

## The PAODES project

From 2012 to 2017, the Belgian governmental cooperation and the Senegalese authorities implemented a € 17 million project to support offer and demand of health services aimed at organising health insurance for the rural poor (PAODES<sup>1</sup>).

The purpose of the project was to develop a sustainable approach to bring health insurance to rural communities in Senegal.

PAODES accompanied the Health Ministry in its endeavours to reform the financing structures of health care, by installing a health insurance system and by rationalising basic health care services at local and district level.

Ultimately, the project's ambition was to offer the Health Ministry a health insurance model for the rural poor that had been tested long enough on a large enough scale so as to draw lessons from it with a view to scaling the model up. PAODES intervened in four health districts: Kounghoul (Department of Kounghoul), Foundiougne, Passy and Sokone (Department of Foundiougne), totalling 480,000 people.

## Results

- **Health insurance coverage rate after two years: 64% (more than 300,000 people).**
- **Health insurance is financially viable at 30% coverage.**
- **Utilisation of primary care up from 0.6 to 1.2 consultations per person per year (insured people).**

1 | Projet d'appui à l'offre et à la demande en santé au Sénégal

## Introducing large-scale health insurance for the rural poor in Senegal

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### Key points

- Large-scale health insurance for the informal sector can be efficient if it is operated by professional teams, if it is significantly subsidised by government so as to allow poor people to adhere, and if it is embedded in a nation-wide institution with a public purpose.
- The credibility of a health system depends on the quality of care and the packages of care offered. Health insurance is not just an additional initiative to existing care systems; it should be an opportunity to look into the quality of care and the actual package offered to the population. It should also be an opportunity to rationalise existing services where needed.
- Governance determines all systems. Large-scale health insurance cannot exist and function without the government addressing at least technical and procedural matters with regard to governance (e.g. a uniform and government-regulated fee-paying system for the country, a digitalised accounting system for all health facilities and districts).
- An inclusive flat fee-paying system will protect health insurance schemes against ever increasing invoices as a result of excessive medicalisation of health problems and commercialisation of health care. The introduction of a flat fee-paying system, in isolation, does not affect quality of care. Quality of care is multidimensional and complex, and the reaction of users is never immediate.
- Scaling up community-based health insurance by merely creating community unions at a higher level is not a real option, because such a scale requires professional teams and a complex (financial) management system.



## Introduction

The Belgian cooperation had more than ten years' experience in the Senegalese health sector, including health service financing, health insurance and health service organisation.

PAODES wanted to test a new health insurance approach, half-way between an experiment and the official Senegalese health policy. Despite some opposition of individuals who wanted to implement national policy without interpretation, the Senegalese authorities were prepared to allow a great deal of intellectual freedom to the project.

Social change being a very complex process, PAODES considered the health system at large, and not only the insurance aspects. People will only take a health insurance if the health services provided are of good quality. The project therefore intervened simultaneously on the offer and the demand side of the local health system (Figure 1).

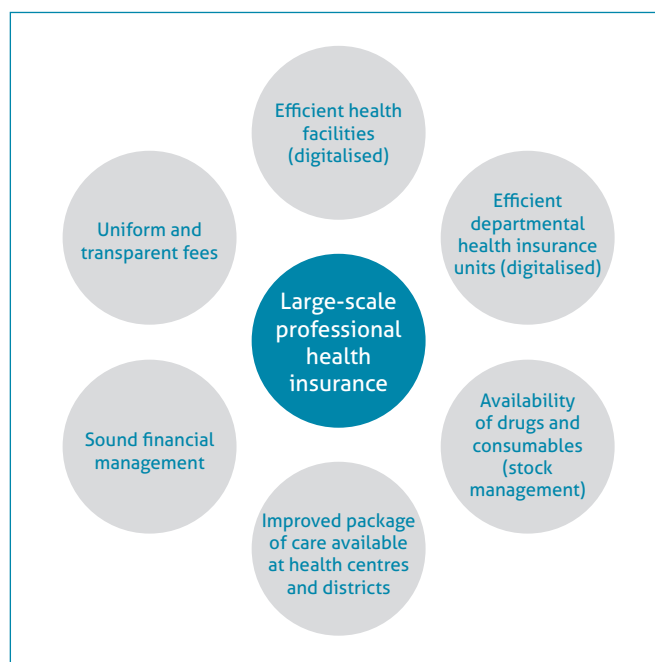


Figure 1: PAODES simultaneously tackled different aspects in the health care system

## Modelling

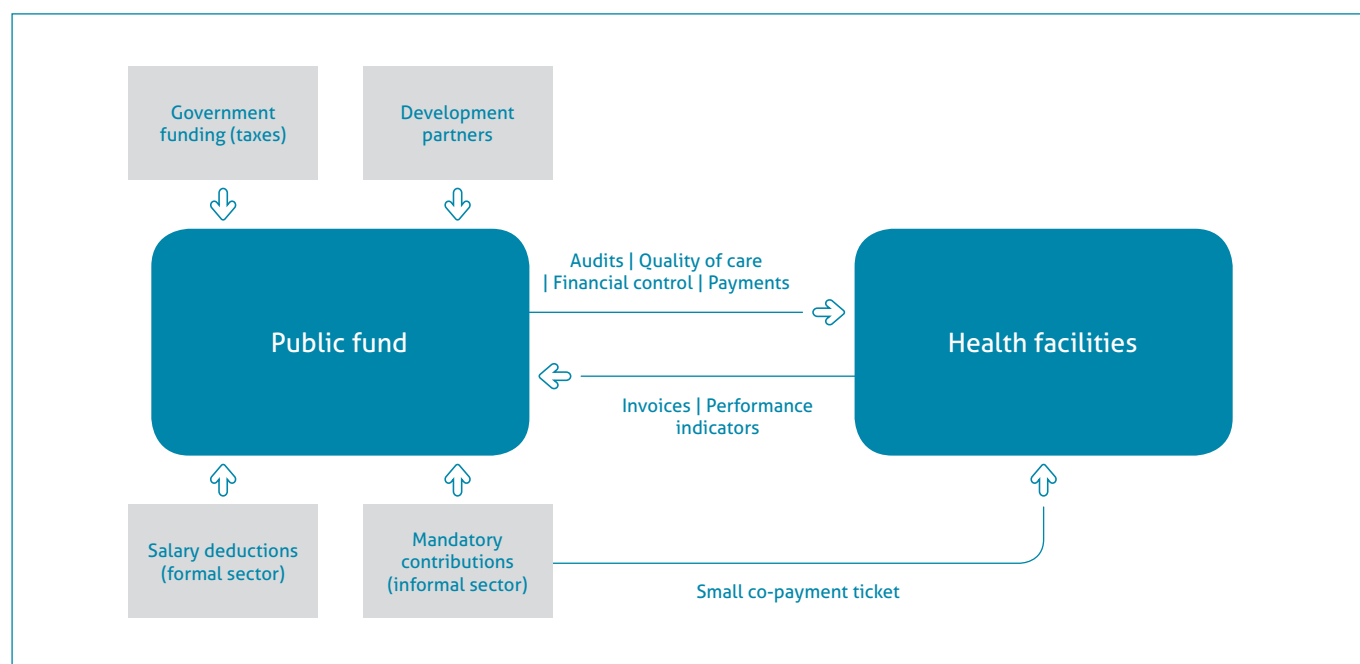


Figure 2: General health system model

Literature confirms that for health insurance to be sustainable, effective and equitable, it should be a public (oriented) organisation, subsidised by government, large-scale (country-wide) and professionalised (Figure 2). Adherence to health insurance should be mandatory in order to avoid adverse selection. This general scheme does not address how to deal with the poorest inhabitants.

Figure 3 shows how the public fund should be organised in order to create a large-scale and professional, nationwide uniform health insurance. In this model, every level of the health service articulates with an equivalent level of the health insurance. In health insurance, the same logic should apply

as the one being used for the health service, where tasks are delegated to the optimal level and a balance is sought between technicity (advantage of scale, division of labour) and proximity (as close to the population as possible). The departmental units were considered as the most decentralised level, where professional staff would be based to run the insurance scheme. Departments in Senegal cover one up to three health districts, but the department level was preferred by Senegalese authorities as it matches the political and administrative division of the country.

PAODES eventually piloted an experience almost exclusively at departmental level (Figure 4).

