Reforming healthcare systems from “the bottom up”

Working Pathways for Local “Traveling Models”

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Abstract

Despite improvements in some of its indicators, Niger’s healthcare system remains fragile and is largely characterized by “unwelcoming medical practices”. This is partly due to the fact that intervention schemes, protocols, and most health policies aimed at reforming healthcare systems are largely driven and funded by international aid actors and struggle to take into account the real-life contexts and day-to-day operations of health services. However, despite precarious working conditions in which they operate, some facilities offer better quality care. These facilities share the commonality of being led by “local reformers.” Invisible, hardly known, poorly promoted, and insufficiently encouraged, they invent solutions adapted to the daily problems of public healthcare services with the means at their disposal. Drawing on ethnographic data, this article offers an analysis of the solutions and innovation systems they propose. By revisiting the experience of operational research, we invite exploration of avenues to support this “bottom-up” approach to healthcare system reform, which can be an alternative, or at the very least, an essential complementary approach to contemporary strategies for improving healthcare.

Keywords

Healthcare system, reform, traveling models, internal reformers, local innovations

Introduction

Despite major investments and significant results recorded in the early 2000s (Kante et al., 2024), health indicators in Niger remain low. All research conducted by the Laboratory for the Study and Research on Social Dynamics and Local Development (LASDEL) in this field for almost twenty years – thousands of interviews, hundreds of observations in health facilities across the country – show the persistence of an " unfriendly medical environment" characterized by great dissatisfaction and distrust of the population regarding the quality of services provided by the public health sector and the often difficult relationships between caregivers and patients (Jaffré & Olivier de Sardan, 2003).

It often appears that promises to improve the health of populations, mainly funded by donors and arising from new technical solutions developed by international experts (Falisse, 2019), clash with a lack of adaptation of interventions, procedures, and protocols to local contexts, especially those of health facilities, in other words, the "real world" of health huts, maternity wards, integrated health centers (IHC), and hospitals (Olivier de Sardan, 2016; Caremel 2023; Issoufou, 2015, 2020).

These limitations are partly related to the very structure of these policies (Atlani-Duault & Vidal, 2013; Chabrol & Gaudillière, 2023) and to the "project" approaches (Giovalluchi & Olivier de Sardan, 2009) which largely rely on "traveling models" (Behrends et al., 2014; Olivier de Sardan, 2021) that, while aiming to address central issues of health systems, struggle to take into account routine behaviors, norms of healthcare practices, and their misalignment with the official norms that are promoted (Olivier de Sardan, 2021). Ultimately, with too few exceptions, these policies, strategies, reforms, programs, projects, and protocols rely less on a fine adaptation of strategies and solutions to the specificities and potentialities of the contexts than on an ambition to transform local contexts (often misunderstood or not adequately considered) (Fassin, 2005; Brives et al., 2016) to match the interventions. This observation explains the importance of the difficulties encountered during the transition to the local level, and the numerous gaps observed (implementation gaps) between stated interventions and their implementation in the field (Hamani, 2013, 2023; Olivier de Sardan, 2014).

These discrepancies outline the nuances of "neglected healthcare systems issues[1]" which are critical points (Olivier de Sardan, 2021) that successive reforms, generally top-down and imported, fail to untangle.

Standardized and top-down logics often lead to ignoring the internal potentials of health systems that one seeks to strengthen. The norms of practices deployed daily by healthcare workers are not only problems; they constitute an essential reality and sometimes a resource. This is the conclusion reached by LASDEL after almost twenty years of field research. This long-term work of description and explanation of the daily (dys)functioning of health services (and more broadly of public services and the state) conducted by our teams has shown us that some structures, despite facing precarious working conditions, still provide quality care. These rely on isolated agents or care teams that develop innovations and new, concrete responses to recurrent daily problems. These solutions are developed by "bricolage" from the routines and scarcity that characterize health facilities. In doing so, these agents improve the quality of care and the functioning of the healthcare structures where they work. Making this "bricolage" an object for research and public policies invites the development of a "bricolage," that is to say, an analysis of the ecology of "skill as creativity in the act of production itself" (Ingold, 2013), in this case, resourcefulness, technical and social inventiveness operated by healthcare actors daily to make healthcare systems work.

1 Title of a research program conducted by LASDEL funded by the International Development Research Centre (IDRC).

For actors in political, development, and health systems, better understanding local innovations[2] and how they contribute to "bottom-up" and cost-effective improvement of healthcare services should be an essential opportunity. At the same time, understanding these issues potentially provides a response to criticisms of aid to the Sahel since the 1970s (Naudet, 1999), which are still relevant today. Promoting endogenous solutions based largely on local resources constitutes a "new" path, compared to dominant practices, potentially able to address a number of bottlenecks and constraints encountered in the implementation of public policies and health programs. Demonstrating the feasibility and relevance of this approach is a challenge.

