limited to the three provinces with the most active programs: Kinshasa, Haut Katanga, and South Kivu.

In addition, program data and service statistics were analyzed to measure adoption and penetration of the program and cost per CYP over time. Data sources are displayed in **Table 1.**

B. Elements common to all types of data collection

Prior to data collection, interviewers received a training program ranged from 2 to 4 days that covered research ethics, informed consent, interviewing techniques, and the content of the questionnaire or discussion guide.

The interviewers were trained to explain the data collection process to each group of stakeholders, including confidentiality and anonymity, after which they obtained their informed consent. An information sheet with the principal investigator's contact details was

shared with all respondents, and they were encouraged to call in case they had any doubts later on.

C. Qualitative data collection

1. In-depth interviews: Four interviewers were responsible for this task. The discussion guide, pretested during interviewer training, covered seven topics: training, service delivery, information systems, commodities, finance, advocacy, and leadership & governance, with slight differences in wording, based on the role played by the type of respondent in the scale up of the model. The interviews were conducted in French using a structured interview guide, which consisted of open-ended questions and probes, which ran for 30-75 minutes. Each interview was audio-recorded. At the close of the interview, health authorities received a $50 participation fee (which is common in the DRC). The de-identified files were then transcribed by experienced personnel.

2. Focus group discussions: In each of the three main provinces, a focus group discussion was conducted with parents who were members of the parent-teacher association (ANAPECO). Facilitators began by greeting the participants and reminding them of the study's objectives and the ethical principles involved. The principles included ensuring absolute confidentiality of the focus group discussions, not disclosing the content outside the activity, encouraging respectful participation, allowing individuals to refrain from sharing personal information, and opting out of discussions or leaving at any time without consequences. The focus groups consisted of 9 to 12 parents of nursing school students, with both men and women participating in the same discussion. Participants were asked a series of nine questions regarding their knowledge and opinions about the family planning (FP) module, the impact of the FP module on their children's professional development prospects, and their willingness to contribute financially to the module. Focus group participants received $5.00 (US) to offset transportation expenses. Each session lasted between 75 to 90 minutes and was audio-recorded. The recordings were later translated and transcribed by the focus group moderators.

D. Quantitative data collection

1. In-person interviews: three data collection supervisors interviewed the MCZ using ODK. The questionnaire allowed for collection of comments as well. The sample included the MCZs in Kinshasa as well as the capital cities of Haut Katanga (Lubumbashi) and South Kivu (Bukavu). In approximately 25% of the cases, if the MCZ was not present, another member of the health zone staff (often the Nursing Supervisor) was interviewed. The fee for participation was $50.

2. Telephone interviews: A total of 15 trained interviewers conducted phone interviews with focal points and nursing students, operating from a call center in KSPH 7 days a week between 8 AM and 6 PM. Respondents were called up to 6 times at varying times of the day and at least once during the weekend. If a respondent answered and wanted to be called back within 15 min, the operator could accommodate the request; otherwise, the respondent was called back the next day. A respondent was not called back if she/he refused to consent to the study or if someone answered the call who did not know the respondent. Respondents who completed the survey were sent the equivalent of US $2 phone credit the day after completing the interview.

3. Client exit interviews (CEI): Fifteen experienced, trained interviewers conducted in-person interviews with clients who had participated in family planning outreach in the major city of the three selected provinces: Kinshasa, Lubumbashi, and Bukusu. Once clients completed their interaction with the nursing student, they were invited to participate in a survey. Those interested were asked to join the interviewers in a designated area that would ensure auditory privacy. Interviewers dressed in attire that differentiated them from the service provision personnel (nursing students). Following the completion of the informed consent procedure for the CEI, interviewers queried clients regarding their socio-demographic traits, history of family planning, experience with receiving a contraceptive method that day, and their level of satisfaction with the counseling and services rendered. Each respondent who completed the interviewed received a mobile airtime card worth about two US dollars.

E. Qualitative data analysis

The interviews and focus group discussions were recorded and transcribed by members of the research teams. For those conducted in local languages, the transcripts were translated into French by members of the research teams who were fluent in the local language and French. A team of three researchers was assembled to analyze the transcripts using NVivo 14. All transcripts were double-coded, and the team held weekly meetings to address any coding discrepancies and reach a consensus. When coders disagreed, the third researcher helped resolve the issue by determining the appropriate code name, description, and relevance to specific lines or segments of text. Thematic content analysis was applied to the transcripts, identifying common themes and patterns in relation to the study's objectives and research questions.
The codebook was developed through an iterative process combining deductive and inductive approaches. Deductive codes were initially drawn from the main themes in the interview guides (such as service delivery, training, information systems, commodities, finance, and leadership/governance). This was followed by an inductive process, where team members identified codes directly from the data. Inter-coder agreement was assessed on a random sample of transcripts, with a minimum threshold of 80%, which all the selected transcripts exceeded.
The team synthesized the qualitative data by collaboratively identifying overarching themes and more narrow categories, along with selecting quotes that best illustrate the core ideas in the data.

F. Quantitative data analysis

The do-files underwent regular verification and cleaning, with allowed for quick verification and correction of errors. The analyses were performed using Stata version 17. Means and standard deviations (SD) were calculated for continuous variables, whereas proportions and their related 95% confidence intervals were derived for categorical data. We utilized the chi-square test and Fisher's exact test when required.

G. Presentation of results

We present this large amount of information according to the seven outcomes of interest in this study: fidelity to design, acceptability of the model, sustainability, satisfaction among beneficiaries, adoption of the model by other organizations, penetration (coverage), and

efficiency. Primary data collected from the eight categories of stakeholders described in Table 1 are used to address the first four outcomes. Program data and service statistics inform the last three outcomes.

Fidelity to design is important for assessing the extent to which the operation of the model in the field aligns with the original parameters (design) of the model. To answer this question, we have explored the inner workings of the model on the six domains of the WHO health systems strengthening framework. For each domain, we begin with a summary description of how the model is expected to operate, based on the "Implementation Guide for the Nursing School Model."[15] We list the relevant groups of stakeholders whom we interviewed regarding that domain, and we present the results obtained from both qualitative and quantitative instruments. This deep dive into the inner workings of the model represents the lion's share of the findings. In the discussion, we identify the areas in which the implementation at the field level has conformed to the original model, as well as those areas in which it has deviated. This analysis informs the discussion of the strengths of the model (that will benefit the expansion of the model within the DRC) and the shortcomings or limitations (that may be subject to improvement in future iterations of the model).

Because the results for multiple stakeholder groups appear across all six domains, we present the quantitative findings in tabular form by stakeholder group rather than by domain: specifically, focal points (**Tables 2a and 2b**), nursing students (**Tables 3a and 3b**), family planning clients (**Tables 4a and 4b**) and MCZ (**Table 5**).

We examine the acceptability and sustainability of the model from the perspective of those involved in its implementation. By contrast, satisfaction is assessed from the perspective of the clients receiving family planning services from the nursing students. In the final section of results, we assess adoption of the model by other organizations, penetration (coverage), and efficiency, based on program data and service statistics.

III. Fidelity to Design: Training

A. Details of the model: Training

A system of "cascade training" is used, consisting of:

(1) training of master trainers at the national level;

(2) training of trainers for groups of 3-4 from participating provinces (including the BESS, PNSR provincial coordinator, and one MCZ);

(3) training at the provincial level of nursing school focal points (instructors), members of ECZS (*Équipe Cadre de la Zone de Santé*/Health Zone Management Team), and other PSNR provincial staff; and

(4) training of nursing students during their third year (of four) of the nursing school curriculum.

[15] Guide de mise en œuvre du modèle des écoles de sciences infirmières (ITM) pour la distribution communautaire des contraceptifs, 2024. Tulane International, unpublished.

The training of trainers takes place in Kinshasa or in a provincial capital, based on cost considerations. Staff from the PNSR, the DESS, and implementing partners impart a 10-day course, using the standard PNSR curriculum for service providers. Topics covered include contraceptive technology, side effects and their management, contraindicators, distribution and administration of various contraceptives methods, client follow-up, counseling techniques, use of forms to collect data on the number and types of contraceptives distributed, referral of clients to the health facilities in case of need, and community mobilization. This training also includes the principle of adult learning, training methods and techniques, development of micro-lessons, and the supervision of CBD.

This newly trained cadre of personnel returns to the province, where they deliver similar training to provincial level personnel: personnel from ECZS at health zones, and nursing school instructors from whom focal points are selected - the individual in each school charged with overseeing all aspects of the training and fieldwork; often, the focal point is also the instructor of the FP module in the school).

These instructors, who are part of the regular teaching staff at the nursing schools, in turn administer the 10-day FP module to all nursing students as part of their third year of training. The training takes places on the same day in all participating nursing schools countrywide. Students are trained on the full range of contraceptives to be distributed in the community, except DMPA-IM, IUDs, and permanent methods. In addition to Implanon NXT, as of 2023 the students are trained to insert Jadelle and Levoplant implants. They are also trained to teach interested clients to self-inject DMPA-SC and (in year 4 of the curriculum) to remove implants.

The final two days of the students' training includes a *stage* (field practicum), in which the students provide services in a field setting under the close supervision of their instructor and the MCZ. They counsel members of the community and provide interested clients with a range of contraceptive methods (including three types of implants, injectables, pills, emergency contraception, DMPA-SC, condoms and CycleBeads, as well as advice on practicing lactational amenorrhea). Staff from the DESS and HZ also oversee this work.

At the end of the training, each student receives a beige vest that identifies them as a community-based distributor (CBD), a backpack, contraceptive products, supplies (e.g., cotton, disinfectant) for administration of methods, pregnancy tests, and forms to collect data on contraceptives distributed.

B. Stakeholders interviewed on this topic

Seven stakeholder groups provided insights on the subject of training: national level authorities, provincial level authorities from *Bureau d'Enseignement des Sciences de la Santé (*BESS) and PSNR, and managers from iNGO implementing partners (through in-depth interviews); ANAPECO parent groups (in focus groups); and MCZ, focal points, and nursing students (via telephone surveys).

C. Results

The national-level health authorities who participated in the in-depth interviews highlighted the strengths of the current training in contraceptive services delivery, particularly in producing experienced students. Key informants indicated that students benefit from the

competency-based approach where skills are acquired through a combination of theory and practice. They also emphasized the unique opportunity for the students to apply their knowledge in the field through field practice.

> *"So, it's all about acquiring skills and, above all, it's a skills-based training program where, in addition to the theoretical subjects given to students, you have practical stations." (National level authority)*

> *"The strong points for me are that when the conditions are right, the learners are transformed. Don't forget that we all went to university and as far as family planning is concerned, we learned it in the form of modules. But it's rare today to say that we handled these methods during our training and that we offered these methods as we were taught them. There's an opportunity where we say to the student, here's what you need to know, here's how you need to act when you're in front of a client. It's a laboratory and mistakes are allowed at that level; we correct them, then they are prepared to face the reality of the field. So, for me, it's a type of teaching that we can hope for in our country, that is, to train what we call skilled workers." (National level authority)*

While national-level health authorities expressed satisfaction with the training, one cited a minor limitation regarding the limited range of contraceptive methods covered in the training (i.e., excluding several methods such as the IUD). However, this individual also acknowledged the difficulties of offering such methods in a community-based setting.

Provincial level authorities: The presence of many instructors (teachers) trained in family planning was seen as a strength of the nursing school models.

> *"One of our strengths is that we have instructors trained in FP. In any case, among the instructors trained in FP, who the PNSR trained with the support of Tulane, 90% of the instructors are still there, and that's a strong point so that we can count on them." (Provincial level authority)*

Although all instructors receive training, one provincial authority emphasized the necessity of ongoing refresher courses, as the family planning field has evolved. This individual highlighted that certain instructors had undergone their initial training three to four years ago and had not received any subsequent training since then.

Provincial-level health authorities described several shortcomings of the module, including the lack of placebo pills for training purposes, the relatively brief length of the training, the inability of schools to continue to work with and provide methods to students after they graduate, and the limited career prospects for some graduates. This situation results in a loss for the healthcare system as a whole, since those graduates are unable to counsel and administer methods to women in need.

> *"It's the whole organization of our health care system and our education system. Why did I say that? Because, at the end of the day, we're training young people who don't feel confident that they'll be recruited to continue offering their services. That's how you end up with some of them becoming currency traders, and others becoming small vendors, and so on." (Provincial level authority)*

ANAPECO: The parents of nursing school students recognized the benefit of the training for their children. Consistent with other stakeholders, they pointed out that upon completing the program, students emerge with valuable expertise in providing FP services.

> *"A young person who undergoes this training not only studies, but also practices at work if he's called upon to do so. And if he finds a job, he already has all the skills to carry out his work with ease." (ANAPECO parent)*

However, parents voiced some concerns. One related to management of side effects. A few parents pointed out instances where clients experienced side effects during or following community-based events, such as external bleeding following an injection of DMPA-SC, absence of menstrual periods, or menstrual changes. They felt that the students were not adequately trained to manage side effects, and thus they were unable to assist effectively.

> *"One time my daughter injected Sayana into a lady, and the lady began to bleed. We had to direct the lady to the nearest center. When she got there, the center refused, saying she had to pay the money, whereas the method given by our children was free. The [students] don't have a solution for the side effects, they haven't been trained to deal with the side effects, so the child was so confused that he ran away from home, and in the end, we had to take the \woman to the nursing school, and it was at school where we found the solution. I think that when you teach them at least how to use the methods, you also have to teach them how to manage the side effects; otherwise, they're limited. You teach them how to insert the implant, but the child doesn't know how to remove what he's inserted. You could help us to broaden the content of training to include the management of its side effects." (Parent - ANAPECO)*

A second concern was the duration of the training course, which some deemed to be insufficient. They considered it too demanding to expect students to retain all aspects of the family planning course discussed within a week. Additionally, they stressed the importance of providing more time for students to digest the information and to gain additional practice before sending them to the community.

> *"About their training on family planning, we would have liked them to have more time to reconcile theory with practice and also for more time to be allocated to the theory because it's too condensed for one week so we would like to recommend that one week is extended to one month and that they also have enough time in the field for the management of the side effects…" (Parent - ANAPECO)*

Managers of iNGO implementing partners. The partner organizations replicating the model emphasized the strengths of the training received by the students. They particularly cited the use of a competency-based approach, an approach in which students must demonstrate that they have acquired specific knowledge and skills. Putting into practice the knowledge acquired in class was cited as the main advantage of the FP module, which aims to equip individuals with skills that can directly be applied in the field after graduation.

> *"Once they've validated their ability to do mannequin insertion at school, it's then that these students go into the field accompanied by their instructors. As you can see, at the end of this training, these students are ready to provide services. So that's a real strength, compared with other training courses where there's a lot of theory, but no practical application." (Manager, Implementing partner)*

While these managers expressed satisfaction with the current training of nursing school students, they had certain concerns. For example, one mentioned that the FP training (and the role students play as community-based distributors) might distract students from their objective, which is to dedicate equal effort to studying all the modules of the nursing curriculum. Additionally, several managers mentioned that once students graduate, they no longer can participate in the program. Since there are no resources available to supply them with contraceptives or supervise their work, this potential recourse for society is lost. A related concern was the lack of career opportunities for some graduates.