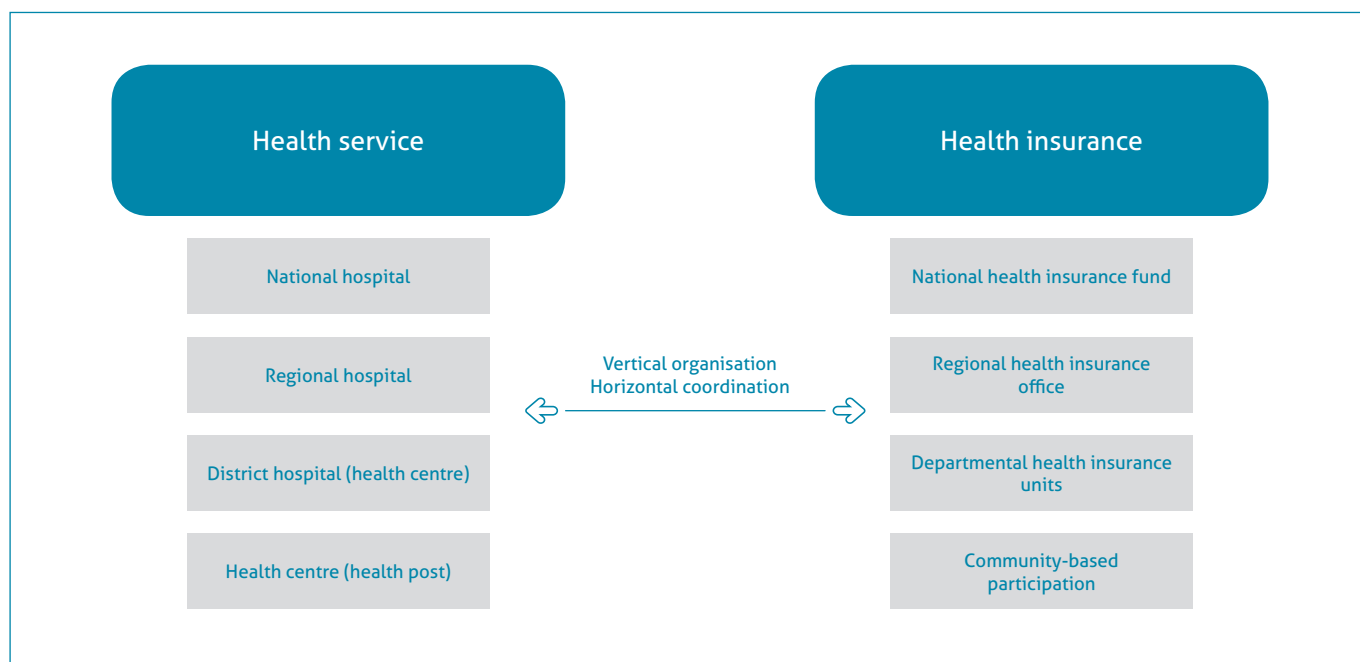


Figure 3: A tiered health insurance articulating with the tiered health service

The Departmental Health Insurance Units (DHIU) have four or five professional staff, of which the director has a university degree (sociologist, economist). Government subsidies were fixed at 50% of the adherence fees, which were set by government at 7,000 FCFA per adult per year. The DHIU had a private non-profit association, contrary to the theoretical model (Figure 2).

The pilot model was a compromise between the best theoretical option and the national policy, which inevitably takes into account political and societal constraints. For example, although mandatory adherence is preferred to avoid adverse selection, the model was based on voluntary

adherence in the first place. Senegalese authorities pointed out that it was politically not conceivable at that period in time to make adherence mandatory for the people. Another burden to make adherence mandatory was the fact that quality of care was far from optimal. Although the national authorities had opted for massive subsidies to make health care financially accessible for most of the people, it was not possible to experiment with a public health insurance. PAODES proposed a model that combined elements from a public entity and a private community-based health insurance scheme : large-scale, professionalised, uniform for the entire territory and subsidised with public money.

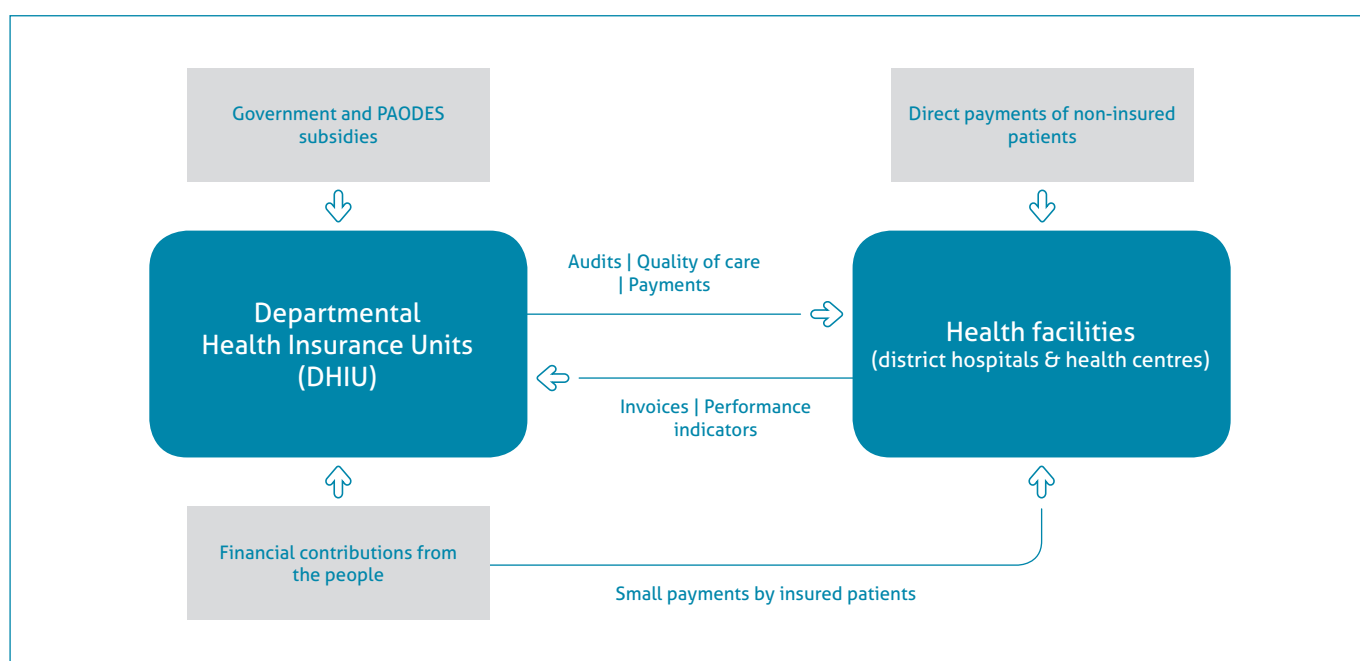


Figure 4: PAODES pilot model



### Health service organisation in Senegal

Public health service in Senegal is organised in a classical and tiered way. The most peripheral level includes a network of health posts (equivalent to WHO health centres in the health district concept), covered at health district level by 'health centres' (the equivalent of district hospitals – DH). All regions have a regional hospital with specialist care. In the capital city, a national referral hospital and university clinics are operating.

In urban environments, private initiatives flourish, but they are poorly coordinated. In semi-urban environments there are many private structures (of doubtful quality), often with semi-qualified personnel only.

Health facilities in Senegal (a low middle-income country) often have relatively better infrastructure and medical equipment as compared to other countries in the region, although resources too often benefit the bigger hospitals. Medical and para-medical staff is generally well-trained and the country has high-level specialists and health managers, but they are concentrated in the major towns. Decentralised facilities are rather underdeveloped.

The major weaknesses in the system that mattered for the success of a health insurance scheme for the country, were identified. PAODES partially addressed these weaknesses in the pilot areas in order to create the conditions for the health insurance to work.

#### Commercialisation of health care

Commercialisation of health care means that health workers and health facilities pay more attention to financial gain than to their public task of offering quality care to patients. The causes behind it are low salaries, poor financial viability of health facilities as a result of too little subsidies, and poor financial transparency accompanied by a significant degree of impunity.

As a consequence, health workers are not always motivated to rationalise services or to keep transparent records, be it on clinical or financial aspects.

This situation negatively affects the viability of any health insurance scheme, because in such an environment health insurance becomes just another source for financing, instead of an opportunity to deliver quality care. PAODES took several initiatives to tackle the problem.

#### Fragmented financing

Health care financing in Senegal is extremely fragmented. Health facilities' revenues come from many different sources: fees paid by patients, health insurance, government subsidies in cash and in kind (drugs), funding from donors (e.g. RBF schemes), free health care policies, etc. Each source has its own administrative and control procedures, making the system complex and heavy. PAODES helped to diagnose the problem and paved the way to rationalise the situation.

#### Absence of a uniform management system

Peripheral health facilities, health posts and health centres in Senegal have no official book-keeping system. Facilities and health committees keep paper records, if any at all. They are conceived locally, and so they are different from one facility to another. This informal approach has made it impossible for PAODES to conduct financial audits or to assess whether services are viable or not.

#### Drug shortages

Public health facilities in Senegal often lack basic pharmaceutical products and other consumables. Partly this is due to ineffective and inefficient national policies, which means that individual facilities cannot reverse the situation.