We have taken up this challenge as part of operational research with limited resources[3]. An effort of identification, documentation, enumeration, and systematic review "bottom-up" innovations" in the health sector in five regions of Niger and Benin has been initiated. This has led to the construction of a typology of "bottom up" innovations (part 1). At the same time, their bearers have been identified, and their networking has allowed testing, developing, and disseminating "local traveling models." The collective intelligence of reformers and their bricolage has led to proposing solutions to neglected health problems (part 2). This joint work, over time, with reformers close to their environment, has led to a better understanding of local innovation systems and to propose a typology (part 3). This work has contributed to knowledge brokerage and the integration of this approach into Niger's public policies (conclusion).

Identifying and documenting bottom-up innovations

The main activity of this operational research was to document locally implemented innovations as well as the trajectory of the reformers. We had several questions: What are the innovations deployed by the reformist agents? Can they build up a critical mass? Under what conditions? Do the innovations deployed by the reformist agents constitute a system? If so, can this system serve as an alternative or complementary model to vertical interventions aimed at improving the quality of care, particularly in maternal and child health, and contributing to the strengthening of the healthcare system?

A methodological point (1): documenting local reforms

A simplified data collection grid allowed us to situate innovations within their contexts, shedding light on their trajectory, the actors involved, the difficulties and successes, and any potential interactions with other reformist practices.

This written documentation, based on interviews and observations of healthcare services, was complemented by audiovisual documentation in the form of diagrams, photographs, and, most importantly, videos. Videos are highly useful for disseminating innovations in a context where actors are less inclined towards reading.

At the end of this action-research phase, it became clear that numerous tools exist for documenting innovations, and that work needs to be undertaken to align them, in particular with the frameworks proposed by the World Health Organization (WHO), while keeping in mind the need for simplicity in the formats and the feasibility of filling them in by the reformers themselves.

2 We propose a non-economic and market-based definition of innovation for this text, based on a variation of the one proposed by Olivier de Sardan (1995) as an original graft bringing about change in a local healthcare system by one of its actors or stakeholders.

3 This action research, led by J.-F. Caremel and M.S. Souley Issoufou, constituted the second phase of a research program by LASDEL on maternal health in Benin and Niger, funded by IDRC (Canada) and coordinated by A. Elhadji Dagobi. It was conducted with remaining funds that allowed for the financing of 0.5 full-time equivalent researchers for one year, a post-doctoral researcher, and a research assistant to conduct this research in Niger and Benin over a period of eighteen months, extended due to the Covid-19 pandemic.

A multitude of innovations

An initial corpus of innovations identified following LASDEL's previous research was entered in a database. It was completed between May 2019 and April 2021 following the inventory of innovative practices initiated by reformers in the intervention areas of the research program, which were gradually expanded as understanding and exploration of innovation networks progressed (see Part 3).

More than 60 reformers and over 150 innovations were identified and documented on regularly updated data sheets, case studies, and videos. The data has been integrated into a database that has enabled the characterization of these innovations and an understanding of their dynamics.

Essentially endogenous innovations

94% of the innovations selected and documented are endogenous solutions, meaning they have not been supported by partners or recommended by management.

Four examples of endogenous innovations

Establishment of emergency kits in delivery rooms: in the area of childbirth care, a number of reformers have taken the initiative of setting up emergency kits in delivery rooms so as to be able to react quickly in the event of complications. The materials used must be replaced by the woman in labor or her family before leaving the maternity ward. This prevents: 1) asking women to spend money on small medical equipment that may prove unnecessary; and 2) wasting time during crucial moments. In facilities that have not set up these kits, accompanying individuals are asked to go to the pharmacy in case of complications. The cost of acquiring products can thus be reduced for patients, who are not obliged to rush to the on-call pharmacy (which is often located in front of the health facility and offers products at high prices), and this contributes to stock rotation, preventing certain products from expiring.

Contraceptive stock entrusted to a maternity ward girl for distribution to communities with limited access to sexual and reproductive health services: To improve family planning indicators and enhance social accessibility, reformers entrust a stock of contraceptives to maternity ward girls. The stock is replenished monthly based on consumption documented in the tracking register (a simple notebook). The maternity ward girl provides advice in neighborhoods and ensures the renewal of contraceptive methods (primarily pills and condoms). This solution, developed in various settings, including peri-urban areas, complements the community-based distribution (CBD) strategies deployed in the community health strategy by the Ministry of Health, which rely on community relays, mainly men. These individuals often have weak ties with health facilities that suffer from frequent stockouts. A particularly relevant innovation was to entrust these stocks to a (young) maternity ward girl from a minority group (Peuls), who is from a lineage of traditional midwives. This approach, with its well-considered choice of carrier, greatly promotes accessibility and trust among women, especially those most excluded from care, thereby contributing to the improvement of the facility's performance indicators.