> *"But at the very least, I think we need to think about how to support all these people who have been trained through this model, so as not to lose sight of them. It's an investment that's been made in these people. If we can think with the people in charge of this program, and even with the Congolese state, about the future of these young people, to supervise and guide them. There aren't many FP providers in the country, but when we already have this opportunity and we can't ensure the future of these people, I think that's about the only limit I can really put forward." (Implementing partner manager)*

To address the challenge of tracking nursing school graduates and leveraging their family planning expertise, one manager proposed creating a comprehensive map of students to identify all graduates by health zones. The aim would be to invite these graduates to participate when community-based events are organized in their affiliated health zones, which would help address the challenge of underutilization of trained nursing school graduates and enhance the delivery of FP services to communities.

Focal points: Tables 2a and 2b include data obtained from the focal points. A total of 135 focal points were interviewed via phone; 82% were male, 18% female. The average age was 44 years. The vast majority (93%) had completed some level of education beyond high school. Most (85%) were married, and 91% had children. The two provinces with the largest number of focal points interviewed were Kongo Central (with 33% of respondents) and Kinshasa (32%), the provinces with the longest history of using the model (see **Table 2a**).

Of the 135 focal points interviewed, 87% reported having been trained for their role. In terms of topics covered, they most frequently mentioned training the students (82%), collecting and compiling the data generated by the students (82%), completing the reporting forms (78%), and transmitting these data (78%). Less frequently mentioned (by less than 7 in 10) were topics related to logistics (requisitioning contraceptives, receiving commodities, and distributing transport fees to the students).

Almost all (99%) of the focal points had in turn trained nursing students in their schools. However, only 72% felt that the training they provided was sufficient to prepare the students to offer the full range of methods.

Three-quarter (75%) of the focal points had been trained on data reporting into the DHIS2, though two-thirds had received that training over two years ago. Two-thirds (68%) had received written instructions during training on the task of data collection. The majority (75%) felt they were well-trained to enter the data into the DHIS2 system.

Nursing students: **Tables 3a and 3b** includes data from the nursing school students. A total of 412 nursing students from participating schools were interviewed by phone from three provinces: Kinshasa (n=200), Sud Kivu (n=120), and Haut Katanga (n=94). Sixty-four percent were female, 36% male. The average age ranged from 21-23 years over the three provinces. The large majority (93%) were single, and 89% did not have children. Almost all (96%) had a personal cell phone (Table 3a).

An earlier pilot study had paved the way for the authorization of nursing students to provide implants in community settings, as well as other non-clinical methods. The vast majority (98%) of students in all provinces reported that they had been trained to insert implants, but fewer had been trained to remove implants: approximately 75% in Kinshasa and Haut Katanga, 91% in Sud Kivu. Just over half the students reported having learned to teach women to self-inject DMPA-SC, with the percent varying notably by province, ranging from a high of 79% in Sud Kivu to only 39% in Kinshasa.

Over 90% of students were satisfied with the training they had received in family planning, including 36% who were highly satisfied, 14% who were more than satisfied, and 43% who were satisfied. Conversely, 7% were partially or not at all satisfied. Among those expressing dissatisfaction, the main reason was a lack of practical training. In terms of what they liked the least about being trained in family planning, the most common response (between 16% – 40%) was the lack of financial compensation. Other issues mentioned by less than one in 10 included frequent stockouts, rumors and resistance from the community, insufficient training, and inadequate support from supervisors. The vast majority (at least 98% in all three provinces) felt that their training in family planning would be useful to their future (**Table 3b**).

IV. Fidelity to Design: Service Delivery

A. Details of the model: service delivery

Once trained, third year and fourth year nursing students participate in family planning counseling and service delivery at the community level. Two main approaches include mini-campaigns and "routine" service delivery. Mini campaigns refer to community outreach (scheduled 3-4 times a year, adapted to the school calendar established by the DESS), at which a group of the nursing students with their instructor make services available in a central location near an existing health facility. The students provide group talks and/or individual counseling, present the range of contraceptive methods as well as their side effects and management of side effects, conduct a pregnancy test if medically indicated, discuss the client's preference for method, and then administer that method on site. Contraceptives are given free of charge during mini campaigns. "Routine" service delivery refers to this same type of counseling and distribution of methods outside of campaign days, during household visits or through sales to family and friends from their homes, at school, or other location. The CBD may charge a small fee during routine distribution. In cases where the client wants a method not available from the CBD (e.g., an IUD, DMPA-IM) or presents with persistent side effects, the CBD refers her to the nearby health facility. The term "mini campaign" differentiates this activity from major campaigns conducted on a larger scale (such as for the International Family Planning Day). To simplify, we refer to these mini campaigns as "campaigns" for the rest of this report.

The nursing schools work in close collaboration with several local entities: the provincial office of the PNSR, the provincial officer of the DESS (known as the BESS, that oversees the nursing schools in the province), and personnel from the health zones in which the family planning outreach takes place. The MCZ (chief district medical officer) also participates directly in the campaigns or designates someone from his office to do so.

Each school appoints a focal point responsible for overseeing all aspects of the family planning work on behalf of the school. In most cases, the focal point is also the instructor of the FP curriculum for that school. He/she is also responsible for contraceptive logistics, data collection, and data transfer to the health zone (described below).

B. Stakeholders interviewed on this topic

Seven stakeholder groups replied to questions regarding service delivery: national level authorities, provincial level authorities from BESS and PSNR, and managers from iNGO implementing partners (through in-depth interviews); ANAPECO parent groups (in focus groups); and focal points, students, and family planning clients (via survey).

C. Results

National-level authorities emphasized the role of the model in strengthening the healthcare system in the DRC, particularly in increasing contraceptive use in areas where it operated. These authorities brought up the quality of services delivered by nursing school students, noting that quality was not rigorously measured but assessed through observations and anecdotal evidence from clients. However, they cited the role played by the trainers and supervisors in both the classroom and the field to ensure the quality of the services provided by students. On balance, despite minor mistakes by the nursing students, these national authorities described the quality of the services as being within an acceptable range.

> *"Well, I'd prefer to wait for the evidence, because it's really with interviews in the community and satisfaction surveys that we could really answer that question. But at least, I tell myself that they don't go there by themselves. First of all, they have been trained, like any other service provider, and they are supervised, and we monitor each project. There are periodic follow-ups, and so on. Personally, I've already been to Kongo Central to see what it was like. It's true, there are always little flaws, but overall, I think it's fine. (National level authority)*

During in-depth interviews, one official suggested utilizing graduates of the program as mentors to current students to enhance the quality of services. The official argued for using such graduates to provide continuous supervision of the current nursing students, especially in the interim periods between official supervision visits from the PNSR that occur only a few times a year. The informant believed it would help reduce minor mistakes made by students and enhance the overall quality of services provided by nursing students.

> *"We need to see how we can capitalize on those who've finished to turn them into coaches or supervisors, mentors for those who are studying [...]. And even if the institutions that we are (PNSR and DESS) come down to supervise the students, if we can do peer supervision, that would be a very good thing." (National level authority)*

Provincial-level authorities emphasized the significant contribution of nursing school students to strengthening the health system in the DRC by providing services to adolescents. They highlighted the advantage of these students' relatively young age, enabling them to effectively connect with adolescents, a demographic often challenging to reach for older community-based distributors and health facility personnel.

> *"We've seen even the number of unwanted pregnancies reduced, […], and even in schools, the rate of unwanted pregnancies has decreased. So somewhere along the line, this model has been effective, especially among teenagers. As these are young people who also reach out to others, others easily approach them to try and avoid pregnancies and other sexual and reproductive health problems." (Provincial level authority)*

Provincial level authorities also highlighted the decrease in barriers to accessing contraceptive services that the model offered. They mentioned that nursing students have successfully been able to provide services to women who wouldn't have attended a community event or visited a health facility. They also emphasized the key role of students in referring clients to health facilities, resulting in women visiting them when they might not have otherwise.

> *"And where it strengthens the health system is the fact that this approach is truly community-based, where the CBD goes out and finds those people who don't want to go to the service delivery points or the health centers." (Provincial level authority)*

Based on observation and anecdotal evidence from clients, provincial level authorities judged the quality of services to be adequate. They had not received any complaints from clients. They believed that the training, monitoring, and supervision of nursing students explained the quality of services.

> *"The nursing students […] offer quality services, and that's what I've heard from the clients I've spoken to, and when I see how they're called, how clients call them, look for them, come and get them, that tells me there's quality. So, they're well-known and well-accepted by the community. Because I see the mothers who come to look for them at times when they're at school, asking: "UKO WAPI, MBONA NIKO NALAZIMA YA SERVICE YAKO" ["where are you? I need your services"], so that's an element that shows me that the quality is there. And so far, I think it's been three years since the program started, and we haven't yet had a complaint or unpleasant incident for which we've had to intervene." (Provincial level authority)*

ANAPECO Parents of the nursing students advocated for an increase in the frequency of community-based distribution events to improve access to contraceptive methods for women, citing potential benefits for both students and clients. For students, this would lead to increased counseling opportunities and practical experience in administering contraceptives, as well as reaching more women.

> *"In my opinion, we need to add [campaigns], to cast a wider net, because some mothers may be absent for one reason or another, and increasing the frequency of campaigns could give them the chance to participate in an awareness event." (ANAPECO parent)*

"I think we need more campaigns so that our children acquire more skills." (ANAPECO parent)

Parents in two of the three provinces were concerned about the safety of their children in the field. In Kinshasa, they described the presence of Kuluna (i.e., young criminals operating in the streets) as a significant threat to their children's safety. Additionally, they emphasized the challenges their children faced when encountering older men who opposed the work of nursing students and the concept of birth spacing. Parents suggested that media campaigns aimed at raising awareness about birth spacing and the benefits of contraceptive methods could facilitate the students' work and alleviate tensions during such encounters.

"There are certain difficulties that our children encounter in the field. When they approach certain couples, especially the mothers when the fathers aren't prepared in advance, the fathers aren't happy about the birth spacing, and these children face difficulties that lead to their insecurity in the field, and these children are at the mercy of certain ill-intentioned parents who don't know the ins and outs of birth spacing." (ANAPECO parent)

Managers in iNGO implementing partners. Most managers reported that the implementation of the model strengthened the health system in the DRC. They highlighted the fact that the model expanded the trained workforce providing family planning services. Other factors that strengthened the health system were the presence of a pool of provincial trainers capable of training nursing school instructors and the integration of data on the contraceptive methods distributed by nursing school students into the National Health Information System (SNIS).

"The system is also strengthened in the sense that, in the long term, we will have providers who have already understood and been well trained in family planning. These are valuable resources that significantly contribute to the system by enhancing the quality of services provided." (Manager, implementing partner)

Managers of partner organizations discussed the quality of services delivered by nursing school students and emphasized the need to rigorously measure it. In the absence of such assessments, these managers believed that adequate training, supervision (by numerous actors including instructors, nursing school focal points, MCZ, staff of the PNSR, and the DESS), and monitoring of students should ensure sufficient quality of services.

"I think that when everything comes together, when the training has been well done, when we've given them the tools they need to provide that service, when we've clearly defined the methods these students can distribute, the quality is there, and with the close follow-up we do, the quality is assured." (Manager, implementing partner)

MCZ (or other HZ officer**)** The model calls for the MCZ or his designated replacement to supervise students during the campaigns. Based on the telephone interviews, six in 10 of the HZ personnel reported having supervised a community event, and among this group, almost all were able to show their report from this supervision.

Focal points: Over 9 in 10 of the focal points reported being responsible for multiple tasks: training students, collecting data from the students and compiling them, managing commodities, distributing commodities to the students, supervising the students during campaigns, requisitioning commodities, dispatching kits to the DBC's, accompanying them to

the communities during training and campaigns, working with the students to improve their performance, compiling data generated by the DBCs, and reporting these data.

In terms of supervision, the two most frequent venues were outreach/campaigns (91%) and house-to-house distribution (41%). Four in five of the focal points (80%) had accompanied students to the field outside of the regular campaign days. According to 93% of the focal points, contraceptive distribution was free during campaign days (Table 2b).

Nursing students: Almost all the students had delivered services at a community outreach event or campaign (99%) [**Table 3b**]. A similar number (98%) had gone house to house. Somewhat fewer distributed contraception among friends and family from their own homes (88%) or to other students at the school (61%). Across the three provinces, students had participated in an average of 4-6 campaigns. Students consistently reported that they distributed methods free of charge at community outreach events (99%), whereas they tended to charge for methods when distributing them from their home (92%). In the latter case, they would receive around $3.84 U.S. on average per client (data not shown in table).

Most students (96%, Kinshasa; approximately 86% in the other two provinces) reported having inserted an implant at a community event. Of these students, almost all had inserted Implanon NXT. By contrast, approximately half had inserted Jadelle, and far fewer Levoplant (ranging from 16 % to 41%; Jadelle and Levoplant were only introduced into the program in late 2022. Over half the students in all provinces had removed an implant at a community event, with the percentage higher in Kinshasa (70%) than in Sud Kivu (57%) or Haut Katanga (53%).
The percentage of CBDs that reported having taught women to self-inject DMPA-SC varied considerably from a high of 80% in Sud Kivu to a low of 43% in Kinshasa.

Nursing students spent far more time distributing contraceptives in the context of campaigns than in "routine distribution" (outside campaigns). Among those reporting routine distribution, half reported doing this type of activity at least once a week. Reasons for not doing it more frequently included not having enough time (42.3%), not having enough contraceptive (34.1%) and lack of financial incentive (17.1%).

Outside of campaigns, students were more likely to go house to house or distribute contraception from their own homes. Fewer than 30% of students in any of the provinces reported to distribute contraceptives in markets, churches, or schools.

A minority, ranging from 29% to 37% over the three provinces, reported that clients sometimes or often commented that they were too young to be distributing contraceptives. However, two-thirds had rarely or never received that comment.

Family planning clients: A total of 593 family planning clients were interviewed from the provinces of Kinshasa, Sud Kivu, and Haut Katanga after receiving family planning services from the nursing students (**Table 4a**). The average age of clients ranged from 26 to 29 over the three provinces. Over 80% of clients in all three provinces had at least some secondary schooling. The majority were married, although this percentage was higher in South Kivu (92%) and Haut Katanga (85%) as compared to Kinshasa (53%). Almost two-thirds (64%) owned a cell phone, though the percentage was lower in Kinshasa than in the other two provinces.

The majority of clients in all three provinces reported being Evangelical or Protestant. The percent Catholic was higher in South Kivu (30%) than in the other two provinces (both at 9%). In terms of number of children, clients in South Kivu and Haut Katanga had a higher average (4.1) than in Kinshasa (2.8). In South Kivu, women with no children represented only 5% of the clients, suggesting a preference to use contraception after at least one birth. The percentage of clients who did not want any more children ranged between 20-27% over the three provinces.