On the other hand, and more importantly, drug shortages in health facilities are also due to inadequate stock management, a lack of cash for stocks replenishment (cash is used to pay local salaries or for salary topping-ups, and poor financial record-keeping makes it impossible to plan replenishments), and because of conflicts of interest. Health facilities are surrounded by private pharmacies, that make financial deals with health workers.

Without the provision of drugs, out-of-pocket payments of patients remain an important source of revenue, and invoices from private pharmacies are impossible to trace. Private pharmacies have no reason to provide cheap generic drugs either.

This situation jeopardises the financial viability of the health insurance schemes. PAODES was able to mitigate the risk through a new fee-paying system (see elsewhere), complementary to health insurance financing.

#### Absence of a transparent and uniform fee-paying system

Health facilities in Senegal charge their patients per medical act and for individual items. They are quite free to sell drugs and charge consultations and other activities. Generally, the community agrees to the charged fees through decisions of the community health committees.

Such a non-uniform fee-paying system, based on payments per act or item, makes expenses unpredictable, promotes medicalisation and commercialisation of care and makes it almost impossible for health insurance schemes to cover an entire country in a uniform and transparent way.

In its pilot areas, PAODES introduced an 'inclusive' fee-paying system, based on flat fees for disease episodes, including drugs.

#### Restricted package of care at health centre (district hospital) level

The health centre in Senegal is the equivalent of the first referral level in the health district concept and could

therefore be compared to the district hospital. The notion of ‘district hospital’ is largely absent in the Senegalese health system. Health centres are rather medicalised health posts; they provide primary care with a medical doctor in place, but without a strong technical platform. Most health centres do not have an operating theatre, do not perform blood transfusions or C-sections, they do not have an emergency room and many do not have X-ray machines or even ultrasound equipment. They usually operate in more important agglomerations. Real hospital care is almost only provided in regional hospitals.

PAODES invested in strengthening the technical capacity of the health centres in the pilot areas in order to boost their credibility in the eyes of the population. Without such credibility, people will not easily adhere to the health insurance.

## Introducing an inclusive flat-fee payment system

The problem of health care commercialisation was highlighted earlier. PAODES negotiated with the health facilities on an alternative and uniform fee-paying system, based on flat rates for disease episodes. A major concern for the health facilities was not to lose income.

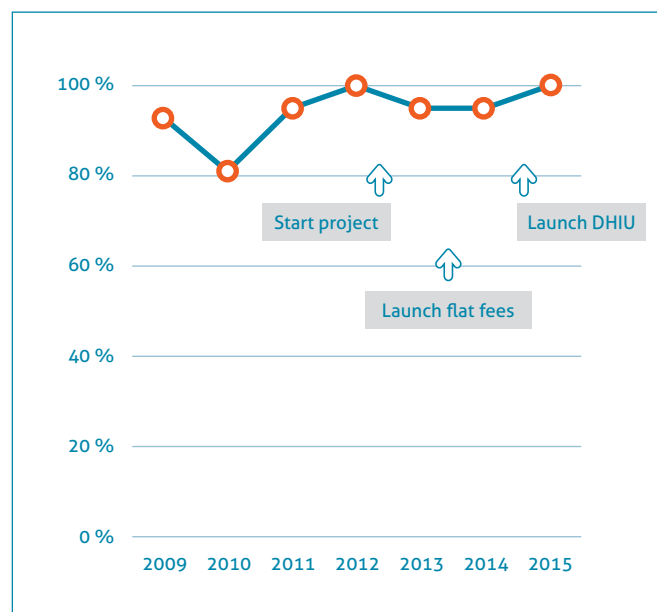
This initiative was considered not only as a measure to protect patients from financial hazards or as an attempt to create more transparency in the care system. It was also an important preliminary condition for health insurance to remain financially viable (instead of being exploited by the care facilities with ever increasing invoices), and easy to manage (predictable invoices and easy verification). A new fee-paying system should also stimulate respect for the referral system for more efficient use of existing facilities, and should allow for other services such as an evacuation system, to be covered by the health insurance.

The Ministry of Health in Senegal did not really question the existing fee-paying system in the country.

The possible impact of the new fee-paying system on the health facilities was assessed for different aspects.

### Impact on quality of care

PAODES assessed the technical quality of care for different diseases in order to check whether the new fee-paying system had any impact. For tuberculosis (Graph 1) and non-complicated malaria quality of care was not influenced, positively or negatively, by the introduction of the new payment system. *No negative influence on quality* was an important message, because the fee-paying system was not felt as problematic by most health authorities. Opponents to the change claimed that the quality of care would suffer.



Graph 1: Technical quality of care for tuberculosis

There were two exceptions. The quality of severe malaria treatment was positively influenced under the flat-fee system. Thanks to the flat fees, there was less delay between the arrival of the patients and the start of the treatment. Before, under the fee-per-act regime, families of patients often had to go to private pharmacies to buy the individual treatment products, they had to queue for every exam and had to pay every bill before any action on the patient was taken. But other factors, such as a strengthened malaria programme that made drugs more available in the same period, probably explain part of the improvement as well.

Family planning services too saw a sharp increase with the introduction of the flat fees. The increase as such was probably due to the new fee-paying system, but it can only partly be linked to better quality.

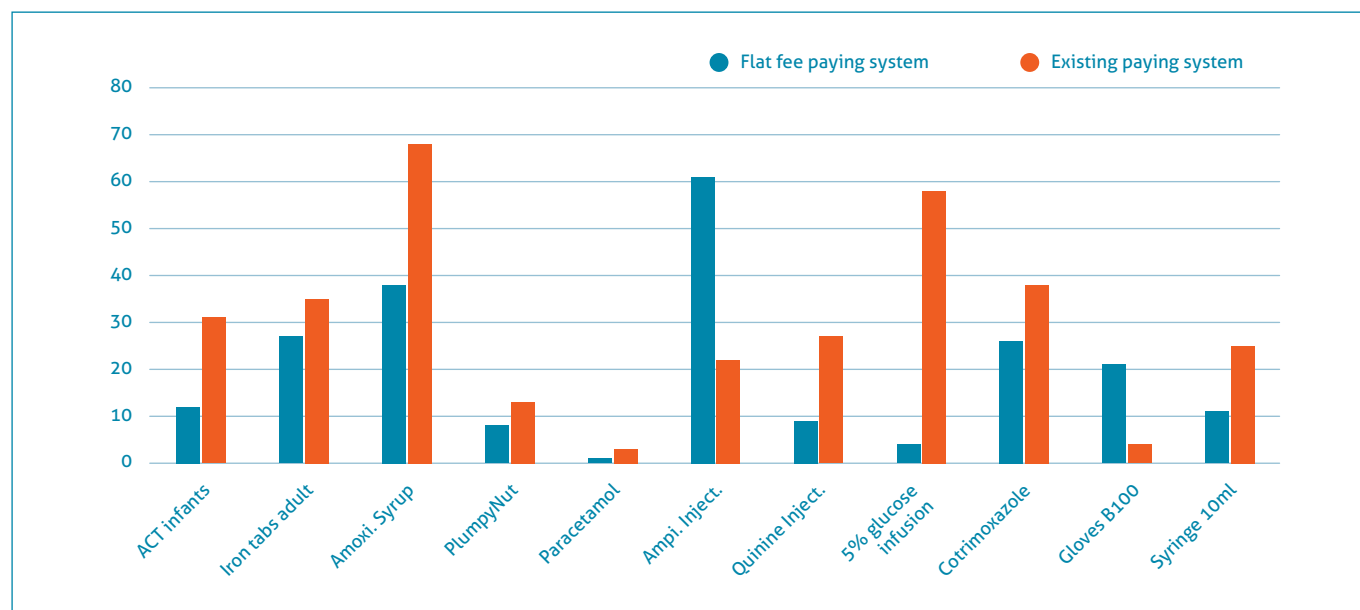
At the same time, the new fees were significantly lower for the clients. Moreover, they paid just once and could use the service for four consecutive quarters. This strongly motivated women to return every quarter for a new consultation.

### Conclusion

The introduction of a new fee-paying system (based on flat fees), in isolation, does not affect quality of care. This can be explained by the fact that quality of care is multidimensional and complex, and the reaction of users is never immediate.

It was important for PAODES to show to Senegalese health authorities that the new system did not impact negatively on the quality of care.





Graph 2: Number of days of stock-outs for tracer drugs in areas with flat fee policy and in areas without change in the fee-paying system

## Impact on drug availability

Drugs were more available in areas where the flat fees were introduced, as opposed to similar facilities where the old payment system was maintained (Graph 2). As drugs were included in the fees that patients paid, health staff and local health authorities were motivated to have the drugs readily available at the facility level. Despite the obvious improvement of the situation, drug stock-outs remained unacceptably high. Other factors were at the origin of this observation.