Improvement of the responsiveness of biological analysis services: Some reformers have strengthened the continuity of laboratory services and improved their responsiveness, notably by introducing a system that provides: 1) vouchers of different colors (red) for urgent tests, indicating the times of request, sample transmission, receipt at the laboratory, and return of test results. This system helps identify bottlenecks and assess system performance; 2) a telephone line system within the hospital for laboratory technicians to communicate results or inform the requesting service of their availability; 3) a system of laboratory technician presence, including at night, to ensure that all urgent test requests can be immediately processed.

Avoiding exceptional expenses in emergencies: Reformers have implemented a 'commitment' system with the military supervisor of regional hospital facilities. Families of patients commit to reimbursing the costs incurred by the hospital for treating their relative. This solution avoids delays and complications, thereby reducing treatment costs, and also preventing families from urgently

selling their assets to cover expenses related to patient care. Respect for uniformed personnel (military and police) leads to very high reimbursement rates of these advance healthcare payment expenses and has led to the gradual scaling up of this system.

The 6% of documented innovations in the database that are not endogenous are innovations initiated by a partner but subject to strong local appropriation and adaptations.

Two examples of non-endogenous innovations:

The "additional cent" system allows for the development of free sanitary evacuation systems, where the prepaid cost is shared and close to financial balance. The initial principle is to mobilize local resources: 100 francs CFA per consultation, supplemented by contributions from municipalities, members of the diaspora, large-scale merchants, and politicians, sometimes also by contributions in-kind by receiving a specific quantity of millet after the harvest. The additional cent shortens the delays in care and referral to a hospital facility. This system, initiated by the Belgian Technical Cooperation, has spread widely, scaled up regionally by an NGO and then relayed by international medical NGOs, but sometimes without (Diarra, 2012).

The Surge Nutrition[4] is a toolkit developed by the NGO CONCERN aimed at improving preparedness and response to the seasonal increase in malnutrition cases. It is based on community diagnosis and planning and relies on mobilizing local resources, supplemented during peak activity phases by district management teams and multifunctional platform programs (PTF). We will further discuss the crucial role of reformers in the trajectory of this strategy in Niger (Caremel & Issoufou, 2021). The Surge Nutrition has been expanded in some facilities to address other pathologies (malaria, ARI...). The transition from a disease-specific approach to a comprehensive approach to preparing for peak activities at the service level is in the process of being standardized and incorporated into a national strategy in Niger. Half of these solutions are palliative responses to dysfunctions in the healthcare system—mobilizing funds beyond the pre-established lump sums for the additional cent, developing an ad hoc system in response to weaknesses in microplanning and data analysis—and partly new, sometimes unexpected solutions to common problems.

Innovations Deployed in Frontline Facilities

The innovations were predominantly identified in frontline facilities (CSI: 49%), district hospitals (13%), and second-tier facilities (regional hospitals and mother-child health centers: 26%). Other innovations are primarily the result of district management teams (12%).

Depending on the site, we find relatively different innovations. This observation has led to the proposal of the introduction of an initial typology of innovations.

"Palliative" and "Meliorative" Innovations

Some innovations can be grouped into two main ideal types. We have thus distinguished reforming practices that are more in line with "palliative" innovations and those that are more akin to "meliorative" innovations. They represent 48% and 52% of documented innovations respectively.

By palliative innovation, we mean a novel solution that brings about change, alleviating the symptoms of healthcare structure dysfunctions without necessarily addressing their causes; often contradicting official norms and certain expectations or recommendations, in the sense that it may have unintended potential consequences; but overall contributes to service improvement.

Three examples of palliative innovations

The systematic insertion of a catheter for women in active labor was initiated by a maternity director to address midwives' competency issues (difficulty finding a vein for emergency insertion) and the absence of labor monitoring (non-use of the partograph or retrospective filling, hence the name "postograph"). The systematic insertion of the catheter allows for intravenous administration

4 Community-based emergency management of acute malnutrition.

of products, especially in the event of hemorrhage. This innovation, deployed following the death of a woman in a maternity ward, is now systematically used by midwives practicing in this facility, as well as by all those who have passed through and are now responsible for maternity wards, whether private or public, in Zinder, Maradi, Niamey... This practice is a concrete and simple response but does not comply with WHO recommendations transcribed in national protocols, which reserve catheter insertion for complications and when intravenous administration of a product is necessary. This limitation is notably explained by the increased risk of nosocomial infections associated with the insertion of these devices.