In terms of employment, close to half of clients in Kinshasa and South Kivu had some type of job for which they were paid in cash, compared to only 28% in Haut Katanga. Conversely, over two-third of clients in Haut Katanga replied that they had no job or no response. Most clients had a cell phone, ranging from 52% in Kinshasa to 75% in Haut Katanga.

Of the clients receiving services, the percentage of first-time users was highest in Haut Katanga (56%) compared to South Kivu (42%) and Kinshasa (32%).

Of the 593 clients interviewed after receiving services at an outreach event, 77% reported waiting less than 30 minutes for services, with only 4% having to wait more than an hour. They received a variety of methods, with four methods (CycleBeads, implants, DMPA-SC, and pills) each mentioned by at least 20% of clients, although the distribution varied by province. The vast majority (at least 88%) in all provinces reported receiving their first choice of method, with over two-thirds mentioning that she had decided the method herself (69%) or in conjunction with her partner (21%). Three-quarters (74%) reported to have been informed of side effects, with the lowest percentage (65%) in Kinshasa. Of those informed, most were also told what to do in case of side effects. Over three-quarters (78%) were also informed of other methods available, though again the lowest percent (61%) corresponded to Kinshasa. The same pattern repeated for being told about switching methods: 63% overall, but only 47% of clients in Kinshasa. In terms of information being offered on all four of these questions to help them make an informed choice, the percentages varied by province: South Kivu (65%), Haut Katanga (54%), and Kinshasa (27%) [Table 4b].

V. Fidelity to Design: Contraceptive Logistics

A. Details of the model: contraceptive logistics

Contraceptive logistics involves forecasting the needs of the program, obtaining/importing the contraceptives from abroad, shipping them from the port of entry to the provinces, distributing them from the provincial depots to the nursing schools, supplying the nursing students, and delivering the methods to the eventual user.

The program estimates the number of each type of contraceptive to be given to schools, based on the experience of pilot tests and field experience, adjusted for urban versus rural settings. With assistance from the implementing partners, the DESS works to procure these quantities of contraceptives from the government, UNFPA, DKT International, or another source.

Based on orders from the relevant iNGOs, UNFPA and DKT procure and import specific quantities of a range of contraceptives into the country. They deliver them to one of three central warehouses (known locally as CDRs), or in a minority of cases, to a Provincial Health

Divisions (*Divisions Provinciales de la Santé* - DPS) warehouse. It is then the responsibility of the BESS to ensure the transfer of the contraceptives and supplies to the health zones or nursing schools for use in campaigns and routine service delivery. This transfer is documented by a delivery note (*bon de livraison).*

Once the contraceptives are on site at the nursing school, the focal point is responsible for two main tasks related to contraceptive logistics. Using a *fiche de stock (inventory form),* the focal point manages the inventory (receipt and outflow) of contraceptive methods onsite. Second, based on a distribution plan, the focal point supplies students with contraceptives to be used for campaigns and routine delivery. Students are resupplied as they run low on contraceptive supplies, either on a regular schedule (before each campaign) or as needed (on demand). The students complete a *registre de gestion des intrants* (contraceptive stock and flow form) to track the contraceptives and supplies they receive.

B. Stakeholders interviewed on this topic

Six stakeholder groups provided insights regarding contraceptive logistics: national level authorities, provincial level authorities, and managers from iNGO implementing partners (through in-depth interviews); and MCZ, focal points, and nursing students.

C. Results

National level authorities. These officials identified stockouts and obtaining an adequate supply of contraceptive methods as the main challenges that would arise if and when the model transitioned from an externally funded project to a national program overseen by the government. To avoid stockouts and other supply hiccups, they pointed out a need for a more rigorous quantification of the contraceptive needs of the students.

> *"We really need to think carefully about how to quantify contraceptive needs, to take into account the needs of other community outreach workers (RECO), yes, but also the needs of CBDs from nursing schools, which further increases the quantities needed." (National level authority)*

National-level health authorities also described the different ways of obtaining contraceptive methods and underscored the need to rely on multiple sources such as the government, implementation partners, and UNFPA, as a solution to shortfalls in contraceptive supplies.

> *"Yes, precisely, it's about alerting all those who can potentially make contraceptives available to students, in particular health zones and certain partners with whom we're in dialogue. The government itself, through UNFPA, buys contraceptives directly for schools, but so do others and they may be willing to supply ITMs with contraceptives if any are available. So, we're lobbying to make everyone aware of the fact that schools are one of our points of service, and we can't turn them down if contraceptives are available." (National level authority)*

Provincial-level authorities highlighted the difficulties they face with the supply of contraceptive methods. They emphasized the need for better coordination between all the actors involved in the supply of contraceptives. In particular, they mentioned improving the assessment of student needs and incorporating these needs when the health zone orders contraceptives.

"I would recommend including the needs of the ITMs when ordering contraceptives, based on their average monthly consumption, and for health zones to be able to integrate these needs, because more often than not, health zones have greater access to contraceptive methods. I would also recommend encouraging our partners to help having their contraceptives on time, and to help them get them there." (Provincial health authority)

Another provincial-level authority also stressed the need to increase communication and collaboration among the different actors (i.e., nursing schools, implementing partners, and the central health bureau of the health zone) involved in the supply of contraceptives. The informant pointed out instances where certain entities were overlooked, causing disruptions in the supply chain and a departure from the usual procedure, ultimately affecting the flow of contraceptives. According to this official, such a situation could have been prevented with improved cooperation and communication among all involved parties.

"It is a problem in terms of commodities and contraceptives when a partner organization goes straight to the schools to give them the contraceptives, such that the normal circuit is not respected. Normally, they should go through the central offices and then the schools." (Provincial health authority)

Provincial level authorities also emphasized the need to increase the frequency of contraceptive resupply to avoid delivering only during community-based campaigns and in response to stockouts. They recommended allocating more funds for contraceptive transport to ensure that all nursing schools, including those in remote areas, receive an adequate supply of methods in a timely manner.

Managers of implementing partners. The most commonly mentioned challenges in obtaining and delivering contraceptive methods to participating nursing schools and ultimately to women were recurrent stockouts, logistical issues, and under-estimation of contraceptive needs. Several mentioned that the stockouts of several contraceptive methods were due to weak supply-chain management (i.e., difficulties in reaching provinces that are far removed and facing security challenges) or global and national shortages in the case of combined oral pills, Implanon NXT, condoms, and DMPA-SC. Despite the shortages, the managers highlighted the responsiveness of the PNSR and Ministry of Health to approve and substitute unavailable methods with suitable alternatives (i.e., new types of implants: Jadelle and Levoplant instead of Implanon NXT).

"Regularly out of stock, these are most often injectables, but there are also oral products (pills). At one point, we also had a shortage of implants, including Implanon NXT. For injectables, it was Sayana Press in particular, and for oral methods it was the pills, whether COCs or POPs. (Manager, iNGO implementing partner)

Most partners reported an underestimation of contraceptive methods needed for nursing school students. The large number of students coupled with the demand from clients meant that the needs were far greater than predicted, leading to a method shortage.

The biggest challenge we've encountered is the lack of contraceptives. Why is that? Because right from the start, we worked based on forecasts. We hadn't imagined that this approach could lead to very high contraceptive consumption. As I say, over and

above the question of the wide geographical area covered by the students, and because of their young age, they easily reach the community of adolescents and youth. There's also the effect of youthful energy. As students, they're still keen to learn, to master things. And that makes them work much harder, they go further into the community to reach even those who have been hard to reach. Another reason is the large number of nursing school enrolments. So, you can really feel that contraceptives are being used much more than expected. That's a real challenge." (Manager, implementing partner)

Only one of the managers mentioned the supply chain management issues faced by nursing schools, which include inadequate storage facilities, a shortage of supply chain management tools, and challenges in utilizing these tools effectively.

"There's the question of commodities management. At the school level, it has to be said that commodity management is a fairly new activity; they're not used to doing this kind of work. So, the contraceptive methods management tools from time to time pose a problem. They're not updated, sometimes there are contraceptive losses, sometimes there can even be some methods that expire in certain schools due to a lack of expertise in commodity management." (Manager, implementing partner)

Médecins Chefs de Zone (MCZ). A total of 39 MCZ were interviewed from three provinces (**Table 5**). Regarding the flow of commodities, half (51%) reported that they received them from their implementing partner organization; 36% stated that the HZ delivers commodities to the schools; and 10% said that the schools collect the commodities from the health zone. Among those who answered that the health zone delivers contraceptives to the schools (n=14), the reported frequency was "on request" (n=6), quarterly (3), monthly (4), or other (1). And in all cases, the school completes a form acknowledging delivery. Stockouts are common; over half mentioned "often" or "some of the time." The DMPA-SC (Sayana Press), the pill and male condoms most frequently stocked out. Stockouts were managed with contraceptive management forms in all cases, as well as delivery receipts (93%), service delivery forms (71%), and contraceptive order forms (57%). Seventy-two percent of MCZs delivering contraceptives reported using all of these tools to manage stockouts.

Focal points. Half of the focal points reported experiencing stockouts "often," and another quarter "sometimes." The methods most frequently stocked out were the oral pill, emergency contraception, condoms, and DMPA-SC. In case of stockouts, two-thirds (66%) contacted the BESS (**Table 2b**).

Nursing students: In terms of stockouts, students in Kinshasa were more likely to report experiencing them "often" (34.5%) than those in Sud Kivu (26.7%) or Haut Katanga (20.2%). Conversely, 69.1% in Haut Katanga rarely or never experienced stockouts. The type of method most frequently stocked out was DMPA-SC in Kinshasa (82.5%), emergency contraception in Sud Kivu (78.3%), and the oral pill in Haut Katanga (58.5%). Almost all students reported notifying someone in case of a stockout. Again, the answers included trainer, instructor, supervisor, or focal point, which may in fact be the same individual. If the student experienced a stockout, he/she would ask the client to return later, offer a different method, or refer the client to a nearby health facility (Table 3b).

The frequency of contraceptive resupply varied notably across provinces. In Kinshasa, half of the students reported resupply occurring "just before a campaign," whereas in Haut Katanga,

two-thirds reported resupply happening "on demand" or with "no fixed schedule." This variation suggests a lack of standardization in contraceptive distribution processes across provinces, which may impact students' ability to maintain consistent stock levels.
Regarding the commodities form, at least four out of five students reported filling out a form when receiving contraceptive commodities, though fewer in Kinshasa adhered to this protocol. However, students across provinces were inconsistent in naming the specific form they were required to complete. While most students expressed no difficulties completing the form, the variability in its use and understanding of its purpose could reflect broader challenges in data reporting and administrative processes, especially in Kinshasa (**Table 3b**).

VI. Fidelity to Design: Information Systems

A. Details of the model: information systems

The primary indicator used to monitor outputs for the nursing school model is couple years of protection (CYP), which is the estimated protection provided by family planning methods over one year period, based on the volume of all contraceptives sold or distributed free of charge to clients during that period.[16] CYP is the most widely used measure of output in international family planning programs.

The circuit of reporting begins with the nursing students, who use the service register *(registre de service)* (a paper form) to record the number of people who used modern contraceptive methods, and the contraceptive register (*registre de gestion des intrants*), to record the quantity of contraceptive methods distributed to clients during campaign events or routine service delivery. According to the model, the students submit these paper forms to the focal point for their school.
Each month, the focal point at each school compiles the data and produces a paper version of the SNIS report. This report is then validated by the school director (*préfet de l'école*). Subsequently, the school forwards the data to the BCZS, which, in collaboration with the ECZS, enters the data into the education module of the DHIS2. This process may be carried out independently or with the assistance of the health zone data manager.

During the monthly ZS monitoring meeting, the BCZS validates the data collected from the schools, along with all other data generated by the health facilities within the ZS, following established data management standards. A representative from the school participates in this working session at the central office, alongside other supervising nurse (*infirmier titulaire*) from the FOSA. It should be noted that after each campaign, the schools, in collaboration with the ZS, compile a campaign report that includes all the data generated by the nursing school students during the specific activity.

A DHIS2 data bridge (*passerelle*) is utilized to centralize family planning data, including the number of users and the contraceptive methods distributed by health facilities and nursing schools, to provide aggregate figures. The data bridge serves as a link between two different modules in the DHIS2, a module containing data from the nursing schools and a module

[16] Steiner MJ, Sonneveldt E, LeBetkin E, Fatou J. 2022. Updating Couple Years of Protection: Literature Review, Guidance for Updating Existing Methods, and Adding New Methods. *https://www.fhi360.org/wp-content/uploads/2023/12/resource-cyp-brief.pdf*

containing the data from the health zone; and it calculates an aggregate number of contraceptive methods distributed and number of users.

In principle, the SNIS will contain data on the volume of each contraceptive distributed each month by the nursing students in each health zone, which is then compiled to measure the quantity distributed by nursing students at the provincial level. These data on contraceptives distributed are then weighted by standard conversion factors to calculate volume of CYP.

In theory, this system should produce accurate data on the volume of contraception converted to number of CYP for each participating nursing school. Because of obstacles encountered in this process, the implementing partners – who need these data to report to their donors – often contact the focal point of the schools to obtain the same data directly from them.

The DESS also tracks data on the number of nursing schools that have integrated the FP module into their curriculum and the number of nursing students that have completed the training, by school and by year.

B. Stakeholders interviewed on this topic

Six stakeholder groups gave feedback on the information system: national level authorities, provincial level authorities, and managers from iNGO implementing partners (through in-depth interviews); and MCZ, focal points, and students (via telephone interviews).

C. Results

National level authorities. Despite efforts to integrate data from nursing school students into the SNIS through the creation of a dedicated module and the training of nursing school focal points and health zone data managers, the persons interviewed cited several challenges to this process, including the lack of stable internet connection, inadequate data collection and entry tools, and request for payment from data collectors.

> *"Yes, training, I just said that the problem is not so much training. It's the support. We found that the people who took part in the training were enthusiastic, keen to learn, but the problems they encountered weren't that they didn't know how to use the DHIS2, but that they had problems with motivation, tools for data collection and entry, and internet connection. So, there are a lot of problems, and more resources need to be deployed to support the approach." (National level authority)*

These authorities emphasized the loss of data as a potential limitation to the data entry and reporting process, which undercounts the students' contribution to family planning uptake in the health zone in which they operate. They cited three reasons for the loss of data: the challenges of collecting data from the students as they perform contraceptive distribution in multiple settings such as community-based events, at home, and in their neighborhoods; the difficulty of tracking such a large amount of data; and the use of paper tools for this task (which result in students misplacing, losing, or incorrectly completing the forms).

> *"And other difficulties we're experiencing is that young people are so enthusiastic that when they offer these methods to the community, they do it routinely as well as during campaigns, they generate a large amount of data. But we have to be there to collect, compile, and ensure that these data… can be part of the information system and added*

to DHIS 2. So, there's this whole problem of the data not being included in DHIS2, you see." (National level authority)

One of the key informants in the in-depth interviews provided a potential strategy to improve data collection: to develop official guidelines on the steps in the process of data collection, data entry, and dissemination, as well as the roles of each stakeholder in the process.