Before the new fee-paying system, most patients were sent to private pharmacies and had to pay expensive specialty drugs. Patients were extremely satisfied to be provided the necessary drugs immediately. From a more technical point of view, under the old regime, it was impossible to trace which and how many drugs patients actually bought. Under such circumstances the system could not possibly be responsible for the (technical) quality of care.

### Conclusion

If properly motivated and systemic obstacles removed, drug availability in health facilities in Senegal can be improved by merely changing the rules and procedures. In essence it is not a problem of staff capacity nor a problem of drug availability in the country, although the supply chain was not working optimally yet.

## Acceptability for the people

The Senegalese people were very satisfied with the new fee-paying system. They explicitly appreciated the transparency, the advantage of not having to run back and forth between the health facility and private pharmacies, and they perceived the

system as cheaper. PAODES could not confirm this with more precision or objectivity, because the multiple out-of-pocket payments in- and outside the health facility under the old regime could not be easily traced.

The population was very aware of the rule that all drugs should be included in the fee they paid. When drugs had run out of stock, they harshly protested.

## Acceptability for the health care workers

Health care workers too were very satisfied. They confirmed that they were less focused on financial matters now that payments were global and when they had noticed that the number of consultations did not decrease (on the contrary). They did remain concerned about their salary topping-ups, but most of them were reassured by the facts after one year of implementation.

However, the reflex of maximising profit by simply increasing the fees per disease episode or to re-introduce fee-for-service charges for particular medical acts (imagery for instance) persisted, partially inspired by personal motivation, partially also by sincere concern not to have sufficient revenue for the health facility.

Resistance against the new regime was higher among health workers than in the general population. This is not surprising knowing that health workers have direct personal financial interests to defend. Lots of debate and analysis was needed for the staff to accept, and this was only possible by subsidising<sup>2</sup> flat rates to that extent that no personal loss was to be expected. It shows that a fee paying system is not a matter of individual facilities or staff members, but rather a policy decision that needs to be managed continuously by national authorities.

2 | Subsidies were provided by the project, but after the health insurance units became financially autonomous, adapted fees were proposed and at the end, subsidies were only paid through the health insurance scheme, not via donors.

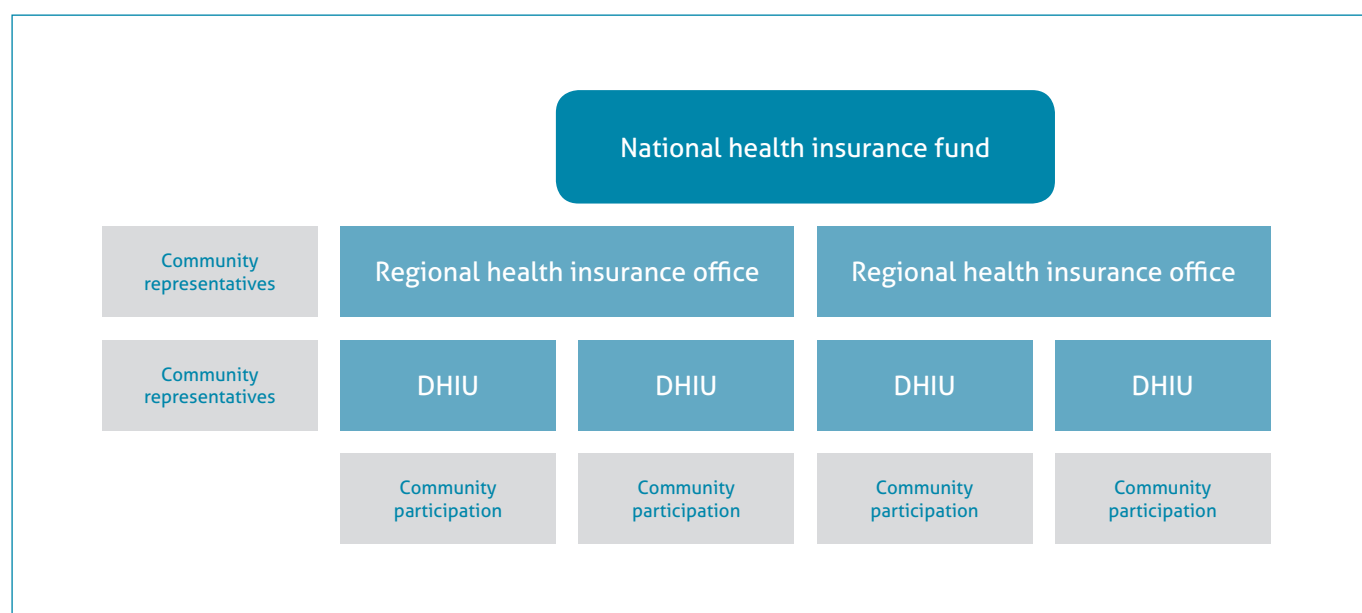


Figure 5: DHIU building blocks in a national health insurance strategy

### Preparing for a health insurance scheme

Changing the fee-paying system from fee-for-service to fees per disease episode or type of condition, including all expenses related to these conditions, should be regarded as an objective in itself, because it makes the system more transparent and efficient if properly managed. But the rationale of a transparent fee-paying system as a precondition for a functional health insurance scheme was equally important in this experience.

Under a fee-for-service regime, it is a well-known phenomenon that invoiced amounts increase as long as insurance pays for them. The health insurance then generally reacts by reducing reimbursements, making itself ever more irrelevant as a protector against catastrophic health expenditure. Without any reaction, the health insurance may go bankrupt. Flat-fee tariffs make the health facilities responsible for the efficient use of scarce resources. They cannot make patients pay more to cover for inefficiencies.

On the other hand, there is a risk that health facilities would provide too little care or prescribe too little drugs in order to maximise profits. Any financial system has to be properly managed and audited, and personal incentives should be disconnected from direct payments as much as possible.

### Introducing large-scale health insurance through departmental units

The core of the PAODES experience was to pilot the Departmental Health Insurance Units (DHIU) for the implementation of health insurance schemes that would meet most of the requirements according to current scientific knowledge. The purpose was to create viable, large-scale and professionalised operational health insurance units that could

autonomously manage the operational tasks, such as register new subscribers, manage subsidies, members' contributions and expenses and negotiate and verify contracts with health facilities. These units should be building blocks for a uniform nation-wide health insurance mechanism and institute (Figure 5).

A country needs a uniform health insurance scheme for the entire country, in which DHIU are the operational building blocks of the insurance system. The construction is 'tiered'. Considering the fact that departments can be very different (in terms of inhabitants), it would be possible that in the future more than one unit per department may be considered. Although the DHIU have considerable independence, they are part of a global organisation and they are controlled and supported by a regional level.

### Intervention areas

Table 1 shows the population and the population density in the health districts of the pilot areas. The districts of Kounghoul and Foundiougne were the first to join the DHIU at departmental level (with the same name). Passy and Sokone joined a year later. In total 478,842 inhabitants were covered by the initiative; a number considered sufficient for piloting.

Table 1: The pilot departments

	Population (2016)	Communes	Surface (km <sup>2</sup> )	Population density (inhabitants/km <sup>2</sup> )
<b>Dep. Kounghoul</b>				
HD Kounghoul	170,989	9	4,237	40
<b>Dep. Foundiougne</b>				
HD Foundiougne	55,852	6	949	59
HD Passy	90,055	5	900	100
HD Sokone	161,946	6	1,068	152
<b>Total</b>	<b>478,842</b>	<b>26</b>	<b>7,154</b>	<b>351</b>

Table 2 presents the health districts in the two pilot departments. In Senegal, 'health centres' are the equivalent of district hospitals in the health district concept, but they do not include operating theatres at that level. The Belgian cooperation lobbied for over a decade to decentralise certain surgical activities. It effectively paved the way by installing operating theatres in several health centres. Health centres have routinely one up to three medical doctors (generalists). Health posts are run by nurses, occasionally supplemented by midwives. Community health units are run by community volunteers and do not provide curative care.

Table 2: Health facilities concerned with the piloting

Health District (HD)	Health centres with operation theatre	Health posts	Community health units	Medical cabinet	Semi-private and private actors
Koungheul	1	19	46	1	3
Foundiougne	1	9	12	0	2
Passy	0	12	20	0	4
Sokone	1	17	47	1	6
<b>Total</b>	<b>3</b>	<b>57</b>	<b>125</b>	<b>2</b>	<b>15</b>

## Hypothetical mandate of the DHIU

The DHIU, as operational units of a national health insurance scheme, have to carry out the following tasks:

- Facilitate the adherence of the population – social mobilisation and information. Electronic registration.
- Receive fees and governmental subsidies. Financial management.
- Manage expenses and recurrent costs. Payment of health facilities' invoices.
- Contracting health facilities.
- Verify invoices. Quality control visits to the facilities (respect of clinical protocols).
- Apply financial penalties when indicated.
- Manage patients' complaints.
- Organise meetings of the statutory organs.