The additional cent involves requesting the payment of 100 francs CFA on all consultations to ensure evacuation in case of emergency or charging 50 to 100 francs CFA for the lamination of health booklets (free), to cover certain operating costs of the facilities, notably the acquisition of equipment and hygiene products. While these practices make it possible to ensure evacuations of urgent cases and hygiene in healthcare facilities—two essential services for the quality and continuity of care—they contradict the policy of free healthcare for certain patients (children under 5 years old) or services (prenatal consultations [PNC], family planning...).

An honorary appointment to bypass social rules and chieftaincy. The maternity ward of a district hospital was seeing its performance reduced due to problems linked to the person in charge. In a context where sanctions are generally difficult to enforce, removing this person was impossible because she was related to the canton chief, and therefore untouchable. To get around the problem, the hospital director decided to appoint her as the hospital's chief nurse. This vaguely defined honorary position, which was presented as a promotion, and therefore unable to be refused by the midwife as well as the chief of the canton, allowed for her removal and led to the reassertion of control over the maternity ward. The message sent is obviously problematic: an incompetent person is not punished but promoted. However, this solution has led to better quality care for parturient women in the health district.

Meliorative innovations, on the other hand, are new solutions that bring about change and contribute overall to the improvement of the service delivered by addressing the root cause of a dysfunction or resolving constraints faced by the healthcare system without negative consequences for patients.

A typical example of a meliorative innovation

Referral and counter-referral systems are usually organized around the transmission of paper forms, often unavailable and replaced by loose sheets torn from school notebooks and carried by ambulance drivers at the time of patient evacuation. These forms must be retrieved and completed according to the subsequent care to be provided to the patient, then stored in dedicated lockers to be returned to frontline facilities. These counter-referral forms are not systematically completed by healthcare providers in hospital facilities and are often forgotten or lost by ambulance drivers, jeopardizing the continuity of care and staff training in peripheral healthcare facilities by healthcare providers at the referral level.

To address these problems, a mother-child health center (MCHC), i.e., a specialized regional hospital facility, has set up a WhatsApp group for referral/counter-referral for pregnant women. The gynecologists at the MCHC provide feedback on cases transferred to group members, which initially included maternity wards in the city where the MCHC is located before the group was expanded to all district hospitals in the region. The counter-referrals deployed in this system are anonymous (patient and issuing facility), integrate photographed paper referral forms, and, most importantly, the analyses of the gynecologists who have treated the patient. They present their analysis, the deficiencies observed, the improvements to be implemented, and reminders of what to do next. The quasi-instantaneous nature of these feedbacks (which are mostly provided within the day following the patient's admission) operationalizes counter-referral by removing the material constraints of transmission (paper, vehicle transportation) and ensures the dissemination of recommendations to all practitioners in the region who may encounter such situations. Finally, it fosters positive emulation among frontline facilities and reaffirms the function of MCHCs as hubs for continuous training and guidance.

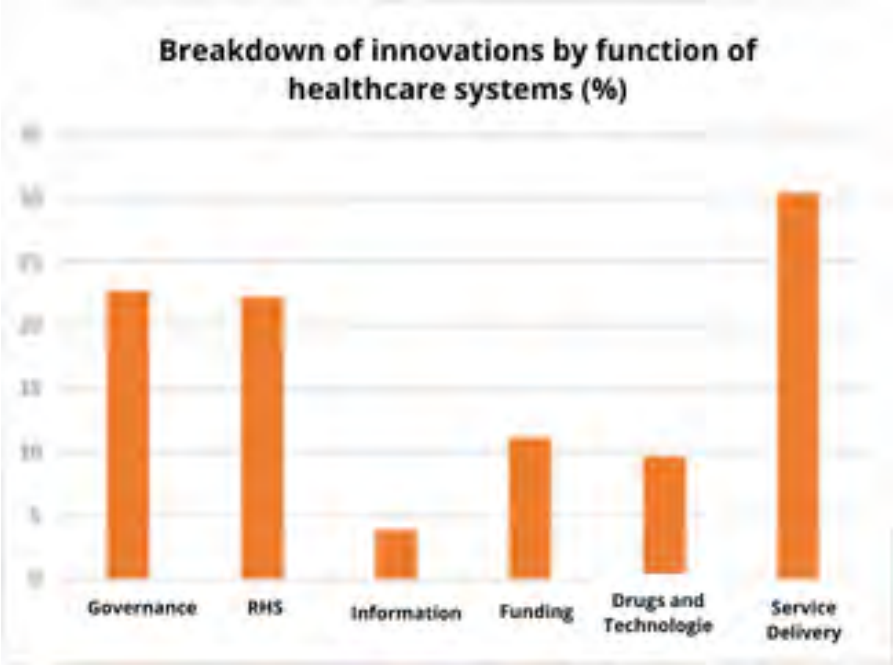
Palliative and meliorative innovations are ideal types; there are ultimately few pure forms of each. Developing a meliorative innovation often involves challenging an established organization (the principle of innovation), taking risks (for agents, the organization, or patients), and defining new balances, which must be negotiated among stakeholders in healthcare delivery to maximize outcomes and reduce risks.