> *"I believe that among the recommendations, we need to start at the beginning, we need to plan workshops to draw up the directives and texts that govern this SNIS..." (National level authority).*

Provincial-level health authorities cited additional difficulties faced during data collection and data entry. Some schools lack computers and a stable internet connection due to power outages. Some focal points – despite training – have difficulties in using the software to complete the task. The tools used by HZ data managers to track the inventory of contraceptives were considered deficient. And in some cases, focal points and data managers had difficulty in determining the appropriate health zone for recording certain data. One informant explained that this situation arises when nursing students distribute contraceptive methods across multiple health zones or when a student's school is located in one health zone, but they reside in another and distribute methods in both.

> *"Yes, these are computer or data collection tools that hadn't been used before and that were introduced from one day to the next. Others didn't understand well their use and it was necessary to start retraining them each time twice. […] Also, when there's no connection, they have to come to my home office so I can share my connection. These are some challenges that we had encountered especially with entering the data into DHIS2 (or especially with the process of data entry)" (Provincial level authority)*

Most informants also highlighted problems with the data bridge ("passerelle") or lack thereof. In practice, most of the people managing the data at both the school and the health zone level pointed a lack or misuse of the data bridge, leading to the omission of nursing school data from the overall count of methods distributed at the health zone level.

> *"It's true, there's still a problem to this day, the data bridge between different modules of DHIS2 (teaching module and general health module) is missing so that the data from the schools cannot be automatically transferred to the health zone. Today, we still have to transfer the data so that it can be processed manually, but we'd like it to be automatically sent. We would like for there to be a data transfer to automatically send the data from the teaching module of DHIS2 to the general DHIS2." (Provincial level authority)*

All managers of implementing partners pointed out the difficulties experienced during the data collection and data entry as they attempted to replicate the model. Most managers indicated that some data from students have been lost, due to failure by the students to correctly report the methods they have distributed, difficulties of focal points to correctly capture and transfer the students' data to the health zones, and a shortage of trained focus points. Specifically, they emphasized that data on contraceptive methods distributed by nursing students were not consistently counted in the total number of methods administered by the health zone. Additionally, there were instances where this data was incorrectly reported in the count of the total number of methods distributed by health facilities. Addressing these

challenges is crucial for obtaining reliable data on contraceptive services provided by nursing students and their contribution to the health zone tally of contraceptive uptake.

> *"The students can generate data, and the focal point has to compile it. So initially, as decided, we should have had one focal point per school. But unfortunately, we found ourselves in schools with more than 60 pupils. So, in compiling this data alone, some of it was lost. Also, some of it was already lost at the time of collection." (Manager, implementing partner).*

> *"But also about the data issue, there was a problem with the data bridge because the schools are considered to be delivery points in their own right, but once they've entered these data, their data should match the data that is generated by the health facility so that the health zones can know exactly the quantity of contraceptives distributed by the schools and by the health facility. But during implementation, this data bridge didn't work very well and that caused a few problems, so that's another challenge." (Manager, implementing partner.)*

Most managers cited the challenges encountered by focal points to enter and transmit data to the health zones. These difficulties consist of internet outages, software usage problems, data entry errors, delays in the data entry, and difficulties for a few focal points entering data for a large number of students. To minimize such potential data entry and compiling errors, several informants recommended closer supervision and monitoring of the data collection and data entry process at the different levels of execution (i.e., focal points and health zone)

> *"In terms of data entry, we have problems with data entry errors, it happens. Also, people who don't accurately enter into the computer what they've seen on paper, right? These things happen. And then, there are problems of late entry, aren't there? And then, from time to time, even the non-entry of data, they don't enter the data. These are the problems we encounter at this stage." (Manager, implementing partner)*

MCZ/health zone personnel: All 39 respondents reported that they were responsible for data processing, with 60% acknowledging difficulties (**Table 5**). Most commonly cited were lack of data from the schools (mentioned by over half of respondents), lack of internet connection, lack of time to report data, lack of training, and lack of access to the DHIS2 teaching module account. The HZ reported receiving data from the students through the focal points (51%), service registers (15%), paper report (13%), and contraceptive registers (10%). Half the respondents mentioned that the data transfer occurs at the end of each month, although 10% reported at the end of each activity (campaign). The primary difficulties in terms of data quality involved inconsistencies between the quantities of methods consumed versus still available at the end of each month (64%), delays in transmission (44%), and incomplete data (31%).

In all cases, the HZ personnel reported entering the students' data into the DHIS2. Over half (54%) were completely comfortable and 36% comfortable/neutral in doing so. The HZ personnel felt that the data should come from the school's focal point (69%), supervisor (23%), or director (15%). They generally receive the data weekly (46%) or monthly (41%), with 10% citing "after each activity." The large majority (82%) reported no problem with the ITM data bridge. Sixty-two percent stated that there is a quality control mechanism for the

student data (that checks validity, consistency, and completeness), through the HZ monthly monitoring meeting, specific school validation meeting, or working session between the focal point and HZ data manager. Sixty-two percent reported supervising nursing student activities, and all of these respondents offered for the supervision report to be seen.

Focal points. The model requires that the focal points obtain data from the nursing students on the quantities of contraception distributed during campaigns and routine delivery. Most reported that they received these data on the *registre de service*, although one in 10 mentioned the *registre des intrants* (**Table 2b**). Most often (62%), this took place at the end of each month, although one-quarter reported "after each campaign event." In turn, they transmitted the statistics to the data manager at the health zone/BCZS (70%), and BESS (24%). Opinions differed on the person responsible for transmitting the data from the school to the BCZS: the director of the school (36%), the data manager (27%), staff at the BESS (27%) or MCZ (10%). However, there was near consensus (89%) that the data should be transmitted monthly. Only 21% of the focal points participated regularly in the monthly validation meetings at the health zone; 59% never did. The majority felt very sure (57%) or sure (19%) that the data were then entered into the DHIS2. Six in 10 reported that there was a mechanism in place for monitoring the validity, coherence, and completeness of the data.

However, over half (64%) of the focal points had experienced difficulties in data reporting. Most frequently cited by far was the lack of internet connection or computer, followed by losing the password/getting access to the DHIS2, difficulty following the instructions in the manual, and difficulty obtaining data from the students.

Nursing students: The model requires students to submit their reports every month as well as after each campaign. When asked how frequently they report to the schools on the volume of contraceptives distributed, around 62% of nursing students indicated they submitted the *registre de services* at the end of each campaign day, 10% did so weekly, and 19% reported doing it monthly. When asked about the types of data they were expected to report to their schools according to the guidelines, 54% mentioned they were required to report on contraceptives distributed during their practicum, 71% cited those distributed during campaigns, 43% for routine distribution, and only 21% indicated that all of this data should be submitted to the school. Students were also questioned about who is responsible for receiving their reports. Responses were as follows: 36% believed they should submit their data to professors, 29% to trainers, 27% to supervisors, and 8% to school focal points. These responses seemingly showed differences by province but usually refer to the same person since the focal point is often the instructor at the school (**Table 3b**).

VII. Fidelity to design: Finance

A. Details of the model: Finance

In the DRC, primary health programs are heavily donor-financed, and family planning is no exception. The government through the Ministry of Health is responsible for paying government salaries and providing (in some but not all cases) the physical infrastructure of nursing schools and health facilities. In addition, the government makes periodic contributions to the procurement of contraceptives, which is important symbolically but represents a fraction of the total needs of the country for contraception, including the needs of the nursing schools.

Both public and private nursing schools have integrated the FP module into their training. In either case, the salaries of the instructors are covered by the state or a private source. Similarly, the nursing schools make their classrooms available for training free of charge. However, the implementing partners that support the nursing school model provide additional funding to enhance contraceptive counseling and service delivery at the field level. These expenses include snacks for the students during training, purchase of mannequins for training, transport fees for students during campaign days, printing of data collection forms, backpacks and vests for the students that identify them as CBD, kits for removing implants, training materials and contraceptive methods. In addition, the implementing partners pay the HZ and school supervisors, for the coordination of campaigns and the health facilities.

The students provide contraceptives free of charge to the clients during campaign days. During "routine" delivery, they are allowed to charge a minimal sum for their services. Thus, the revenue from user fees in this model is trivial (and not monitored).

B. Stakeholders interviewed on this topic

Four stakeholder groups replied to questions regarding funding required to maintain the model: national level authorities, provincial level authorities, and managers from iNGO implementing partners (through in-depth interviews); and ANAPECO parents (through focus groups).

C. Results

National-level health authorities reported that compared to other models that involved training community-based distributors, the nursing school model incurred relatively lower costs. Informants also emphasized the cost-savings achieved during the implementation of the model, particularly the cost reduction achieved through the transition from a stand-alone training course to the integration of the family planning module into the nursing school curriculum. These cost-savings included reductions in the training and associated costs such as per-diem for trainers, transportation and catering expenses for trainers and trainees, and room rentals.

> *"Where we used to rent rooms at $650, we no longer rent because we use classrooms for that purpose. We used to provide a $25 lunch to everyone if not more with 2 breaks, now instead we buy young people juice plus a sandwich just to raise their sugar level a bit. The trainers were previously paid per diem as trainers are now the instructors." (National level authority)*

Despite this model being less expensive, the informants stressed the importance of obtaining funding from sources other than the implementing partners. They cited the need to engage the government in financing aspects such as the purchase of contraceptives, for which there is a line item in the national budget; and to involve parents of nursing school students by increasing school fees. This additional financing was described as crucial for improving the sustainability and scalability of the model. Informants expressed the firm belief that the model would not be sustainable without the government's participation, as parents and schools wouldn't be able to support the costs of commodities.

"There is a cost that parents can bear, but as far as the contraceptives are concerned, we feel the government must step In to buy contraceptives for the system as a whole and also for the nursing schools." (National level authority)

Provincial level authorities. Informants discussed the potential sustainability of the model, if donors were to pull out. Factors that would assist sustainability include the pool of provincial trainers (of nursing school instructor) and the instructors themselves that now exist as part of the integration of family planning into the nursing school curriculum. However, informants stressed the importance of parents in partially financing the training through an increase in school fees; and of the government, at the national and provincial levels, to effectively disburse the funds under the budgetary item allocated to the procurement of contraceptives. Without those conditions being met, most informants believed the model would be difficult to sustain.

"[…] without that, the model will be difficult to sustain. At the moment, it's difficult, but what has already been achieved is training, which is a very good thing, because introducing this approach into the curriculum is already a good thing. With or without money, I think it can work, but where money absolutely has to come in is in the supply of contraceptives, but also in the various campaigns in which students participate, which require a bit of money because you need the contraceptives, which really requires the intervention of a partner." (Provincial level authority)

Most provincial-level informants reported that the model suffered from inadequate funding. They described a range of challenges including a lack of infrastructure, limited funding for the transportation of contraceptive supplies, the need to increase the frequency of supervision, the need for more nursing school instructors, and the necessity for a refresher course for the instructors.

"… We also need to increase the number of actors (involved in the model), especially instructors, because some schools didn't have enough instructors, so we had to recruit them too." (Provincial level authority)

Informants described the model as relatively more cost-effective than alternative models of service delivery. However, when asked the question "if you had additional funds to expand access to family planning services," informants were divided in their responses. About half reported that they would allocate all additional funds to the nursing school model, whereas the remaining half indicated that they would allocate the funds to the three main service delivery mechanisms (mentioned below), viewing them as complementary and essential to maximizing the reach of FP services within the community. (RECO CBD, also known as CBD with a nonmedical profile, are community members who educate others in the community about FP methods; distribute condoms, CycleBeads, and contraceptive pills at the community level: and refer patients to a hospital or health centers, in addition to other non-family planning tasks.)

"Well, in case there is new financing, I always insist that we are in a context of enormous needs and limited resources. Therefore, I would combine the provision of services at the health facility level with nursing students' CBD and even RECO CBD" (Provincial level authority)

Managers from iNGO implementing partners. Despite the general agreement that the model is relatively inexpensive compared to other training models and exhibits a lower cost per couple year of protection (CYP), several partners believe the sustainability of the model hinges on government involvement and financing. Some managers believe that without government involvement, the model would not be sustainable and cease when donors pull out.

> *"To ensure sustainability, I think the best solution is for the government, the ministry, to take ownership of the approach and invest heavily in these schools. Because if we have to continue with project-based approaches, we'll create needs and these needs will fade away, because the project will come to an end one day. It could be 5 years, 10 years, but it will come to an end." (Manager, implementing partner)*

Echoing the comments of national and provincial level authorities, several managers argued that sustainability could be ensured through an increased government role in sustaining the training and in supplying contraceptive methods to the schools. They mentioned that since the training is already integrated into the nursing curriculum, it does not require significant additional funding to be sustained.

> *"But if you look at the model as it stands, it's a model that can be sustainable, even at no cost. Let me explain. Today, the country buys contraceptives, and the health zones also receive contraceptives from donors, don't they? And if ever these different entities make contraceptives available to schools as a point of delivery, I think that even without funding, this program can continue." (Manager, implementing partner)*

To increase the likelihood of sustainability, most managers also highlighted the importance of diversifying funding sources by increasing parent involvement by raising school fees and increasing government involvement in purchasing and supplying contraceptive methods to the schools, given that those schools are unable to support the costs of the contraceptive methods.

> *"But the only thing they'll be lacking is the availability of contraceptive methods. But in terms of materials such as the anatomy model, we've provided them with this anatomy model, and they can continue to provide training. That's why I say, with a forward-looking management style, I believe that a good director of ITM can get organized and carry out this training without waiting for anything. But the only difficulty will be the availability of contraceptive commodities." (Manager, implementing partner)*

Lastly, these managers reported that the costs associated with the model have decreased over time due to the transition from a CBD training model to incorporating the training into the curriculum of nursing school students. Costs associated with food, transportation, and per diem of trainers were reduced by having instructors provide the training instead of external trainers and the use of the school classrooms; funds to cover transportation are needed only during the students' participation in community-based events.

> *"You know, when we come to train, for example for a classic training course, we pay people for transport, but today we don't pay for transport. We used to pay a per diem to the people, but now there's no more per diem. What's there is just a little snack provided to the students so that they can benefit from their training" (Manager, implementing partner)*

ANAPECO parents. When asked about a proposed financing mechanism that would involve increasing school fees to fund the family planning module within the nursing curriculum, most parents disagreed. They cited the lack of government participation and their own limited financial means as important barriers to supporting the family planning module. The parents further emphasized that they already bear part of the costs of the module, as they partially cover transportation costs due to insufficient transportation reimbursement. Additionally, they highlighted that their children serve as community-based distributors without receiving compensation from the government, further adding to the financial burden.

> *"In any case, I'm really against it too. First of all, we welcome the fact that it's free [FP training], and we really agree with the gratuity. Parents really don't have the means to pay these fees so that our children can benefit from this training, really, I'm personally against it." (ANAPECO parent)*

In contrast, a minority of parents believed that the benefits provided by the module to their children would justify a moderate increase in fees. However, they also stressed the need for the government to be accountable and to further contribute to the financing of the module, to relieve part of the burden of the school fee hike from the parents.