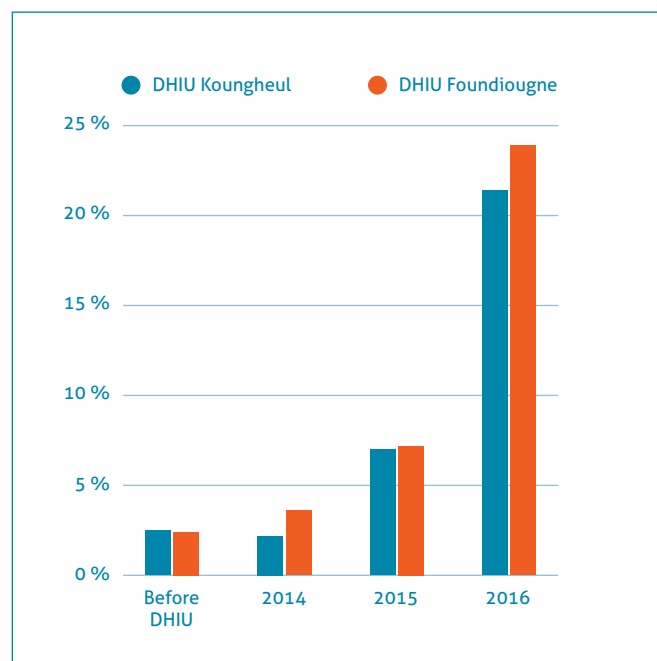
The DHIU also negotiate prices and fees, but this has to be seen as a temporary function. Such negotiations should be organised by the health insurance system, but at national level rather than at local level in view of the desired uniformity.

## After two years of implementation

The DHIU were monitored and – after two years – evaluated on different parameters. These parameters form a complex universe of interdependent determinants.

### Penetration rate

The penetration rate two years after the creation of the DHIU was 24% (Graph 3). The 2.5% mentioned before the creation was the penetration rate of the then existing community-based health insurance initiatives for a few villages only. In fact, the real level of protection in 2016 was much higher than 24%, because Senegal was also providing financial support to poor

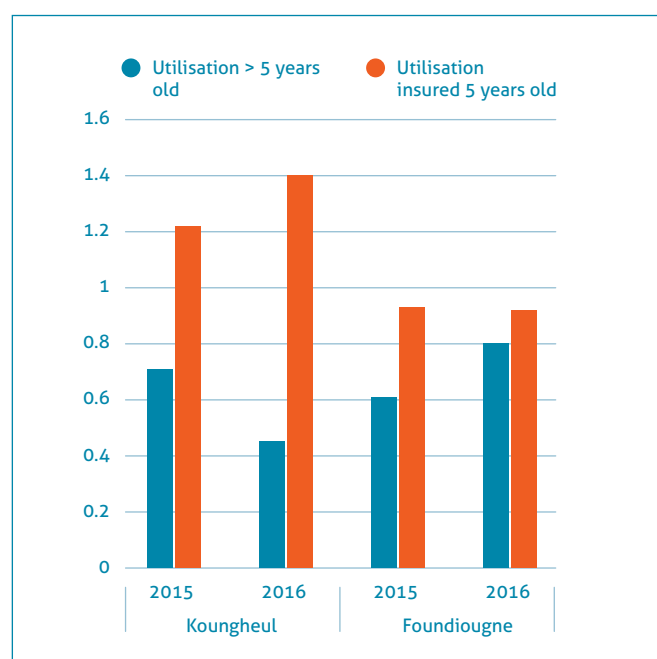


Graph 3: Evolution of the DHIU penetration rate

families, including adherence fees for the health insurance. Including this complementary activity, the penetration rate was over 64% for the total population. These subsidies were not taken into account for further analysis because they are considered as a parallel system that could stop after a new political decision.

### Service utilisation

The purpose of health insurance is to provide better financial access to care for the population. Therefore, a priori, the targeted population should make more use of health care services.



Graph 4: Use of health care services of insured and non-insured population in Koungheul and Foundiougne



In the population above five years old, health care use is significantly higher in the insured population as opposed to the non-insured (Graph 4). Children under five were excluded because they enjoy free health care, whether insured or not. The different evolution in the two departments is mainly due to the low geographical accessibility in Foundiougne.

### Financial viability

Assessing the financial viability of health insurance is not easy, because many parameters have to be taken into account. There is the time gap between the adherence and the possible expenses, there is the delay of government subsidies. Viability also depends on the evolution of health care use, on the reimbursement levels, on the weight of the recurrent costs (salaries, fuel...). Financial viability eventually depends on the penetration rate, because the recurrent costs are to a large extent independent from it. The higher the penetration rate, the lower the recurrent costs of the organisation compared to the payment of invoices to the health facilities. Finally, financial viability depends on the package of care for which reimbursements are made.

After two years of functioning and a penetration rate of around 25%, the DHIU were virtually viable: Foundiougne expenses amounted to 93% of its revenues, while Kounghoul spent 102% of its revenues. The difference in viability between the two DHIU was to a great extent due to the higher health care use in Kounghoul. Taking into account the governmental subsidies for poor families, the penetration rate went up to 64% with hardly an increase of the recurrent costs. The pilot did not take this into account, because the delays for the effective payment of the subsidies by the Senegalese authorities were too big.

With a stable penetration rate of 40 %, the initiative as it was put in place would be financially viable beyond any doubt.

### Degree of protection

The degree of protection is the percentage of the invoices that is covered by the health insurance scheme, compared to the total fees to be paid. The difference between the total fees and the reimbursements corresponds with the out-of-pocket payments users still have to make. The degree of protection is an important quality indicator for any health insurance because it represents its core business. If for instance health insurance is reimbursing only 5% of what the patient has to pay, there is hardly any social protection. The number of people 'protected' is a meaningless indicator without mentioning at the same time the degree of protection.

In the pilot areas, at the health post level (most peripheral structure), between 75 and 100% of the charged fees (including all drugs and consumables) were covered by the health insurance. Specifically ambulance services were free for the patient. At the health centre level (district hospital), ambulant and in-patient care were covered between 92 and 95% of the invoices, including all drugs, consumables and diagnostic tests (lab exams, X-rays and ultrasound).

Regional hospital care was hardly covered in the given period, because - amongst other reasons - no transparent fee system could be negotiated. Under such conditions, the DHIU estimated the risk of financial burden too high and preferred not to contract these hospitals yet.

### Claims ratio

The claims ratio compares how much of the total income (population contributions and government subsidies) is spent for the effective protection of care users and how much of the budget goes into recurrent costs of the organisation.

Table 3 shows the evolution of the claims ratio. The claims ratio is not very high and the evolution is in opposite direction for the two units. This demonstrates that minor changes in adherence and contracting, but also in payment or subsidy delays, have an influence on the young organisations. As highlighted earlier, if the penetration rate increases, all other factors being stable, recurrent costs decrease relatively and the claims ratio therefore increases.

Table 3: Claims ratio for the pilot DHIU

	2015	2016
DHIU Foundiougne	34 %	58 %
DHIU Kounghoul	63 %	46 %

The claims ratio is also determined by the protection level (a higher protection level should make the claims ratio go up) and by health care use.

### Portability of the health insurance

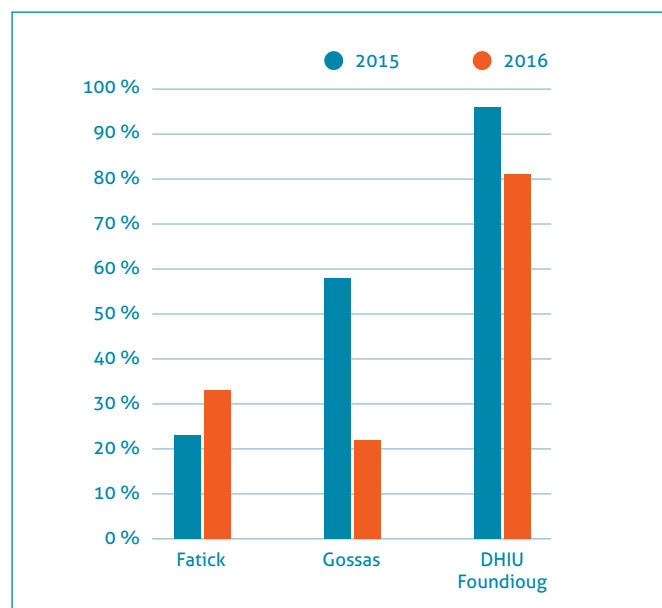
Typical small-scaled community-based health insurance schemes are defined locally and in general do not contract more than one or two first-line health posts. Adherents cannot use other health facilities beside those contracted. Hospital care is often excluded from the package.

In case of the DHIU, fees were fixed and uniform for the different pilot departments. Therefore it was easy to allow people to use any of the facilities in the same area. And if in the future the initiative would be extended with a unique fee-paying system for the entire country, the portability would be nation-wide. The population appreciated this aspect very much.