Nevertheless, considering the difficulty of classifying innovations and the need to consider the negative effects they may induce, the following observation can be made: palliative innovations are more commonly found in frontline facilities, while meliorative innovations are more concentrated in referral facilities and at the management level. This finding is partly explained by the greater financial latitude in terms of human and organizational resources of hospitals and management teams. This observation suggests the need to find systemic solutions to unleash the potential for improving innovation that exists but is not mobilized in peripheral structures, in particular by making means and room for maneuver effective at this level.

From this observation arises a second one: innovations, especially palliative ones, focus on "soft" functions or pillars, largely intangible, of the healthcare system.

Innovations that provide solutions

Documented "bottom-up" innovations primarily provide responses to governance issues (22%), health workforce challenges (22%), and service delivery (30%). Innovations identified that address challenges in improving health information, financing, and the availability of drugs and technologies are rarer.



Nevertheless, it is appropriate to go beyond this quantitative interpretation. The innovations deployed to address the weaknesses of healthcare information systems, or the lack of availability of pharmaceutical products, while few in number and isolated, nonetheless constitute key or disruptive innovations.

Three examples of isolated innovations with significant effects on health information, product availability, biology and biomedical imaging services in peripheral facilities:

Contribution of additional cent systems to improve last-mile supply. In addition to addressing logistical problems in medical evacuation (fuel, draining, regular maintenance and wear and tear of ambulances), the additional cent leads to regular connections between district hospitals and IHC.

These opportunities are seized by district management teams and health facilities to transport drug orders to the last mile, promoting regular supply, greater stock turnover, and reduction of shortages in peripheral areas, while reducing transportation costs, traditionally borne by IHC.

Local systems to improve completion of basic health information records. In frontline facilities as well as in many hospital services, the completeness and timeliness of activity reports and health information reporting are lacking. This task is often entrusted to the IHC or service manager, but the completion of forms is neglected by other team members, resulting in a "make-do" situation at the end of the month. Some reformers have developed a strategy to empower staff in data production through cross-dependency logic. In this approach, the manager of a department appoints someone responsible for completing a register or related reporting forms. This delegation of tasks leads to staff empowerment, better understanding of various forms, and engages them in reciprocal dependency logic. This strategy of mobilizing healthcare workers in completing daily documents is complemented by involvement of frontline staff in compiling statistical data for monthly reports. This enhances the completeness and timeliness of data reporting, even in the absence of the manager, and enables the development of a critical view of the department's operations.

Strategy to improve maintenance of biomedical and imaging equipment. The laboratory and radiology are key services in hospital care provision. They are also services that generate essential financial resources for the daily functioning of hospitals. Unfortunately, frequent breakdowns limit care provision, the revenue of the structure, and divert some patients to private facilities or require costly trips for their tests. A solution has been implemented by reformers. They have improved maintenance contracts with private service providers responsible for maintaining and repairing biological analysis and radiography devices. They have introduced specific contractual conditions that include training technicians in these services in the preventive and corrective maintenance of their equipment. This strategy, where deployed, has led to a drastic reduction in breakdown rates and has enabled to achieve significant financial gains in laboratory and radiology services. This continuity of service has attracted patients from the private sector. The resources mobilized enabled the purchase of reagents and new equipment.

The analyzed innovations primarily aim to improve the quality and safety of care (36%) and the responsiveness of services (26%). They contribute secondarily to improving healthcare coverage, allowing for the systematization of certain innovations, and the sustainability of services.

The process of identifying and reviewing innovations – carried out with limited resources – has shown that a significant number of reformative practices exist at the core of the healthcare system. These innovations provide partial but essential responses to neglected problems within healthcare systems. They make a decisive local contribution to improving the quality of care. Their documentation and processing in the form of a database have allowed for the beginning of their characterization through typologies and convergence analyses. An analysis of their trajectory emphasizes that these innovations are rarely recognized by peers and hierarchy. This recognition represents a key issue, which calls for attention to be paid to the innovators and their innovations.

"The bottom up" reforms: a human, all too human system

The impossible definition of a typical reformer profile

The local innovations identified were developed and implemented, often iteratively, by some sixty reformers, mainly in frontline structures, but also in second-reference facilities. Analysis of the personal and professional trajectories of these reformers has been initiated and still needs to be supplemented by life stories. Available information illustrates the great diversity of their profiles: they are indeed very different in their roles (ward girls, members of Management Committees

(COGES), nurses, general practitioners, specialists, administrators...) as well as in their trajectories (basic training completed or not by further studies, sometimes abroad). It is impossible to define a typical profile.