> *"We know that school is not free, we always pay. […] it will represent a hiring opportunity for them. We accept this policy of paying for the family planning training. But the government too must take its share of responsibility and not leave the whole burden on the shoulders of the parents." (ANAPECO parent)*

VIII. Fidelity to design: Leadership and Governance

A. Details of the model: leadership and governance

The PNSR is the program under the Ministry of Health responsible for oversight of all family planning activity in the country. However, it does not have direct management or budgetary control over donor-sponsored projects. It does play a major role in the training of clinical service providers, including in the training of trainers for the nursing school model.

The DESS manages the network of nursing schools in the DRC, numbering over 500 schools. As a Directorate within the MOH, it is responsible for the curriculum within nursing schools across the country. As a partner in the development of the nursing school model since 2015, it participated in creating the family planning module that was incorporated into the nursing school training in selected provinces starting in 2018.

Both the PNSR and the DESS have offices at the provincial level – PNSR Provincial and the *BESS* – that are engaged in the nursing school model. In addition, the Minister of Health has established 519 health zones across the country. Most nursing schools report to the health zone in which they are located (although some schools operate in more than one health zone). The MCZ or designated staff coordinate with the nursing schools to schedule the venue and dates for the campaigns. They assist with contraceptive logistics. And they are responsible for receiving data from the nursing schools on the volume of contraceptives distributed each month, to be uploaded to the national health information system (SNIS) using the DHIS 2 platform.

Areas for coordination include decisions on the provinces, schools, and health zones to adopt the model; the schedule for trainings and for campaign events; the provision of contraceptives to the nursing schools; supervision of field activity; and transfer of the data from the schools to the health zones for uploading into the SNIS.

B. Stakeholders interviewed on this topic

Three stakeholder groups replied to questions regarding leadership and governance: national level authorities, provincial level authorities, and managers from iNGO implementing partners (through in-depth interviews~~).~~

C. Results

National level health authorities emphasized the strength of the collaboration among the DESS, PNSR, implementing partners, and the Ministry of Health as a whole, providing examples of joint work such as training and supervision of the instructors. They also highlighted the complementarity of the DESS, focusing on the education side, and the PNSR, focusing on the technical aspect of family planning. Despite their joint work, one informant pointed out the need to develop a joint model, where all implementing partners and government entities are involved in every step of the process, from the design to the implementation, rather than focusing solely on their specific areas. According to this informant. the joint model would then be beneficial to everybody.

> *"Yes, we are involved, but we want to be more involved. And when we say more, we shouldn't just wait until implementation to come and ask for support from the PNSR by saying give us technicians doing this at a meeting, no. We want to be more involved. So, in the very conception of things. It's in the design itself that success depends. Success can always come, and when everything is well prepared right from the planning stage, I think that would save us a lot of red tape when it comes to implementation. So, if we can be involved, but fully involved, from the outset, and we work together, I think that's going to, uh, that's going to make things easier for us." (National level authority)*

Provincial-level health authorities cited the strength of the collaboration between various stakeholders (PNSR and DESS at the provincial level) as well as with national-level health authorities. Most informants described the collaboration as hierarchical but pointed out the availability of the national-level authorities to assist when needed and address challenges as they arose. Despite their distinct roles within the model, both the PNSR and the DESS provided examples of joint efforts during training and supervision sessions, as examples of their collaboration.

> *"Well, I'd like to congratulate BESS on this model, and we must work together as a matter of course. We have to work together with them because they represent the schools, we represent health, and we represent family planning. We are called upon and obliged to work together. Of course, we have also taken part in the training of these students, we also take part in supervision with these schools." (Provincial level authority)*

Informants also stressed the need to improve the supervision of nursing students in terms of increased frequency, a greater number of supervisors, and more resources available for

supervision. Also mentioned was the need for better coordination among the various stakeholders in charge of the supervision to ensure that supervision is conducted effectively at all levels.

> *"[…] but the big challenges are to bring the two actors together [students/schools and health workers], so that they can work together, but also not to wait only for the national level to organize supervision. Even here in the field, we need to be given the means to be able to monitor these young people as they offer methods. It's a new field to them, and they've got other things on their plate, so we need to monitor these students at every moment when we think it's important. But we need the means to do this. We also need to evaluate all the activities carried out by the schools, so as not to allow certain decisions to be taken." (Provincial level authority)*

Lastly, one of the informants discussed the need for greater collaboration between the health sector and the nursing schools. They mentioned mistrust from healthcare providers as a challenge encountered during the implementation of the model. Healthcare providers viewed nursing students as possible competitors who could potentially take over their jobs or take away certain tasks from them. Raising awareness among health providers about the complementarity of using the two approaches and their common goal of serving the community is essential to ensure the success and acceptance of the model within the healthcare system.

> *"The challenge remains that of bringing the two actors together. You know we started Family Planning with the health providers and others, the fact that other sectors are now getting involved with family planning creates a malaise at the provider level." (Provincial level authority)*

Managers in iNGO implementing partners. All managers discussed their collaboration among other implementing partners and government entities at various levels, including the national level (PNSR, DESS, SNIS) and the provincial level (PNSR, BCZS, data managers, and BESS).

Several managers emphasized the importance of reaching a consensus on expenses among partners to prevent tensions among nursing schools. The proposal entails establishing a predetermined list of expenses that donors would fund, thereby standardizing the model's cost for potential adopters and preventing instances where donors fund additional expenses outside the model which would increase the average costs. During an in-depth interview, one informant proposed involving the government as the entity determining which expenses should be financed within the model.

> *"Each organization has a different donor, so sometimes there are organizations with flexible donors for whom giving money is not a problem. But for us, with our donor, there are certain restrictions. We can't go beyond a certain amount. Tulane, who started the model, gave us an estimated cost of different items. And they said that we shouldn't deviate too much from this cost to keep it standardized; they advised us not to go much lower or higher than what they had established with the DESS. But unfortunately, in the field, we can see that some donors have more flexibility. Some donors spend perhaps twice or one-and-a-half times the budget of others."* (Manager, implementing partner)

IX. Acceptability

Acceptability is a multi-faceted construct that reflects the extent to which people delivering or receiving a healthcare intervention consider it to be appropriate, based on anticipated or experienced cognitive and emotional responses to the intervention.[17] For this factor, we present the perceived benefits of the model across different stakeholder groups.

Key informants across different groups highlighted benefits of the model for the nursing schools, nursing students, clients, and society.

Numerous informants – from national to provincial level health authorities as well implementation partners – underscored the advantages observed in schools that have implemented this program. The schools are more attractive to potential students and have higher enrollment rates than those that don't offer the FP curriculum. Stakeholders pointed out the program's appeal to students and parents, citing instances where students have transferred from nursing schools not implementing the model to those that have.

> *"Another short-term effect is that in the schools where these models are available, I've seen enrolments increase. There's a high interest of students who now want to go to these schools, and so the schools that don't have this model have been emptied by this model, which is very much appreciated by students, parents, and the community. This encourages parents to use these schools." (National health authority)*

> *"Students from other schools, when they see these ones with identification badges, with a bag containing contraceptives, and it's his colleague who's chatting with a woman, offering her a service, it attracts them. And we've seen a lot of students leave their schools to come there. As a result, the student population in certain schools that have implemented the model is increasing. It's a direct benefit for us." (Provincial health authority)*

In terms of the nursing students, the model gives them a competitive edge over peers who haven't had the opportunity to receive the FP module, because they possess both knowledge of contraceptive methods and practical experience gained from the community-based practicum. Another advantage is that through this experience, students forge connections with potential future employers, enhancing their prospects of employment.

> *"We live in Kindele, my child did his internship in a Catholic Church Health Center. The doctor in charge, seeing his skills in family planning, gave me the contact number of the health Center so that once he finished his studies, I could contact him for hiring*." *(ANAPECO parent)*

Furthermore, at the national level, these students are perceived as possessing a diverse skill set, capable of fulfilling roles as both nurses and community-based distributors (CBDs). Consequently, clinics and health centers stand to benefit from hiring these students, essentially gaining two skilled workers in one.

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[17] Sekhon, Mandeep & Cartwright, Martin & Francis, Jill. (2017). Acceptability of healthcare interventions: An overview of reviews and development of a theoretical framework. BMC Health Services Research. 17. 10.1186/s12913-017-2031-8.

"*As a result, education really takes on its full meaning, that is, to train skilled workers. What we're seeing at the moment is that these students, when they're already at school, are in contact with certain health centers. And when they've finished, some of them get jobs simply because they're nurses, but also because they're able to offer contraceptive methods, family planning in fact. And that's it! So, if I assign him to my clinic, it's a bit like hiring two people, one for FP and the other for care or whatever. So that's what you gain by hiring just one person who has two great skills like that." (National level authority)*

Numerous stakeholders mentioned that the model increased access to contraceptive methods, thanks to the services offered by nursing students in the community. It reduced barriers to contraceptive use by reducing the costs for methods (e.g., provision of free options) and for transportation, as well as decreasing travel distances to access services. They underscored the significant contribution of nursing students who extend their outreach to clients within their communities and homes, thereby enhancing the proximity and availability of services.

"But with the DBC, women get a contraceptive for free and that in our country, with the poverty there is, women feel good because they give absolutely nothing." (ANAPECO parent)

Stakeholders cited the significant impact of utilizing nursing school students as community-based distributors, noting that it greatly expanded the reach to clients who wouldn't have benefited from services otherwise (that is, women who wouldn't usually visit health centers to obtain family planning services). They attributed this impact to the large number of enrolled students who were trained and prepared to take on this role. Many key informants also mentioned the community's familiarity with the model and acceptance of students as providers of family planning services. Some clients are even willing to wait for students outside of school premises to receive these services.

"We've noticed that women are trying to contact these students, in private of course. I've even been to Virunga in Goma, it's ITM, they haven't even built a structure as such, but they've put in benches. And when I tried to find out why these women were sitting there, they told me, they're waiting for these girls who finish school at 2:30 pm because in their bags are the contraceptive methods. And if a woman can already get it here at the exit, they talk, and the woman gets her method and then it ends there. You see! There's a bond between the community, particularly the women's community I might add, and the nursing students." (National level authority)

Parents of nursing school students cited the important role played by these young individuals in providing information about contraceptive methods and in reducing or spacing births. They emphasized that such efforts contribute to economic security, particularly in contexts where financial resources are limited. Specifically, by empowering families with the ability to plan pregnancies more effectively, these students facilitate improved financial planning and stability.

"Here, we talk about spacing when we try or use methods that allow us, as parents, to space out the births of our children, which guarantees us; first of all, economic security. At home, a little expense, not too much, was an advantage for us." (ANAPECO parent)

Nursing school students have also increased awareness of family planning methods while actively dispelling misconceptions and harmful rumors. By addressing false associations between contraceptives and illnesses like cancer or infertility, they have helped women to make informed choices about their reproductive health. Consequently, this initiative has led to more women adopting methods to better space their pregnancies and limit the number of children they have.

> *"This training is a good thing because many mothers were afraid of contraceptive methods because of many rumors about these methods, such as they will destroy the uterus. After they received information from our children during these outreach events, many women who were afraid have changed their minds and voluntarily welcome these methods." (ANAPECO parent)*

Increasing contraceptive use was seen as another benefit of the model for society. Through their efforts in community-based distribution and counseling, these students have contributed to a higher uptake of contraceptives among women, which would potentially have positive effects on maternal and child health outcomes.

> *"I prefer to start with the short-term benefits, which are that these children who are trained, go where they live, where they are known, they deliver contraceptive methods, they behave like community-based distributors, and they become familiar with these communities. For us, this is a very good thing, as it helps us boost contraceptive use in our province. (Provincial level authority)*

> *"And obviously for the institution, for the Ministry of Health, this improves the country's overall contraceptive prevalence. And so, if we go even further, we enter into the benefit of the demographic dividend of family planning. So, there you have it!" (National level authority)*

The comments in this section summarize the factors that have enhanced the acceptability of the model to different stakeholders. Intermingled with the comments indicating widespread acceptance of the model were occasional comments on its limitations (described in the previous sections on training, service delivery, and other domains). Yet across the national level and provincial level authorities, managers of implementing agencies, and ANAPECO parents, there was no major opposition or objection to the model.

X. Sustainability

Whereas there are multiple definitions of sustainability, the one proposed by USAID fits the current analysis well: "the capacity to maintain program services at a level that will provide ongoing prevention and treatment for a health problem after termination of major financial, managerial and technical assistance from an external donor."[18] The concept requires building skills, knowledge, institutions, and incentives to make development processes self-sustaining.

Of all the topics covered, there was no greater consensus across stakeholder groups than on the need for government engagement to sustain the nursing school model in the long run.

[18] Sustainability of development programs: a compendium of donor experience. https://ntrl.ntis.gov/NTRL/dashboard/searchResults/titleDetail/PB89203418.xhtml Development. 1998

National level health authorities all expressed the importance of advocacy to be directed toward the government. Conditional upon the effectiveness of the model, these informants argued that advocacy efforts should aim to persuade the government to adopt the model, considering that education is one of its responsibilities and represents an investment in young people. According to these informants, the aim is to avoid falling into a situation where the model would cease to exist if implementation partners were to withdraw their support. Informants stressed the necessity for the government to finance the further scale-up of the model and ensure its sustainability.

> *"I used to say that as long as the State hasn't come out in favor of this education (nursing school model), we'll continue to trail beyond our partners instead of leading the way. But if the State decides to take responsibility for the nursing schools' education because the state should be responsible for the nursing school education as it is one of its prerogatives. That's how I think we should advocate." (National level authority)*

> *"We need to meet the [government]authorities, show them what we've been up to and what we've gained from the model, so that they commit to institutionalizing the model and ensuring its sustainability. So that it's not just a project-based approach where every time there's a project, then it ends. We clearly want to expand the model, especially in provinces with very low contraceptive prevalence, but which nonetheless have nursing schools that we can capitalize on." (National level authority)*

Provincial level authorities. Most informants also expressed the need for advocacy to be directed at the government and more specifically at its various levels including national and provincial political leaders (i.e., provincial governors), as well as donors. They argued that this advocacy should aim at scaling up the model to additional provinces and nursing schools within provinces, increasing infrastructure spending (i.e., for nursing schools that lack the necessary infrastructure), and ensuring the disbursement of governmental funds earmarked for purchasing contraceptive methods.

> *"Well, on the institutional level, the model began in the province with several ITMs, but only 13 ITMs have adopted the model. So, we think that if we can bring it to scale – i.e., to all the nursing schools – that would be a very good thing." (Provincial level authority).*

Managers, Implementing partners. Most managers expressed the need for advocacy to be directed to the government with three main objectives. The first objective should be to persuade the government to increase their participation in the program to foster further scale-up. The second objective should be to convince the government to finance the project to reduce donor dependency. The third objective should be to increase the government purchases of contraceptive methods and to supply part of these methods to the nursing schools involved in this model.