### Retention of adherents

The retention of adherents, defined as the likelihood that adherents continue to pay their contribution after a first experience, was seen as an important indicator to estimate the credibility of the initiative.

Graph 5 shows the high retention rate of Foundiougne DHIU, compared to the smaller community-based health insurance schemes of Fatick and Gossas. In focus group discussions, the people expressed their enthusiasm for the DHIU. They indeed appreciated the high reimbursement rate, the portability and

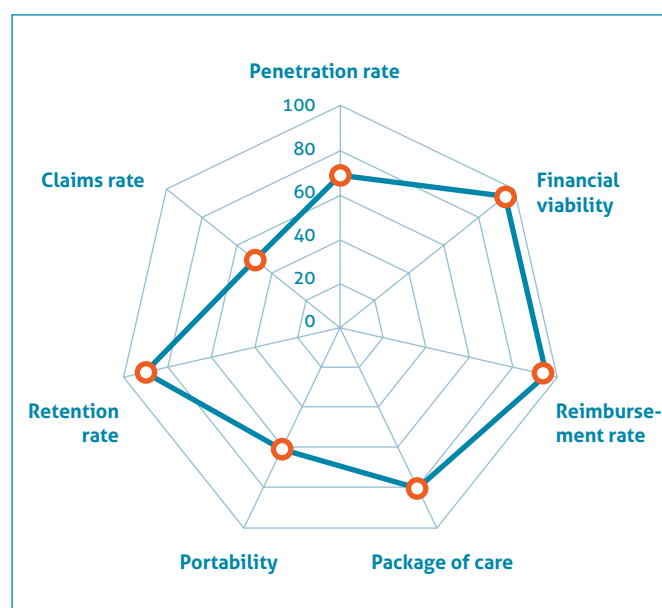


Graph 5: Retention of adherents in the DHU of Foundiougne compared to two community-based health insurance organisations in the same area

the fact that the fee-paying system was transparent and 'all-included'.

## Functionality of a health insurance scheme

The above parameters are all interlinked. Each determinant in isolation represents only a small part of reality. It is therefore important, in order to understand, evaluate or eventually to compare a health insurance scheme, to consider all parameters together. This can be represented in a spider diagram (Graph 6). If the method of measuring and calculating the parameters is uniform, comparison between different schemes becomes possible.



Graph 6: Theoretical example of how a health insurance scheme can be apprehended for several parameters together.

## Discussion

The model of DHU has proven to surpass to a large extent certain weaknesses in the design of community-based health insurance.

DHIU, with the level of subsidies provided by the Senegalese authorities, are economically viable for at least primary and secondary health care. If the penetration rate increases further (to 40 or 50 %), tertiary health care can be included without a risk.

Without a uniform and controlled fee-paying system, DHU cannot contract health facilities that do not operate in full transparency. This cannot be regulated by individual DHU; it is a matter for the national level.

The DHU and the dynamics they provoke, through regulation and control mechanisms, contribute to improved governance of the health facilities.

Particular free health care packages could be integrated into the DHU. Until now, this is not the case. It does make the system less efficient and, to a certain extent, demotivates people to adhere to the health insurance. Alternative mechanisms or approaches are possible. The potential of DHU to help defragment health care financing by implementing and integrating free care policies and RBF initiatives, was largely left unexploited by the health authorities.

## Assuring quality care

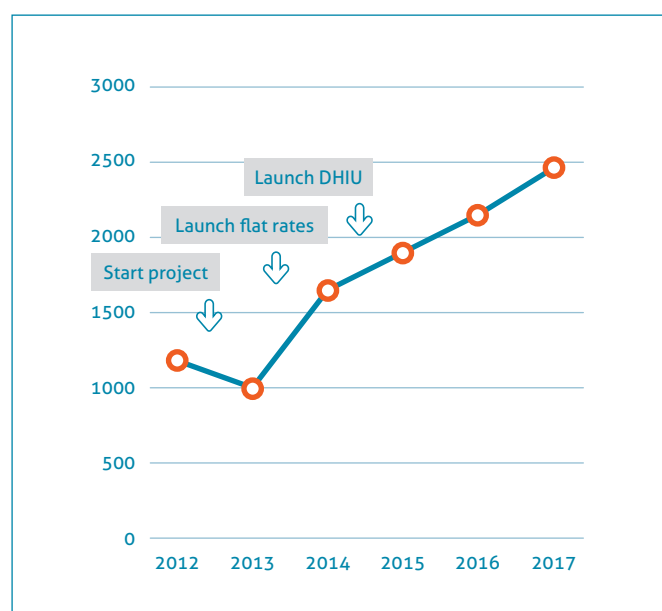
Insurance against disease risks does not make sense if the quality of care is not guaranteed, or if the package covered is insignificant. In both situations, universal health care would not be affected by health insurance. PAODES intervened on several aspects of health care delivery and organisation in order to expand the packages of care offered. The purpose of PAODES was to simultaneously address issues at the offer and demand side of the health system.

## Neglected disease areas

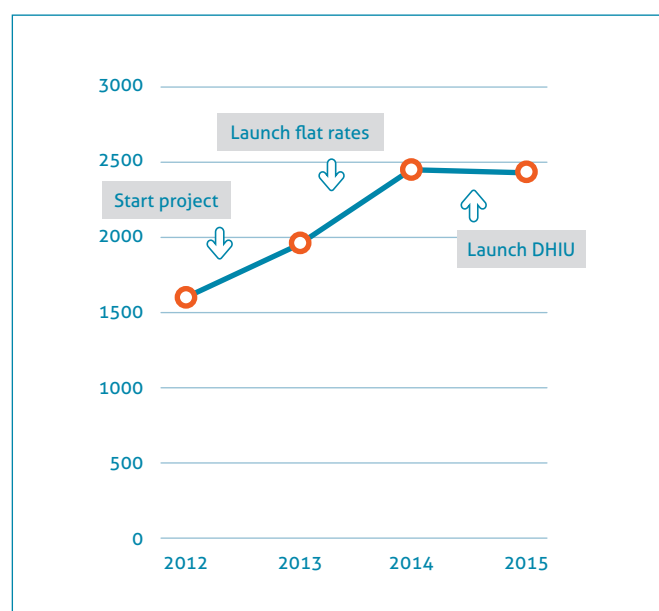
PAODES invested in certain areas of curative care for which the local system did not provide much coverage. Dental and ophthalmological care were boosted through the purchase of new equipment and staff training. Combined with the increased financial accessibility, both domains were better covered by the health services (Graph 7 and 8).

## Decentralisation of surgery services

Health districts in Senegal do not perform basic surgery such as caesarean sections. This partially explains the relatively high maternal mortality and definitely jeopardises financial and geographical access to surgery care. Decentralisation of certain surgical acts has been blocked for a long time, but several district hospitals were equipped with surgical theatres



Graph 7: Dental consultations in the intervention districts



Graph 8: Evolution of ophthalmological consultations

and blood transfusion was provided. Certain districts that fell under the DHIU were actually performing C-sections. Senegal is now seriously considering to change its policy and to allow a defined package of surgery to be performed by non-specialists.

### Evacuation system

Transport and especially emergency transport for patients is very expensive. The cost often exceeds the bill that patients pay for the actual service. Several studies demonstrated that the population was indeed aware and actually concerned about this problem. Ambulance service in Senegal is left to individual health facilities and local committees and district health teams to organise. Official subsidies are low and erratic and concern essentially fuel and vehicle repairs.

The DHIU decided to reimburse the ambulance fees and make them free for the patients, but not without a thorough analysis of the situation.

Table 4 shows this analysis before the decision to reimburse was taken. Because evacuations are a rare event in a society, they may be expensive for an individual patient, but they can be rather easily covered by a health insurance scheme. The table illustrates well how DHIU can organise the analysis to decide to include new items in their package covered. It is noteworthy to mention that the data collection could actually demonstrate that the district had too many ambulances and drivers, at least to just cover evacuations, and that the DHIU were not blindly prepared to cover all the costs of excessive vehicles and drivers. The analysis and contracting negotiations are an opportunity to look into the rational use of scarce resources. At the end, the DHIU decided to reimburse fuel only on an average consumption rate, depending on the average distances between health posts and health centres and average fuel consumption per 100 km. Vehicle maintenance and repairs would be covered by public funds that health facilities receive. The result was free evacuation for all insured patients.