It should be noted here that we have mainly focused on healthcare personnel, leaving aside some innovations and reformers identified in other fields: community health workers, COGES, and municipalities.

Nevertheless, it is important to emphasize that most reformers within the healthcare system have been influenced during their professional career path by other reformers or have been prompted by particular circumstances to break away from the routine functioning of the healthcare system. This finding reinforces the idea of spontaneous networking among reformers and incremental dynamics of innovations.

Lack of recognition and isolation

Nevertheless, while the network and inter-knowledge logics are essential for the maturation of reformers, they are often circumstantial, present and crucial at one point in their personal trajectory but rarely present in the long term. Thus, on a day-to-day basis, reformers are almost all confronted with identical problems, and their practice is essentially solitary, characterized by a lack of support and recognition by their hierarchy. They all highlight the precariousness of their status and the fragility, therefore, of the innovations they deploy.

Connecting reformers

These two constraints have led, on the one hand, to seek to integrate reformers into networks of inter-knowledge such as 'communities of practice,' and, on the other hand, to sensitize the hierarchy, from the district management team to the ministry, to the importance of local innovations. The challenges behind these issues are multiple. This includes, in particular, contributing to: 1) bring reformers out of their isolation; 2) gain recognition for their work from their peers and hierarchy; 3) establishing a community of practice for reformers; 4) promoting the circulation of innovations; 5) generating new ideas, testing them in the field, and disseminating them; and 6) gaining recognition for these dynamics by helping them reach critical mass.

To achieve this, various approaches have been deployed in collaboration with reformers. Building on the identification of reformers and their innovations, the documentation of innovations and their integration into a database has been organized:

- A LASDEL **professional school** for healthcare staff not only helped to identify certain reformers but also served as a place for meetings and exchanges. The three sessions generated a climate of dialogue, trust, and work between researchers and reformers, and enabled them to take into account the constraints and actual practices in the health facilities, as well as familiarizing them with the knowledge produced by LASDEL. Participants were introduced to qualitative research. They were able to share the innovations they deploy.

- **The establishment of WhatsApp** groups allowed for direct exchanges within the community of reformers who shared their ideas in the form of visuals (videos, photographs...), communicated about their innovations, discussed certain problematic innovations, and updated operational research activities...

- **Study trips** were organized to allow participants to discover each other's innovations and understand how constraints were overcome, engage in direct discussion with stakeholders, and assess the potential interest and adaptation modalities of the innovations observed in their original facilities.

This networking not only identified new reformers, but also enabled local solutions to travel between sites and reformers. In the process, innovations were confronted with new contexts, embedded in new local social and technical dynamics, and had to adapt and evolve.

Two examples of innovations adapted to new facilities following a study trip:

The pediatric Early Warning System (PEWS) is a patient monitoring tool using a scoring system based on vital signs. The calculation and monitoring of the score help determine when to adjust treatment prescriptions and seek a doctor's opinion. Deployed by Médecins Sans Frontières (MSF) for pediatric programs, this tool impressed reformers from the Tahoua Regional Hospital during a study trip. They implemented it in their pediatric department as well as in their women's health department. The initial results recorded are very promising. In a context of a shortage of doctors, this system has enabled their mobilization for the most critical cases and better management of their consultation by nurses.

Evolution and extension of the WhatsApp group system for referral and counter-referral. Developed by reformers in the Maradi region, the digital referral/counter-referral system via a WhatsApp group was adopted by reformers from the hospitals in Tahoua who established a joint system between the two referral structures, for the management of labor dystocia and pediatric emergency cases."

A community of practice has thus been created, helping reformers to break out of their isolation, gain recognition from their superiors for their contribution to improving the way the healthcare system works, and encourage the spread of innovations 'from the bottom up' through pragmatic adaptation to new contexts.

Generating innovative proposals through collective intelligence

Beyond being an operational necessity, networking reformers represents an interesting opportunity to harness the collective intelligence of these players and their knowledge of the field to explore new avenues for work and reforms, particularly for issues not covered by documented innovations, which nevertheless constitute critical points for improving healthcare delivery or unleashing the system's energies. It is this potential that we sought to explore through an 'expert contextual workshop'.

A methodological point (2): Critical issues of the healthcare system submitted to grassroots reformers - the contextual expert workshop

There are numerous critical issues (bottlenecks and recurring problems) to which the Nigerien healthcare system and its partners have never found solutions. We decided to submit some of these to grassroots reformers, as "contextual experts".

A workshop bringing together around twenty reformers was organized to discuss three critical issues: the failure to fill out partograms during delivery, the unfeasibility of recentered prenatal consultations (R-PNC), and the ineffectiveness of supervision.