> *"We need to advocate for our government to provide sufficient funds to procure contraceptives. We need to reinstate the availability of contraceptives in each province, but we also need to plan institutionalization as an approach that doesn't just depend on the partner but must depend on the government.*

One manager made the distinction between sustaining the training component of the model versus purchasing the contraceptives needed to maintain the model. In his opinion, "sustainability" should only be measured in terms of the former, especially in a country with a high level of donor dependence.

Managers emphasized the importance of leveraging the Ministry of Health, through the DESS and the PNSR, as advocates to persuade the government to increase its involvement in the model. Lastly, a few also expressed the need to target donors to secure additional funding to further scale up the model in all the nursing schools in the country.

XI. Satisfaction

Client satisfaction is considered as one of the desired outcomes of health care, and it is directly related with utilization of health services.[19] Although the list of concepts by Proctor et al (see **Figure 1**) focuses on the satisfaction of beneficiaries, we also explored the satisfaction of the nursing students.

Family planning clients in community settings**.** Data from clients were collected shortly after they had received services from nursing students at a community outreach event.

Overall, client satisfaction with the information received from the service provider was high: 82% were completely satisfied, 17% somewhat satisfied, 1% dissatisfied. Replies were very similar for the services received from the nursing students. Curiously, in response to the question "where would you prefer to receive services," 55% stated a preference for health center, compared to 38% for at home/in the community; 7% had no preference. Those mentioning community-based services gave multiple reasons: less expensive, lower transportation costs, more accessible, trust in the service provider, and more discreet. The vast majority would highly recommend (62%) or recommend (34%) this service to a friend or family member.

Nursing students. The vast majority of students reported feeling a sense of satisfaction from distributing contraceptives at the community level (**Table 3b**). They most appreciated the opportunity to acquire technical skills, improve interpersonal competence, and contribute to the well-being of the community. A minority (one in five) also mentioned enjoying the respect that their role inspired from members of the community.

XII. Penetration/coverage

Penetration (synonymous with coverage) is measured in relation to the number and percent of provinces and health zones in which the model was operating at the time of the study (late 2023).

When the model was first tested in 2015, 10 nursing schools in Kinshasa participated. Their outreach work benefited five health zones in the city, with possible spillover to some others.

[19] Assefa F, Mosse A, Hailemichael Y. Assessment of clients' satisfaction with health service deliveries at jimma university specialized hospital. Ethiop J Health Sci. 2011 Jul;21(2):101-9. doi: 10.4314/ejhs.v21i2.69050. PMID: 24776780; PMCID: PMC3275861.

By 2017 the model was operating in 48 health zones in three provinces (Kinshasa, Kongo Central, and Lualaba). And by late 2023 it was used in 123 (of the 519) health zones in the country, located in 16 of the 26 provinces, in a total of 156 schools, with support from additional donors to new implementing partners.

XIII. Adoption of the model by other organizations

The original model was pioneered by a single iNGO implementing partner, Tulane International. By late 2023, the model was in use in 94 health zones located in seven provinces under the PROMIS project (managed by Tulane and funded by CAFI/FONAREDD). In 2021, EGPAF with USAID funding tested the model in two HZ in Kinshasa (one in which the model was already operational, albeit in different schools). Then in 2022, Pathfinder and SANRU (funded by the World Bank) and Pathfinder and EGPAF (funded by USAID) adopted the model for use in 28 additional health zones, corresponding to eight new provinces, as shown in **Table 6**.

XIV. Efficiency

One measure of efficiency in family planning service delivery is the cost per couple years of protection (CYP), the most widely used indicator of output in international family planning programs.

Data on project costs for the nursing school model in the DRC were available for the period from 2019-23. To calculate a crude measure of cost per CYP, we used the total costs to operate the model each year in the numerator and the total CYP generated per year in the denominator. The numerator data did not include the costs of the commodities (which were purchased from or donated by UNFPA and DKT); also excluded were costs for activities that did not directly generate CYP, such as the development of a communication strategy.

The cost per CYP declined dramatically over this four-year period: from $5.01 (2020), to $4.03 (2021), to $2.63 / $2.70 (2022 / 2023).

XV. Discussion

Training nursing students to deliver contraceptives is hardly an innovation. Many if not most LMIC include family planning as part of their nursing curriculum training, and nurses in the private or public sector play a major role in family planning service delivery. Rather, the innovation is expanding this training into a mechanism for service delivery at the community level. In a system where the government is unable to pay health personnel in a timely fashion or at a livable wage, the nursing school model builds capacity of a large number of student providers without creating a salaried post that the government is not likely to support. In many cases they are as well if not better trained than providers in earlier cohorts without exposure to the revised curriculum

Often program managers design and implement a strategy, but they don't know the extent to which the realities in the field align with the intended approach. Evaluators use the term

"fidelity to design," which to program managers translates to basic questions of implementation. In the case of the nursing school model, this study provided answers about the experience on the ground across multiple stakeholder groups.

The study also revealed the socio-demographic characteristics of the nursing students and of the clients receiving their services. The findings support anecdotal evidence: focal points were mid-career professionals (married with children). Nursing students were young (mean age 22 years) and unmarried; few had begun childbearing. Clients on average were 27 years old, had mean of 3.5 children, relatedly few clients (11%)had yet to begin childbearing. Of particular interest, 41% of clients were first time users, the percentage being lower in Kinshasa (where services are more accessible) than in the other two provinces.

The use of eight different stakeholder groups yielded insights at two levels. The national and provincial level authorities spoke of the model's effect on the healthcare system (in macro terms), whereas the focal points, nursing students, ANAPECO parents, and FP clients provided information on the daily operation of the model at the field level (a micro perspective). Managers from implementing partners gave both. This exhaustive data collection (four quantitative surveys, four qualitative instruments, program and service statistics) – yielded an enormous amount of information but allowed for triangulation, confirming certain findings while bringing to light several key differences.

Overall, in multiple domains of the model had been implemented as designed. Cascade training starting at the national level resulted in a pool of trainers at the provincial level, capable of preparing the instructors at the nursing schools to implement the family planning curriculum. In turn, these instructors trained students in the third year of nursing school in selected schools of purposively selected provinces.

The major perceived benefits of the model were to increase access to and use of contraception, especially among youth; to make nursing schools with the FP curriculum more attractive to prospective students; and to provide students with marketable skills for future employment.

Overall, there appeared to be an effective collaboration between the main government players (the PNSR and the DESS/BESS) at the national level and provincial level, as well as with the BCZS and the implementing partners supporting the service delivery portion of the program.

Nursing students were generally satisfied with their training and the practical experience in providing services at the community level. Most had learned to insert implants and had done so at community events, although fewer had removed implants or taught self-injection of DMPA-SC.

The findings showed widespread acceptability of the model among national and provincial leaders, who appreciated its effect on strengthening the health system, especially in increasing the pool of capable trainers and instructors, and in improving access to contraception for selected health zones. Clients expressed high levels of satisfaction with the services.

Yet the findings pointed to two major weaknesses in the model. The first was frequent stockouts, cited across stakeholder groups. The second was difficulty with the information system: ensuring that students' data on the volume of contraceptives distributed to clients was successfully transferred to the health zone and entered into the SNIS. This shortcoming

contributed to underreporting the contribution of nursing schools to contraceptive uptake in the province and nationally.

Sustainability was a concern for informants at all levels. Although the country now has pools of trainers at the provincial level and experienced instructors in the schools, many informants stressed the need for the government to provide support to the model, including the purchase of sufficient contraception to cover the schools' needs. The idea – proposed by authorities – of increasing school fees met with resistance from the ANAPECO parents.

The study also identified several less frequently mentioned concerns: the need for increased supervision, more nursing school instructors, additional refresher training, and standardization of the budget (e.g., items covered) by implementing partners in support of the model.

Based on our literature search on family planning task shifting in Sub-Saharan Africa, we believe the current study is unique in the following ways. It is the first evaluation of a CBD model that utilizes the WHO framework for health systems strengthening to evaluate fidelity to design. It examines multiple indicators of outcome, not just process, as has been done in other evaluations. [20] It uses mixed methods to obtain the perspectives of eight different stakeholder groups, useful in triangulating the results. Previously published research on scale-up in family planning programs focuses largely on community health workers, midwives, and nurses,[21,22,23,24] in contrast to this study that involves nursing students. Other research examines specific methods – long-acting reversible contraception (LARCs) or DMPA-SC – whereas the DRC model (and thus this study) did not prioritize specific methods. The nursing school model evolved from a scarcity of government or donor resources to pay CHW, in contrast to CHWs in Ethiopia.[25] Yet it has benefited from the motivation of students to gain hands-on experience in service delivery. Finally, the model has yielded measurable results in a country considered to be among the most challenging for development work.[26] There is scant literature on the use of nursing students as CBD workers, in part because countries with greater resources provide paid employment to trained community health workers (e.g., the Health Extension Program in Ethiopia).

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[20] Ouedraogo L, Habonimana D, Nkurunziza T, Chilanga A, Hayfa E, Fatim T, et al. Towards achieving the family planning targets in the African region: a rapid review of task sharing policies. Reprod Health. 2021 Jan 23;18(1):22.

[21] Schatzkin E, Afolabi K, Adedeji O, Kongnyuy E, Shen J, Liu J. Lessons learned from a public sector community-based distribution program for scaling up DMPA-SC contraceptive services in Nigeria [Internet]. Gates Open Research; 2019 [cited 2024 Dec 2]. Available from: https://gatesopenresearch.org/articles/3-1500

[22] Asnake M, Tilahun Y. Scaling Up Community-Based Service Delivery of Implanon: The Integrated Family Health Program's Experience Training Health Extension Workers. Pathfinder International; 2010

[23] Akinyemi O, Harris B, Kawonga M. Health system readiness for innovation scale-up: the experience of community-based distribution of injectable contraceptives in Nigeria. BMC Health Serv Res. 2019 Dec 5;19(1):938

[24] Duvall S, Thurston S, Weinberger M, Nuccio O, Fuchs-Montgomery N. Scaling up delivery of contraceptive implants in sub-Saharan Africa: operational experiences of Marie Stopes International. Glob Health Sci Pract. 2014 Feb;2(1):72–92.

[25] Damtew ZA, Chekagn CT, Moges AS. The Health Extension Program of Ethiopia, Strengthening the Community Health System: Harvard Health Policy Review 2016. [31 Oct 2018]. Available from: http://www.hhpronline.org/articles/2016/12/17/the-health-extension-program-of-ethiopia.

[26] Dagne T. The Democratic Republic of Congo: Background and Current Developments. Washington, D.C.: Congressional Research Service; 2011 Sep. https://sgp.fas.org/crs/row/R40108.pdf

A. Limitations of the study

For budgetary reasons, we limited data collection on instruments requiring face-to-face interaction to the three largest provinces participating in the model; their experience may not reflect the realities in other provinces. We used purposeful sampling in selecting the national and provincial level authorities. We tried to obtain the universe of focal points and nursing students in the three selected provinces via telephone. However, after six failed attempts, the person was excluded from the study. Self-report among health zone personnel, focal points, nursing students, and clients is subject to social desirability bias, especially on satisfaction questions.

XVI. Conclusion

This study is unique in evaluating the outcomes of scale-up of a family planning intervention eight years post-introduction, implemented in a challenging environment (the DRC), from the perspective of eight stakeholder groups, using both quantitative and qualitive methods.

The scale-up of the nursing school model achieved many of its desired outcomes in terms of fidelity to design (across six HSS domains), acceptability, satisfaction, penetration, adoption, and efficiency. Two areas in greatest need for improvement include pervasive contraceptive stockouts and difficulties in using the DHIS 2 platform for entering data from the nursing schools into the SNIS. There is widespread concern for the sustainability of the model and near virtual agreement that the government should take ownership of the model, especially the purchase of contraception. The results will inform the further expansion of the model within the DRC and possibly to other countries facing similar challenges.

Tables & Figures

Table 1. Stakeholders/data sources, data collection methods, number of respondents, domains of the WHO framework covered, and outcomes addressed

Stakeholders interviewed/source of data	Type of data collection method	Number of respondents	WHO domains covered**	Type of outcome***	
				Implementation	Client
National level					
National level health authorities (Directors of DESS, PNSR, DSNIS)	In-depth interview*	2	SD, TR, IN, CO, FI, LG, AD	ACC, SUS	
Managers of partner organizations replicating model	In-depth interview*	5	SD, TR, IN, CO, FI, LG, AD	ADO	
Provincial level					
Provincial level authorities (BESS and PNSR)	In-depth interview*	6	SD, TR, IN, CO, FI, LG, AD	ACC	
MCZs (Chief district medical officers)	Telephone interview	49	IN, CO	ACC, FID	
Nursing school focal points/instructors	Telephone interview	135	SD, TR, IN, CO	FID	
Nursing students	Telephone interview	414	SD, TR, IN, CO	FID	SAT
Family planning clients	Client exit interview*	593	SD, CO	ACC	SAT
Parents of nursing students	Focus groups*	33	TR, FI		SAT
Program statistics					
Cost per CYP analysis	Cost per CYP analysis	-		COS	
Penetration:	% HZ covered	-		PEN	

*Data collection conducted in person
** Abbreviations of the WHO domains[27] covered: service delivery (SD), training (TR), information systems (IN), commodities (CO), finance (FI), and leadership/governance (LG).
*** Abbreviation of the types of outcomes covered (from Figure 1): acceptability (ACC), adoption (ADO), cost (COS), fidelity (FID), penetration (PEN), satisfaction (SAT), and sustainability (SUS).