Table 4: Analysis of the ambulance system before intervention of the DHIU

	Koungheul District	Sokone District
Health posts	18	16
Annual evacuations	435	465
Average distance of the ambulance to evacuate a patient (round trip)	77 km	80 km
Ambulances per district	10	9
Emergency evacuations / person / year	0.29%	0.31%
Ratio evacuations / primary curative consultations	0.39%	0.86%
Emergency evacuations / week	8.4	9
Evacuation / driver / week	0.7	1.3
Annual cost for evacuations (fuel, maintenance and repair of two vehicles, salary of three drivers half-time)	7,799,000 FCFA	8,069,000 FCFA
Average cost / evacuation :	17,929 FCFA	17,353 FCFA
Proportion of annual budget of DHIU to cover the total cost of evacuations for the assured patients	0.9 % (0.0086)	0.9% (0.0088)

### Other initiatives concerning the quality of care

Many other initiatives were taken to increase the quality of care. Clinical protocols for chronic diseases were developed with the Ministry of Health, staff was trained in the intervention areas and the DHIU co-financed the care. The initiative was too young to show any macroscopic impact, but DHIU were the only peripheral health insurance schemes in Senegal to actually get involved in significant chronic diseases coverage.

Initiatives were also taken in the same sense for mental health problems. The protocols were not effectively introduced by the time of this evaluation.

### Conclusion

The credibility of the health system depends on the quality of care and the packages offered by the services. Health insurance is not just an additional initiative to existing care systems, but it should be on the one hand an opportunity to look into the quality of care and the actual package of care offered to the population. On the other hand, it should be an opportunity to rationalise existing services where needed.

Contrary to PAODES, most donors do not invest simultaneously in offer and demand side, and in our opinion, the Senegalese Ministry of Health had too little critical attention for its own system in place. Health insurance and health care should go hand in hand, and articulate not only on financial matters but also on the quality of clinical care, quality control and health service organisation.

### Health insurance as a counterforce of health facilities

There is an important asymmetry of knowledge between professional health staff and the population. The population from their side are mostly ignorant about the technical quality of care and about the potential of the services. They therefore live quality of care as a subjective feeling (felt quality), but depend entirely on the health staff for technical quality.

Health care workers often feel more connected to the Ministry that is paying them, than to the patients for whose health they are responsible. Literature claims that there should be a payer-provider split and even a payer-provider-regulator split for balancing these societal powers and breaking monopolies. The classical approaches of community participation with health committees representing the population going into a dialogue with 'their' health facility, organised top-down by the health system, does not seem to work.

The DHIU pilot was an opportunity to look critically into existing power relations between facilities and the population.

With the creation of DHIU, the demand side saw itself reinforced with a new and powerful player. PAODES therefore had no choice but to look into the community participation issues with renewed attention.

Figure 6 shows the position of the new players in the health system. The DHIU technical team normally represents the population, but the population did not directly appoint it. Locally elected people, as representatives of the population, are members of the board of directors of the DHIU. Together they form the demand side, which is more distant from the population than maybe the classical health committees. On the other hand they have real power in society, at a sufficiently high level and the DHIU technical team can provide them with the necessary technical inputs when needed. Local politicians felt actually very confident to interact with the DHIU staff members because indeed they could explain the situations with which they were confronted from time to time.

Because of the professionalism, DHIU can more easily go into a dialogue with the offer side of the system. They are regarded as valid counterparts with real financial (they can penalise facilities by not reimbursing) and political power (backed by board of directors).

Interviews and focus group discussions confirmed these positions. Although anecdotal, several critical incidents illustrated that DHIU do defend the interest of the population when for instance health facilities or districts want to alter (raise) the user fees. DHIU have argued (with financial evidence, but also with political arguments like the interest of the public good) to persuade health districts not to change the fees. Although this cannot be expected from all DHIU if the system would be expanded and function under routine conditions, it shows that power relations indeed changed and

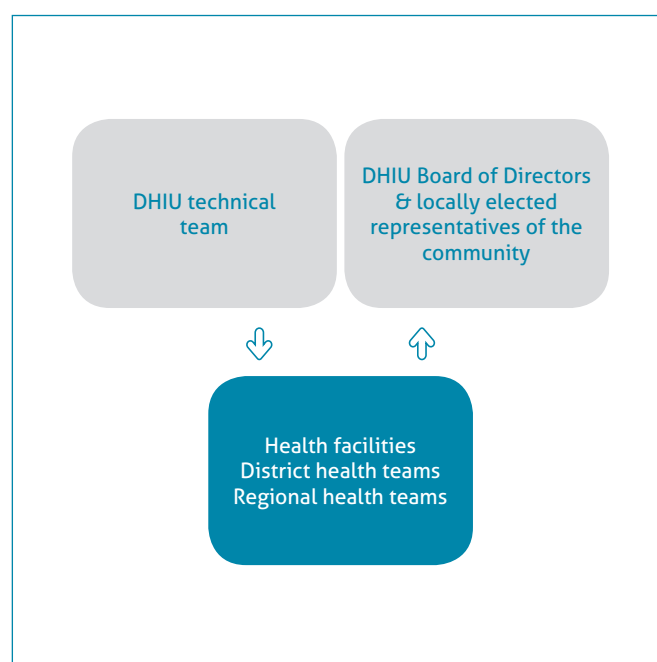


Figure 6: The new players in the power structures between offer and demand in the health system

that a potential for dialogue was created. The objective is not to break the power of the offer side, but to come to a better equilibrium.

DHIU also showed a very different relation with the population when compared to the classical health committees. With professional communicators in their team, they were able to mobilise communities at a larger scale and with a more qualitative dialogue. Among other things they made adhere entire villages at a time, by explaining that they could get a small discount if they did. Villagers could actually decide for themselves which members of the community could get access to the health insurance for free (covered by the rest of the villagers). Local politicians were allies in this dynamic because they saw (political) opportunities, but also a way to finance access for the poor without getting in cumbersome individual favours. Villages created common fields of which the harvest was meant to provide seed money to pay for the health insurance of the entire village. Although this dialogue was time-consuming, it was reported to be very effective and efficient in the long run, but final conclusions should be made only after a few more years of experience with this approach.

Finally, patients' rights were addressed through the function of a medical advisor. A medical doctor was recruited at regional level by the DHIU in order to do clinical audits in hospitals, to look into quality elements such as hygiene, keeping of medical records, drug availability, respect for clinical protocols, etc. These doctors were also consulted and they visited health facilities when complaints from users were received. As a recognised authority in health, this person was an ideal counterpart to talk with health workers. Complaints could in principle be escalated to the regional authorities. Corrective measures remained the responsibility of the health facilities and their superiors, the DHIU only brought the matter to their attention and could impose financial penalties if corrections were not respected. Although it was too early to assess whether this function was successful, the first results were very encouraging.

## **Governance as the ultimate condition for success**

### **With poor governance culture impossible to put up performant systems**

Governance is the most important aspect that eventually determines the quality and the financial accessibility of care. All mitigating elements, like new fee-paying systems, better drug supply chains, additional training for staff, accompanying community health committees, mobilising the population to adhere to health insurance, establishing performing health insurance mechanisms etc. become insignificant or ineffective if basic governance rules are not applied.

Although corruption is part of the governance problem, it is probably not the most important one. Absence of a

performant bookkeeping system at facility or district level, absence of a sound fee-paying policy, absence of a public authority performing systematic financial audits with real consequences if (important) anomalies are observed, delegation of responsibilities to inappropriate levels (e.g. leaving the recruitment of personnel or organising ambulance services in the hands of the population), or still a lax policy on drug management and sales, are all important factors that deter health workers and managers from rationalising activities. Directly engaging in the fight against corruption, whilst performant tools and procedures are not in place, is deemed for failure.

Health insurance can be the victim of poor governance structures, but on the other hand it can play an important role in regulating governance aspects of the health sector. Financial quality care control visits are part of the mandate of health insurance schemes such as the DHIU. Dealing with patients' complaints and defending their rights can also belong to the domain of expertise of a health insurance. They are well-placed to play a mediating role between patients and services. The medical counsellor engaged and paid by the DHIU managed clinical audits and verified the quality of care at the bedside among other things, by checking the respect of clinical protocols.

### **Political economy dynamics in a complex environment**

Political economy is an important aspect of the governance problem when large-scale innovations with political connotations are introduced in society. Indeed the piloting of the DHIU inevitably created a multi-stakeholder dynamic with political, technical and pragmatic allies, but also with opponents. Although the piloting was agreed upon with the Ministry of Health, not all executives in the ministry were in favour. One of the main reasons was the stress it provoked in the direction that was in charge of the implementation of the president's policy to provide health insurance for 75 % of the population by 2017. They experienced the initiative as a waste of time and scarce resources and did not accept that resources were put into research with – in their eyes – 'unknown risk-full outcome'.

The West African Economic and Monetary Union (UEMOA) was an important - abstract - player, because their guidelines were perceived by many stakeholders as the only way forward. Some of their explicit principles though, such as 'Health insurance should be private, autonomous, self-sufficient', are no longer backed by evidence, but are nevertheless maintained in many policies in French-speaking West African countries, including Senegal.