A diagnosis of the causes of these problems was conducted collegially by the reformers before they proposed modifications or adjustments to these activities, in order to make them compatible with healthcare facilities in Niger.

The contextual expert workshop confirmed the relevance of bringing reformers together around complex subjects and relying on their individual experiences and collective intelligence to generate pragmatic solutions, often very different from the top-down reforms proposed by international experts and Ministry of Health officials.

While the approach appears promising, an in-depth discussion, dissemination, and support for the solutions identified in these workshops is required to ensure their effective implementation by technical and financial partners, ministry officials, and local authorities.

Analysis of local systems: Typology of forms and models of innovation

Documenting bottom-up reforms, supporting reformers, and organizing this data by intersecting qualitative and quantitative inputs enable for outlining a typology of the underlying dynamics of local healthcare system reforms.

While the database can be used to calculate averages, standard deviations, and degrees of innovation dispersion by structure or reformer, this exercise remains largely artificial as it tends to mask the diversity of structures, situations, and dynamics. For the time being, it seems more relevant to focus on these structures and the typologies that can be drawn from them, contributing to help explain the "bottom-up" reform dynamics and processes at work in the healthcare systems we have studied.

Are there isolated innovations?

A first observation is that there are isolated innovations. Apart from their isolation, these are quite similar to other documented reforms. These isolated innovations represent only a small proportion of the innovations we have studied. We are tempted, on an empirical basis, to consider that one characteristic of a bottom-up reformer is his/her willingness and ability to engage in several innovations that resonate with each other.

This observation is based on the fact that most reformers deploy multiple innovations within a structure, which are often interrelated and complementary, without necessarily depending on each other. It is the articulation and process of articulation of these reforms that characterize the dynamics of bottom-up innovation or reform.

Interrelated and clustered innovations

Most reformers deploy several innovations, often combining palliative and meliorative innovations. Individually relevant, each solving all or part of a problem, the effects of these multiple, interrelated, or clustered innovations potentiate each other without necessarily forming a system. This clustering contributes to a significant and effective improvement in the quality of care delivered within a department or facility.

These interrelated innovations often rely on a leader, potentially supported by another manager, who involves all or part of their teams in the reform process. However, they rarely form a system and tend to collapse if the reformer leaves.

Case of a reforming pediatric service

In a pediatric department, the doctor and the hospital administrator, along with their team, have implemented over fifteen relevant innovations, primarily organized around technical issues: staff organization; establishment of WhatsApp groups to ensure collective knowledge recourse in case of problems during a shift; compensation for staff "voluntary" (but essential to the functioning of facilities and departments, including interns, volunteers) through the establishment of a fund fueled by a portion of the per diems received by statutory staff for trainings, missions, or other activities; establishment of a daycare to prevent nurses' children from being present in the hospital wards... Put in a network, these innovations offer remarkable performance considering the limited resources available in this facility.

A case of an urban Integrated Health Center (IHC)

A similar approach, on a smaller scale, is also at work in an IHC where reductions in informal payments demanded from patients have been developed; improvement of Prenatal Consultation (PNC) through a new organization of awareness phases in groups and individual counseling sessions;

staff contribution to invest in the purchase of laboratory reagents so that the lab technician can offer additional tests such as Tuberculosis and HIV, which are supported by development partners, with the aim of making the expected package of analyses and tests in PNC effective in a healthcare facility.

"Networks of innovations" organized around a senior reformer or a reforming structure

A second model is organized around reformers in charge of a structure or department who, due to their roles, can impose innovative solutions on the staff. Embedded in the long term and often developing inclusive management styles, these reformers are "elders" who serve as mentors to younger employees whom they have trained at the beginning or during their careers, and who reproduce some of these reforms in the facilities where they are assigned. In doing so, the "senior" reformers constitute the hub of a network where innovations are disseminated and adapted.

One innovation widely disseminated by employees who have worked in a maternity ward led by a senior reformer is the systematic provision of an emergency kit to meet the immediate needs of a parturient, with the requirement for the family to replenish the supplies if they have been used.

"Reactive" innovation dynamics

This third model refers to innovation systems that involve different healthcare facilities or services. The starting point is often an innovation imposed by a reference facility or by the hierarchy, which leads to adaptive responses from peripheral facilities that can take the form of new innovations.

An example of reactive innovation

This is the case of the WhatsApp group deployed at the Mother and Child Health Center in Maradi (see above). The managers of this facility mainly communicated about the weaknesses of practices in peripheral facilities. This innovation was then perceived as a critique and a method of monitoring midwives in charge of deliveries in peripheral maternity wards. Those who lived in urban areas and were organized into foyendi (a women's sociability group, here on a professional basis) decided to organize a self-training system. The most experienced midwives proposed topics to the younger ones based on the training needs they identified. The young midwives and nurses from maternity wards prepared presentations which they delivered to the seniors during meetings. The seniors provided feedback, and the trainings were amended and perfected. The lessons were then photocopied and distributed to all maternity wards in the city, constituting a mode of local self-training, independent of per diems and external actors.