[27]World Health Organization. (2010) Monitoring the Building Blocks of Health Systems: Handbook of Indicators and Measurement Strategies. *https://iris.who.int/bitstream/handle/10665/258734/9789241564052-eng.pdf*

Table 2a. Focal Points: Socio-demographic Characteristics (N=135)

	n	%
Sex		
Male	111	82.2
Female	24	17.8
Age (mean ±SD) years	44.2 ± 9.9	
Age		
Under 35 years	22	16.3
35- 49 years	70	51.9
50+ years	43	31.9
Education		
Secondary	10	7.4
Higher	125	92.6
Marital Status		
Single	19	14.1
In union	115	85.2
No answer	1	0.7
Number of children		
None	12	8.9
1-2	37	27.4
3 or more children	86	63.7
Province of residence		
Haut Katanga	11	8.1
Kinshasa	43	31.9
Kongo Central	44	32.6
Lualaba	12	8.9
Nord Kivu	9	6.7
Sud Kivu	9	6.7
Tshopo	7	5.2

SD: standard deviation

Table 2b. Focal Points: Experience with the Model (N=135)

	n	%
Received training for their role	118	87.4
Received training for the following responsibilities**		
Training the students	111	82.2
Collect data from the students and compile it.	110	81.5
Fill out the reporting template	105	77.8
Report the data generated by the DBC	105	77.8
Manage input stocks	100	74.1
Accompany the students in the community during internships and campaigns	100	74.1
Address the weaknesses and deficiencies observed in the DBC	100	74.1
Identify the needs of DBC	99	73.3
Supervise the students during the campaigns	98	72.6
Distributing DBC kits (inputs, consumables, data management tools, work tools, identifiers, etc.)	98	72.6
Manage the distribution of inputs to the students	95	70.4
Receive inputs and other consumables from BESS	93	68.9
Make the requisition	86	63.7
Distribute the transportation compensation to the students.	81	60.0
Have trained nursing students in their schools	133	98.5
Felt that the training they provided was sufficient to prepare the students to offer the full range of methods	97	71.9
Have been trained on data reporting into the DHIS2	101	74.8
When DHIS2 training was received		
Less than a year ago	1	0.7
Between one and two years	14	10.4
More than two years ago	86	63.7
Doesn't know	34	25.2
Received written instructions during training on the task of data collection	92	68.1
Felt they were well-trained to enter the data into the DHIS2 system	101	74.8
Responsibilities as the focal point**		
Teach the learners	131	97.0
Collect data from learners and compile it	134	99.3
Manage the input inventory	130	96.3
Manage the distribution of inputs to students	128	94.8
Supervise the students during the campaigns	133	98.5
Distribute transportation compensation to the students	115	85.2
Identify the needs of DBC	134	99.3
Make the requisition	121	89.6
Receive inputs and other consumables from the BESS	129	95.6
Distributing DBC kits (inputs, consumables, data management tools, work tools, identifiers, etc.)	131	97.0
Accompany the learners in the community during internships and campaigns.	132	97.8
Address the weaknesses and deficiencies observed in the DBC	129	95.6
Compile the data generated by the DBC	131	97.0

Fill in the reporting template	131	97.0
Report the data generated by the DBC	130	96.3
Locations gone to supervise the student's activities**		
Campaign, awareness event within the community	123	91.1
Going door to door	56	41.5
Distributing to their friends and family from their own home	8	5.9
Distributing to other students within the school	10	7.4
Accompanied students to the field outside of the regular campaign days	108	80.0
Reported frequency of stockouts		
Often	67	49.6
Sometimes	34	25.2
Rarely	31	23.0
Never	3	2.2
Methods most likely to cause stockout**		
Pill (COC, POP)	98	72.6
Emergency contraception	95	70.4
Male condoms	75	55.6
DMPA-SC (Sayana Press)	64	47.4
Female Condoms	41	30.4
Implanon NXT	43	31.9
CycleBeads	11	8.1
Contact for reporting stockouts		
To the BESS	89	65.9
To the BCZS	29	21.5
With the partner	10	7.4
At the Reference CS	4	3.0
Doesn't know	3	2.2
Mechanism to receive data from students (n=48)		
Service register	23	47.9
Contraceptive register	8	16.7
The two	7	14.6
Other	10	20.8
Reported frequency with which students are supposed to submit their data		
At the end of each campaign day	35	25.9
At the end of each week	7	5.2
At the end of each month	83	61.5
Other	10	7.4
Party to whom data is transmitted		
Data manager of the HZ	61	45.2
Central office of the HZ (BCZS)	33	24.4
BESS	33	24.4
NGO that supports the school for DBC activities	7	5.2
School supervisor for DBC	1	0.7
Party responsible for overseeing the proper transmission of data between the nursing school and the BCZS		
School prefect	48	35.6
Data manager of the HZ	36	26.7
Head of BESS	36	26.7

Chief District Medical Officer	14	10.4
NGO representative	1	0.7
Reported frequency with which data should transmitted to HZ		
Once a month	120	88.9
Once a quarter	2	1.5
Other	13	9.6
Participate in the monitoring and data validation meetings organized by the HZ		
Yes, once a month	28	20.7
Yes, from time to time	26	19.3
No	79	58.5
Doesn't know	2	1.5
Certainty that the data transmitted to the health zone is correctly entered into DHIS2		
Very sure	77	57.0
Sure	26	19.3
Doesn't know	22	16.3
Not very sure	3	2.2
Not at all sure	7	5.2
Framework in place for data quality control (validity, consistency, and completeness)	81	60.0
Had experienced difficulties in data reporting	87	64.4
Type of difficulties encountered in data reporting		
Lack of internet connection and computer tools	43	49.4
Loss of password and access ID for DHIS2	16	18.4
Inability to follow the manual/instructions for data reporting.	12	13.8
Lack of data from the learners	11	12.6
Lack of time to report the data	3	3.4
Lack of blank forms/pages	1	1.1
Doesn't know	1	1.1

HZ: Health Zone

** Multiple responses allowed

Table 3a. Nursing Students: Socio-demographic Characteristics (N=412)

	Kinshasa n=198		Sud-Kivu n=120		Haut-Katanga n=94		Total N=412	
	n	%	n	%	n	%	n	%
Gender								
Male	61	30.5	50	41.7	37	39.4	148	35.7
Female	139	69.5	70	58.3	57	60.6	266	64.3
Age. mean ± SD	21.40 ± 4.57		23.09 ± 5.22		21.35 ± 5.47		21.87 ± 5.03	
Age								
Under 19	81	40.5	12	10.0	33	35.1	126	30.4
20- 24 years	101	50.5	89	74.2	54	57.4	244	58.9
25+ years	18	9.0	19	15.8	7	7.4	44	10.6
Marital status								
Single	192	96.0	102	85.0	89	94.7	383	92.5
In union	8	4.0	14	11.7	5	5.3	27	6.5
No answer	0	0.0	4	3.3	0	0.0	4	1.0
No. of children								
None	180	90.0	101	84.2	87	92.6	368	88.9
1- 2 children	15	7.5	11	9.2	2	2.1	28	6.8
3 children and more	5	2.5	8	6.7	5	5.3	18	4.3
Has a personal cell phone	195	97.5	112	93.3	90	95.7	397	95.9

SD: standard deviation

Table 3b. Nursing Students: Experience with Training and Contraceptive Service Delivery (N=412)

	Kinshasa n=198		Sud-Kivu n=120		Haut-Katanga n=94		Total N=412	
	n	%	n	%	n	%	n	%
Received training in implant insertion	195	98.5	118	98.3	92	97.9	405	98.3
Received training in implant removal	149	75.3	109	90.8	70	74.5	328	79.6
Received training in teaching clients to self-inject	77	38.9	95	79.2	57	60.6	229	55.6
Satisfaction with the family planning training received								
Not at all satisfied	2	1.0	7	5.8	3	3.2	12	2.9
Partly satisfied	11	5.6	4	3.3	2	2.1	17	4.1
Satisfied	65	32.8	55	45.8	58	61.7	178	43.2
More than satisfied	46	23.2	7	5.8	3	3.2	56	13.6
Very satisfied	74	37.4	47	39.2	27	28.7	148	35.9
No answer	0	0.0	0	0.0	1	1.1	1	0.2
Aspects missing from training, according to nursing students who said something was missing*	12	92.3	10	90.9	5	100.0	27	93.1
Not enough practical experience	7	58.3	5	50.0	4	80.0	16	59.3
Not enough theory	2	16.7	1	10.0	2	40.0	5	18.5
Inadequate support from supervisors	1	8.3	2	20.0	0	0.0	3	11.1
Other	5	41.7	5	50.0	2	40.0	12	44.4
Least liked aspect of family planning training								
Lack of financial compensation	49	24.5	48	40.0	15	16.0	112	27.1
Frustration of rumors and resistance from the community	12	6.0	7	5.8	6	6.4	25	6.0
Inadequate support from supervisors	3	1.5	3	2.5	0	0.0	6	1.4
Frequent stock-outs	15	7.5	16	13.3	0	0.0	31	7.5
I didn't get enough training	12	6.0	9	7.5	7	7.4	28	6.8
Other	89	44.5	19	15.8	47	50.0	155	37.4

No answer	20	10.0	18	15.0	19	20.2	57	13.8
Most enjoyed aspect of family planning training**								
Opportunity to acquire technical experience	129	64.5	87	72.5	61	64.9	277	66.9
Improve my interpersonal skills	137	68.5	84	70.0	22	23.4	243	58.7
Contribute to the well-being of the community	89	44.5	93	77.5	27	28.7	209	50.5
Be more respected as a nurse	18	9.0	40	33.3	6	6.4	64	15.5
Be more respected by members of my community	13	6.5	35	29.2	5	5.3	53	12.8
Other	25	12.5	8	6.7	20	21.3	53	12.8
No answer	1	0.5	2	1.7	3	3.2	6	1.4
Thought their FP training would be useful for the future	195	98.5	119	99.2	91	96.8	405	98.3
Locations gone to provide counseling and/or family planning services to interested clients**								
Campaign. community awareness event	198	100.0	118	98.3	90	95.7	406	98.5
Going door to door	196	99.0	116	96.7	93	98.9	405	98.3
Distributing to my friends and family from my own house	171	86.4	111	92.5	82	87.2	364	88.3
Distributing to other students within the school	120	60.6	87	72.5	46	48.9	253	61.4
Others	52	26.3	13	10.8	27	28.7	92	22.3
Number of campaigns participated in (median)	5		5		4		5	
Reported that they distributed methods free of charge at community outreach events	193	97.5	120	100.0	93	98.9	406	98.5
Tended to charge for methods when distributing them from their home	165	96.5	95	85.6	74	90.2	334	91.8
Reported having inserted an implant at a community event	189	95.5	104	86.7	81	86.2	374	90.8
Types of implants already inserted**								
Implanon NXT	186	98.4	100	96.2	75	92.6	361	96.5
Jadelle	98	51.9	42	40.4	36	44.4	176	47.1
Levoplant	59	31.2	43	41.3	13	16.0	115	30.7
Reported having removed an implant at a community event	138	69.7	68	56.7	50	53.2	256	62.1

Reported having taught women to self-inject DMPA-SC	86	43.3	96	80.0	50	53.2	232	56.3
More hours spent distributing contraceptives between campaigns and during routine care								
Campaigns	138	69.0	81	67.5	69	73.4	288	69.6
Routine	40	20.0	22	18.3	17	18.1	79	19.1
The same amount of time for both	22	11.0	17	14.2	8	8.5	47	11.4
Frequency with which women were advised / provided contraceptives as part of routine activities								
More than once a week	66	33.0	60	50.0	29	30.9	155	37.4
At least once a week	25	12.5	24	20.0	27	28.7	76	18.4
Once or twice a month	72	36.0	19	15.8	19	20.2	110	26.6
Less than once a month	19	9.5	7	5.8	7	7.4	33	8.0
Never	18	9.0	10	8.3	12	12.8	40	9.7
Factors that prevent students from working more often on routine activities								
No time (too busy with school. work. family obligations)	95	47.5	33	27.5	47	50.0	175	42.3
No contraceptives to provide	47	23.5	56	46.7	38	40.4	141	34.1
No financial incentive	16	8.0	45	37.5	10	10.6	71	17.1
Fear of people's reaction when you work individually (instead of being part of a school campaign)	22	11.0	5	4.2	10	10.6	37	8.9
Other	48	24.0	25	20.8	10	10.6	83	20.0
Venues where contraceptives are distributed by students outside of campaigns **								
School	30	15.0	34	28.3	11	11.7	75	18.1
Church	38	19.0	24	20.0	22	23.4	84	20.3
Market	68	34.0	44	36.7	15	16.0	127	30.7
Go house to house	148	74.0	95	79.2	67	71.3	310	74.9
From their own homes	118	59.0	73	60.8	20	21.3	211	51.0
Others	83	41.5	27	22.5	28	29.8	138	33.3

Clients sometimes tell students that they are too young to distribute contraceptive methods								
Often	52	26.0	16	13.3	13	13.8	81	19.6
Sometimes	21	10.5	22	18.3	14	14.9	57	13.8
Rarely	62	31.0	28	23.3	38	40.4	128	30.9
Never	65	32.5	54	45.0	29	30.9	148	35.7
Reported frequency of stockouts								
Often	69	34.5	32	26.7	19	20.2	120	29.0
Sometimes	29	14.5	35	29.2	10	10.6	74	17.9
Rarely	82	41.0	48	40.0	52	55.3	182	44.0
Never	20	10.0	5	4.2	13	13.8	38	9.2
Methods most likely to cause stockout**								
Pill (COC, POP)	58	29.0	68	56.7	55	58.5	181	43.7
Emergency contraception	120	60.0	94	78.3	48	51.1	262	63.3
Male condoms	93	46.5	77	64.2	34	36.2	204	49.3
Female Condoms	29	14.5	40	33.3	8	8.5	77	18.6
Implanon NXT	55	27.5	29	24.2	23	24.5	107	25.8
DMPA-SC (Sayana Press)	165	82.5	61	50.8	46	48.9	272	65.7
CycleBeads	39	19.5	30	25.0	32	34.0	101	24.4
Stockouts are reported to another party	184	92.0	119	99.2	92	97.9	395	95.4
Party to whom stockouts are reported								
Trainer	38	20.7	8	6.7	16	17.4	62	15.7
Professor	47	25.5	26	21.8	23	25.0	96	24.3
Supervisor	36	19.6	28	23.5	23	25.0	87	22.0
Focal point	5	2.7	24	20.2	2	2.2	31	7.8
Other	58	31.5	33	27.7	28	30.4	119	30.1
What students do when stocked out of method**								
Guide the customers to a health facility	55	27.5	48	40.0	17	18.1	120	29.0

Provides them with another method	59	29.5	40	33.3	26	27.7	125	30.2
Ask them to come back later.	99	49.5	78	65.0	48	51.1	225	54.3
Stop distributing this type of contraceptive.	11	5.5	5	4.2	5	5.3	21	5.1
Don't talk about this method to the client.	1	0.5	5	4.2	1	1.1	7	1.7
Other	83	41.5	18	15.0	20	21.3	121	29.2
Reported frequency of contraceptive resupply								
Once a week	4	2.0	14	11.7	1	1.1	19	4.6
Once a month	6	3.0	17	14.2	6	6.4	29	7.0
Just before a campaign	105	52.5	44	36.7	23	24.5	172	41.5
On request	50	25.0	29	24.2	33	35.1	112	27.1
There is no fixed schedule.	35	17.5	16	13.3	31	33.0	82	19.8
Filled out a contraceptive commodities form	162	81.0	117	97.5	88	93.6	367	88.6
Type of form completed								
Service register	6	3.0	6	5.0	5	5.3	17	4.1
Contraceptive register	37	18.5	60	50.0	47	50.0	144	34.8
Both	14	7.0	15	12.5	19	20.2	48	11.6
None	27	13.5	9	7.5	4	4.3	40	9.7
Other	116	58.0	30	25.0	19	20.2	165	39.9
Reported frequency with which students are required to submit their data								
After each service	118	59.0	70	58.3	68	72.3	256	61.8
Once a week	25	12.5	14	11.7	4	4.3	43	10.4
Once a month	28	14.0	33	27.5	19	20.2	80	19.3
Other	29	14.5	3	2.5	3	3.2	35	8.5
Types of data that should be transmitted by the students, according to guidelines**								
Data related to distribution during internships	106	53.0	64	53.3	54	57.4	224	54.1
Campaign data	120	60.0	99	82.5	75	79.8	294	71.0