Local systems oriented towards innovation

Finally, although less common, we have identified facilities whose management is oriented towards innovation, or even in which innovation is a method of management. Whether it be a hospital or hospital department, these facilities direct their internal organization towards the identification, testing, and validation of bottom-up local reforms to offer alternatives to the dominant discourse on resource scarcity. This approach is organized around a team project that proposes local solutions, which, once validated, are shared and replicated in other departments. These approaches take place within a context of continuous service improvement but also emulation among teams, with innovation contests, rankings, and annual awards based on performance.

Case of a regional hospital Center (RHC) with an innovation-oriented management style

Some of the innovations presented earlier originate from a regional hospital which, unlike other visited hospital facilities, not only deploys innovations to solve daily problems but has made reform and innovation a management style. This strategy is a legacy of a quality assurance project deployed

by the American cooperation in the early 2000s in the region. The director of the RHC has adopted the "quality assurance collectives" approach and applies it systematically in his day-to-day work to improve the organization of his teams and care in his facility.

These collectives have made it possible to roll out a large number of innovations. Research has documented about twenty of them, for example: improving laboratory and radiology operations through maintenance contracts that include clauses for training user personnel in preventive and curative maintenance; a new method for monitoring patients in mental health departments that allows for improved support and served as a basis for patient record reform at the national level; adaptation of CMAM Surge tools (Community Management of Acute Malnutrition Surge - see below) and their extension to malaria; the implementation of a "commitment" system with the RHC military supervisor that allows for pre-financing the costs of care for emergency room patients and prevents families from having to sell their belongings at low prices...

These innovations feed into each other, forming a system that tests and validates innovations before proposing them to other departments. These innovations, aimed at improving the quality of care and service performance, are subjected to external evaluation and an annual RHC staff day where prices are awarded to the best-performing RHC staff and departments.

The unexpected and central contribution of local reformers to the success of "global health" models"

Documenting the innovations implemented by reformers has led to an unexpected finding: the role, sometimes central, they play in the adaptation, dissemination, and success of "traveling models" from global health.

Two cases mentioned above attest to the adoption and adaptation by reformers of protocols initiated externally by medical NGOs. These cases include, on one hand, the MSF pediatric early warning system, spontaneously adopted in an adult ward, and, on the other hand, Surge Nutrition, a system for early diagnosis of activity peaks in nutrition and pediatric services. This has been successfully implemented in hospitals led by a reformer or supervised by a district management team, and has failed in the absence of local reformers, being then used mechanically and very partially (Caremel & Issoufou, 2021).

This role of reformers in the adoption of an imported model involves a strategy of creative adaptation. This observation, based on field observations, highlights the link between, on one hand, the central role of reformers in developing endogenous solutions adapted to local contexts, and, on the other hand, the positive role they can play in the successful adaptation of certain global health models. This reinforces the idea that the "bottom-up" approach to reform, through local innovations deployed by frontline actors, is not only an alternative or complementary solution to global health approaches, but also lies at the very heart of them.

Conclusion: Paths and conditions for the top-down institutionalization of bottom-up reforms

The question then arises of whether and how to institutionalize bottom-up reforms from the top down. At first glance, this ambition appears contradictory, given that the dynamics documented are local and rooted in contextual micro-realities, and seem to be opposed to traditional top-down institutionalization logics.

The path identified to overcome this apparent contradiction in Niger has been, with the support of reformers appointed to leadership positions at the ministry level, to integrate this approach into the 2023-2027 Health and Social Development Plan (HSDP) and make it a structuring reform. This plan mentions "reviving collaborative quality assurance processes and promoting bottom-up reforms and good practices" as one of the key reforms for the upcoming period.

To achieve this, the approach initiated today integrates bottom-up innovations into the validation processes of "good practices" already supported by the WHO and the World Bank. This allows for the continued identification and promotion of local reforms and their presentation during the Ministry of Health's annual performance reviews. As part of the preparatory missions to support these exercises at the regional level, identified reformers are invited to present the reforms they are implementing, and regional health departments are encouraged to document these approaches and their results further. The objective is to have factual evidence confirming the value of these solutions presented by their implementers to the highest ministry officials and technical and financial partners within the framework of semi-annual national health technical committees. Bottom-up reforms considered relevant are transcribed into key recommendations and undergo scaling up and follow-up supported by the ministry and its partners.

As a side effect, the approach leads to recognition of reformers by central authorities as well as supervisory staff and opens up new perspectives for articulating healthcare system reforms, as well as partnerships between operational and research actors.

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