Routine data	78	39.0	61	50.8	39	41.5	178	43.0
All of this data	59	29.5	17	14.2	10	10.6	86	20.8
No data	0	0.0	1	0.8	1	1.1	2	0.5
Party to whom data is transmitted								
Trainer	66	33.0	24	20.0	31	33.0	121	29.2
Professor	91	45.5	28	23.3	28	29.8	147	35.5
Supervisor	38	19.0	44	36.7	31	33.0	113	27.3
Focal point	5	2.5	24	20.0	4	4.3	33	8.0

*Among who said:" Not at all satisfied" or "Partly satisfied" for "How satisfied are you with the family planning training you received at your nursing school", ** Multiple responses allowed

Table 4a. Family Planning Clients: Socio-demographic Characteristics (N=593)

	Haut Katanga n = 171		Kinshasa n = 278		South Kivu n = 144		Total N = 593	
	n	%	n	%	n	%	n	%
Client age (mean and SD)	28.9 ± 7.8		26.2 ± 7.1		27.5 ± 6.6		27.3 ± 7.3	
Client age								
15-19	21	12.3	48	17.3	13	9.0	82	13.8
20 -24	37	21.6	93	33.5	41	28.5	171	28.8
25-34	68	39.8	94	33.8	67	46.5	229	38.6
35-49	45	26.3	43	15.5	23	16.0	111	18.7
Education								
None/Primary	39	22.8	26	9.4	34	23.6	99	16.7
Uncompleted secondary	74	45.4	168	61.8	72	53.3	314	55.1
Completed secondary	40	24.5	72	26.5	25	23.5	137	24.0
University	18	10.5	12	4.3	13	9.0	43	7.3
Marital status								
Never married	14	8.2	121	43.5	7	4.9	142	23.9
Married/in Union	146	85.4	147	52.9	133	92.4	426	71.8
Widow/divorced	11	6.4	10	3.6	4	2.8	25	4.2
Religion								
Evangelical	87	50.9	187	67.3	6	4.2	280	47.2
Protestant	52	30.4	19	6.8	85	59.0	156	26.3
Catholic	15	8.8	24	8.6	43	29.9	82	13.8
Other	17	9.9	48	17.3	10	6.9	75	12.6
Mean number of children	4.1		2.7		4.1		3.5	
Number of children								
None	19	11.1	40	14.4	7	4.9	66	11.1
1-2	45	26.3	130	46.8	38	26.4	213	35.9
3 - 4	48	28.1	67	24.1	47	32.6	162	27.3
5+	59	34.5	41	14.7	52	36.1	152	25.6

Desire for more children								
Want another within two years	23	13.5	17	6.1	27	18.8	67	11.3
Want another but not in the next two years	102	59.6	205	73.7	85	59.0	392	66.1
Want no more	46	26.9	56	20.1	32	22.2	134	22.6
Employment								
Job – paid in cash	47	27.5	132	47.5	70	48.6	249	42.0
Job – paid in cash and kind	5	2.9	0	0.0	3	2.1	8	1.3
Job – paid in kind	3	1.8	3	1.1	9	6.3	15	2.5
No job/No response	116	67.8	143	51.4	62	43.1	321	54.1
Has a cell phone	129	75.4	144	51.8	107	74.3	380	64.1
Has ever used contraception	76	44.4	188	67.6	83	57.6	347	58.5

SD: standard deviation

Table 4b. Family Planning Clients: Experience in Receiving Family Planning Services from the Nursing Students at the Community Level (N=593)

	Haut Katanga n = 171		Kinshasa n = 278		South Kivu n = 144		Total N = 593	
	n	%	n	%	n	%	n	%
Approximate wait time to be seen by provider								
More than an hour	3	1.8	18	6.5	4	2.8	25	4.2
Between 30 minutes and 1 hour	27	15.8	43	15.5	44	30.6	114	19.2
Less than 30 minutes	141	82.5	217	78.1	96	66.7	454	76.6
Method received								
CycleBeads	52	30.4	41	14.7	36	25.0	129	21.8
Implanon	25	14.6	93	33.5	8	5.6	126	21.2
DMPA-SC (Sayana Press)	21	12.3	65	23.4	40	27.8	126	21.2
Pills	68	39.8	1	0.4	47	32.6	116	19.6
Jadelle	1	0.6	68	24.5	11	7.6	80	13.5
Emergency pill	1	0.6	9	3.2	0	0.0	10	1.7
Male condom	2	1.2	1	0.4	2	1.4	5	0.8
Method received was client's first choice	153	89.5	248	89.2	126	87.5	527	88.9
Who chose the method received								
Client decided	132	77.2	177	63.7	97	67.4	406	68.5
Client and partner jointly decided	28	16.4	68	24.5	30	20.8	126	21.2
Client and provider jointly decided	8	4.7	17	6.1	8	5.6	33	5.6
Other	3	1.8	16	5.8	9	6.3	28	4.7
Informed about possible side effects or problems she might have with the method	130	76.0	181	65.1	125	86.8	436	73.5
Told what to do if she experienced any side effects or problems	120	70.2	170	61.2	112	77.8	402	67.8
Informed about other methods of family planning	160	93.6	169	60.8	131	91.0	460	77.6

Told about the possibility of switching to another method if the method she selected was not suitable	121	70.8	131	47.1	123	85.4	375	63.2
Information in all four questions (above) was offered to help her informed choice	92	53.8	73	26.6	94	65.3	260	43.8
Satisfaction with the information/advice provided by the service provider								
Completely satisfied	140	81.9	234	84.2	112	77.8	486	82.0
Somewhat satisfied	28	16.4	42	15.1	31	21.5	101	17.0
Somewhat dissatisfied/Not at all satisfied	3	1.8	2	0.8	1	0.7	6	1
Satisfaction with the services provided by the service provider								
Completely satisfied	141	82.5	240	86.3	113	78.5	494	83.3
Somewhat satisfied	28	16.4	36	12.9	31	21.5	95	16.0
Somewhat dissatisfied/Not at all satisfied	2	1.2	2	0.8	0	0	4	0.6
Client venue preference								
Health center	78	45.6	153	55.0	96	66.7	327	55.1
At home/community	86	50,3	92	33,1	48	33,3	226	38,1
No preference	7	4.1	32	11.5	0	0.0	39	6.6
Do not know	0	0.0	1	0.4	0	0.0	1	0.2
Reasons for preference of “in the community”*								
Cheaper	7	35.0	21	44.7	1	10.0	29	37.7
Less transportation cost	11	55.0	12	25.5	6	60.0	29	37.7
Accessibility	5	25.0	16	34.0	1	10.0	22	28.6
Trust provider	3	15.0	7	14.9	4	40.0	14	18.2
More discrete	6	30.0	6	12.8	0	0.0	12	15.6
No wait	4	20.0	7	14.9	0	0.0	11	14.3
Quality of counseling	2	10.0	5	10.6	1	10.0	8	10.4
Likelihood of recommending FP from CBD service to a friend or family member who would like to avoid or delay pregnancy								
Would highly recommend it	108	63.2	182	65.5	80	55.6	370	62.4

Would recommend	58	33.9	85	30.6	60	41.7	203	34.2
Would not recommend	5	2.9	6	2.2	4	2.8	15	2.5
No opinion / Not sure	0	0.0	5	1.8	0	0.0	5	0.8

FP: family planning; CBD: community-based distribution

*Of those who responded that their preference was a community event

Table 5. District Health Medical Director (MCZ): experience with the nursing school model
(N=39)

	n	%
Where ITMs in this HZ get their contraceptives from		
Partners directly to ITMs	20	51.3
Health Zone delivers contraceptives to schools	14	35.9
Schools collect contraceptives from the Health Zone	4	10.2
It depends / both	1	2.6
Frequency with which schools are supplied^		
As needed / on request	6	42.9
Monthly	3	21.4
Quarterly	4	28.6
Other	1	7.1
Delivery slips filled for these products^	14	100.0
Schools reporting stock-outs in the last 12 months^		
Often	5	35.7
Some of the time	3	21.4
Rarely	2	14.3
Never	4	28.6
Most frequently reported methods out of stock^**		
DMPA-SC (Sayana Press)	7	50.0
The contraceptive pill (COC, POP)	6	42.9
Male condoms	6	42.9
The morning-after pill / emergency contraception	4	28.6
Implanon NXT	3	21.4
Female condoms	2	14.3
Cycle necklace)	2	14.3
Other	1	7.1
Tools to manage stock of medicines with schools^**		
Contraceptive management forms	14	100
Contraceptive order forms	8	57.1
Service delivery forms	10	71.4
Delivery receipts	13	92.9
All tools listed	10	71.4
HZ management team responsible for data processing	39	100.0
HZ ever encountered difficulties in data reporting	25	60.4
Difficulties in data reporting (n=25)		
Lack of data from the school	15	60.0

Lack of internet connection and IT tools	11	44.0
Lack of time to report data	5	20.0
Lack of training	4	16.0
Lack of DHIS2 teaching module account	2	8.0
Inability to follow manual/data reporting instructions	1	4.0
Mechanism for receipt of student data		
Through school focal points	20	51.3
Service register	6	15.4
Through a paper SNIS education report	5	12.8
I do not receive data	4	10.3
Contraceptive register	4	10.3
Reported frequency for focal points to provide data		
At the end of each month	21	53.9
At the end of each awareness day/after each activity	10	25.6
Other	8	20.5
Difficulties linked to data quality		
Inconsistencies between consumption and quality available at the end of the month	25	64,1
Delays in transmission	17	43.6
Incomplete data transmission	12	30.8
HZ enters data into DHIS2	39	100.0
ECZ comfort in entering data into DHIS2 from students via the focal points		
Completely comfortable	21	53.8
Comfortable / Neutral	14	35.9
Not at ease	2	5.1
Not at all comfortable	3	7.7
Party responsible for sending data before the HZ enters it in DHIS2		
School focal point	27	69.2
School CBD supervisor	9	23.1
School/Prefect	6	15.4
Student	1	2.6
NGO supporting school for CBD activities	1	2.6
Don't know	2	5.1
Reported frequency of data receipt from students in the HZ		
Every day after an activity	4	10.3
Weekly	18	46.2
Once a month	16	41.0
Quarterly	1	2.6
Said that there are problems with the ITM data integration module	7	17.9
Said that there is a quality control framework for student data (student performance) (validity, consistency and completeness)	24	61.5
If yes, what is this framework?		
Specific school data validation meeting	4	16.7

ZS monthly monitoring meeting	14	58.3
Working session between ZS focal point and data manager	4	16.7
Other	2	8.3
Have ever supervised Nursing student activities	24	61.5
Can we see the report of the last supervision? (n=24)		
Yes, report seen	1	4.2
Yes, report not seen	23	95.8

HZ: Health Zone; ITM: *Instituts des Techniques Médicales* (nursing schools); CBD: community-based distributors

^Among those who deliver contraceptives to schools (n=14), ** multiple

Table 6. Number of provinces and schools that have adopted the nursing school model as of late 2023

	Province	Total number of schools	Number of schools integrating the FP curriculum	Percentage	Existing Donors
Provinces using the nursing school model					
1	Kongo Central	48	46	95.8%	BMGF, CAFI
2	Lualaba	18	11	61.1%	CAFI
3	Kinshasa	95	57	60.0%	BMGF, USAID, CAFI
4	Haut Katanga	32	13	40.6%	CAFI
5	Sud Kivu	48	18	37.5%	CAFI
6	Nord Kivu	28	18	64.3%	CAFI
7	Tshopo	24	7	29.2%	CAFI
8	Kasai Oriental	17	4	23.5%	USAID
9	Ituri	22	2	9.1%	USAID
10	Haut Lomami	11	2	18.2%	USAID
11	Tanganyika	12	2	16.7%	USAID
12	Sankuru	19	2	10.5%	USAID
13	Kwilu	37	3	8.1%	World Bank
14	Lomami	26	2	7.7%	USAID
15	Kasai	26	2	7.7%	World Bank
Provinces not using the nursing school model					
16	Bas Uele	8	0	0.0%	
17	Equateur	13	0	0.0%	
18	Haut Uele	15	0	0.0%	
19	Kwango	20	0	0.0%	
20	Kasai Central	35	0	0.0%	
21	Maindombe	16	0	0.0%	
22	Mongala	34	0	0.0%	
23	Maniema	10	0	0.0%	
24	Nord Ubangi	8	0	0.0%	
25	Sud Ubangi	14	0	0.0%	
26	Tshuapa	9	0	0.0%	
	Total	**645**	**189**	**29.3%**	

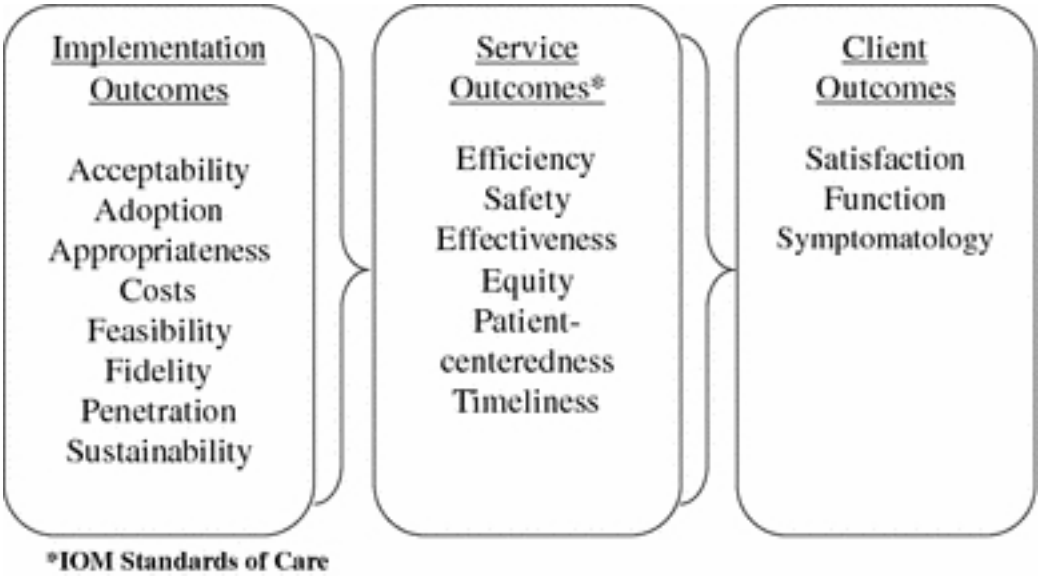

Figure 1. Types of outcomes in implementation research[28]

[28] Proctor E, Silmere H, Raghavan R, Hovmand P, Aarons G, Bunger A, et al. Outcomes for implementation research: conceptual distinctions, measurement challenges, and research agenda. Adm Policy Ment Heal Serv Res. 2011;38(2):65–76

Figure 2. Expansion in the number of health zones and provinces in which the nursing school model became operational between 2020-22