### **Concrete mitigating measures in the pilot areas**

Governance aspects in society are very culturally determined and many aspects therefore cannot be addressed easily, surely not so by a specific project, limited in time, means and more importantly legitimacy. Other weaknesses in governance are more technical and can be subject to improvement.



PAODES had some successes in the pilot areas, but they will be difficult to maintain if they are not supported by standards and regulations from the national level.

### **Introduce accounting capacity at facility and district level**

Health workers and health managers saw their local budgets expand through the health insurance financing. Government subsidies to districts and health posts are slow and difficult to mobilise. The only 'easy' money at facility level in Senegal was the income generated from out-of-pocket contributions from patients.

With the health insurance in place, more financial means arrive directly at the facility level. Local health workers and managers therefore suddenly have to take financial decisions. They need to have the capacity to do so, and in the pilot areas accounting officers were appointed. But rather than modernise financial management at that level, they aligned with the less transparent and rather improvised financial management system already in place.

Strong guidelines from the national level and management tools such as an accounting software package need to be introduced still.

### **Rationalised fee-paying system**

The very liberal approach from the Ministry of Health to leave all fee-paying matters to local health systems and autonomous hospitals, has led to an uncontrolled growth of financial regimes, personal incentives and staff recruitments at local level.

The introduction of a new fee-paying system – all-inclusive flat rates per disease episode that were negotiated between the health insurance and the health facilities – made the system more transparent, for users, health managers and health insurance alike. Its potential as an important regulating factor for more rational use of scarce resources was recognised by all parties.

The national government (Ministry of Health, health insurance scheme) will have to take over this task of price-setting in order to create and to maintain a uniform system for the entire country. Mandates of district health authorities and of regional hospital managers will have to be revised. Without this strong position of the government in this matter, health insurance, under any format, is doomed to be reduced to a marginal system.

### **Drug management and national drug policy**

Drug management and national drug policy are still weak in Senegal, at least partially due to a business-as-usual type of attitude for many decades. This creates a situation where generic drugs are hardly used, public pharmacies often run out of stock for many essential drugs and medical doctors prefer to prescribe specialties instead of generic products.

Structural and governance problems are making it hard to rectify the situation. The role of central authority is crucial for lasting solutions in this respect.

### **Conclusion**

Government should take responsibility and lead ministries such as the Ministry of Health to at least address technical and procedural matters to improve general governance. On the other hand, one has to recognise the huge financial efforts of the Senegalese government to subsidise the national health insurance scheme.

## **General conclusions**

### **Discussions on the models introduced**

The PAODES pilot model (Figure 4, page 3) can be read as a simplified model of a universal health insurance model (Figure 2, page 2). In the case of PAODES, the DHIU are the building blocks and the only actor for all output-based financing. They should integrate all other initiatives, such as Results-based financing (RBF) and free health care initiatives.

### **Reversed delegation strategy**

Opting for professionalised structures has bigger consequences for the organisation of health insurance than one might think at a first glance. Working with volunteer organisations (for Senegal commune-based health insurance) that are supported by external 'supervisors' or counsellors is not an alternative leading to a professionalised organisation.

Figure 7 illustrates the structural differences. The figure on the left is the proposed model, in which the DHIU were piloted. It is a tiered, top-down, government regulated organisation with delegation of tasks. The units at each level have the competences needed at that particular level to fulfil the respective mandates. Delegation goes from higher to lower levels. The degrees of freedom for each level and the complementarity need to be identified.

The model which was piloted as a national policy in Senegal (figure on the right) was essentially based on the classical community-based health insurance. This basic model was adapted a first time, when the national health insurance programme realised that the creation of community-based health insurance units in nearly every village was impossible to oversee, to coordinate or to accompany. It was then decided to organise commune<sup>3</sup>-based health insurance units for several villages. When they then realised that communities of up to 30 or 40,000 inhabitants were too big to organise community-based health insurance, it was decided to seek professional support. These considerations led to the definition of Departmental unions of commune-

3 | Communes are administratively defined for the country and unite several villages



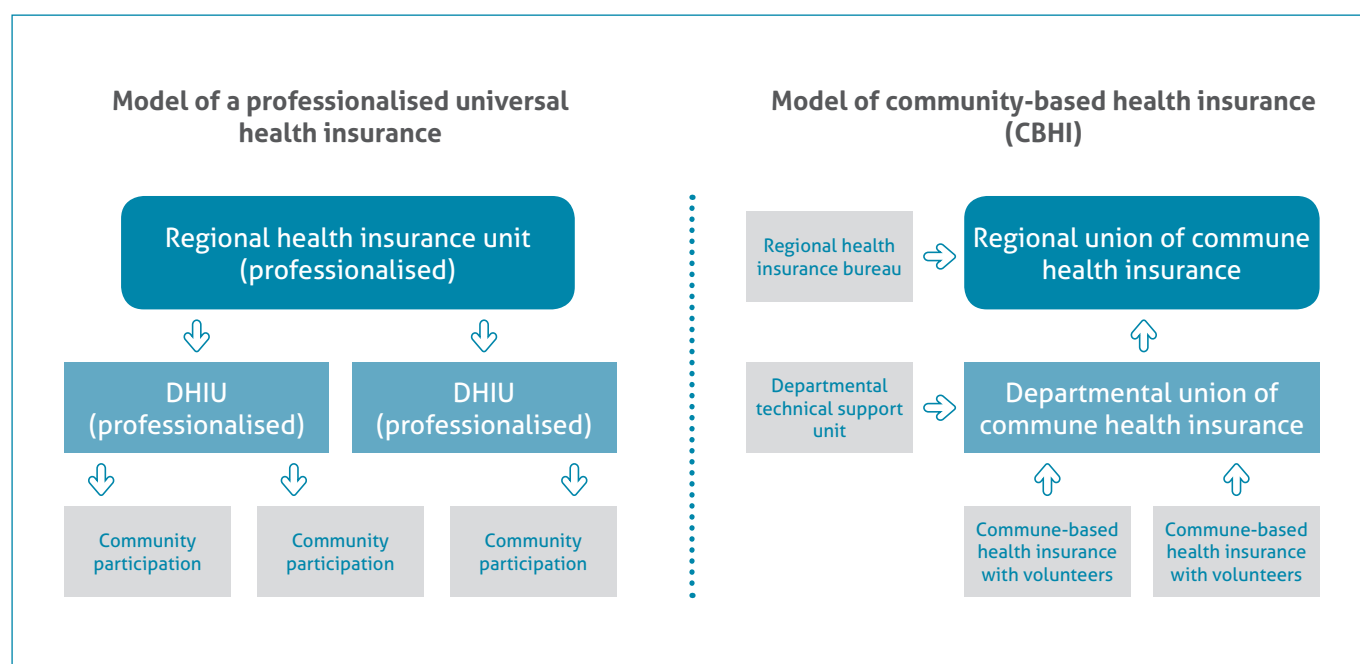


Figure 7: Consequences of a professionalised universal health insurance: inversed delegation of tasks

based health insurance units. These unions were manned by representatives of the community health insurance initiatives, which could get professional advice from a departmental technical support unit depending from the national programme.

In such a model, the community-based health insurance, with volunteers and representatives of the local community, is delegating bottom-up. By doing so they wanted to respect the principle of autonomy and community-led organisations. The option of the DHIU implicitly considers this solution as not efficient and even naïve.

### Effects of previous political choices

Changes in complex social systems are path-dependent, meaning that previous decisions have an influence on the next steps to take. They limit the margins of choice left to decision-makers. Only radical decisions can induce a real turn-around in a social change process.

Free health care for selected age groups (under-5, over-65) or pathologies (maternity care) has interfered with the creation of health insurance schemes. Free health care demotivates people to adhere to health insurance schemes because certain vulnerable family members are already covered. Richer families in Senegal have benefitted more from free health care than poorer ones. Free health care also led to fragmentation of health financing, and so to inefficiencies in the system. Politicians and health insurance programme managers at the Ministry of Health perceived the free health care policy as an easy bypass to commit to the president's ambition to provide social protection to 75 % of the population. Free health care

schemes prevented national authorities to consider protecting all their citizens instead of particular groups in society.

The community-based and volunteer approach reinforces the previous observations and prevents the integration of the informal sector into the formal sector which benefits from a public, mandatory and professionalised health insurance scheme, covering a larger package of care. Solidarity between the richer formal sector and the informal sector was therefore not feasible.

Finally, the latitude of the Ministry of Health to allow many initiatives, often donor-led, that interfere with health financing and that create enormous fragmentation and inefficiencies, is another inheritance of the system that was interfering with the creation of a rational and efficient health insurance.

### Strategic determinants

Figure 8 summarises the strategic factors that influenced the change process. They can be theoretically derived from the model that was piloted, but for each of the factors in this figure, there are strong indications to confirm the change theory.

The arguments and underlying observations of each of these elements are discussed in previous paragraphs.

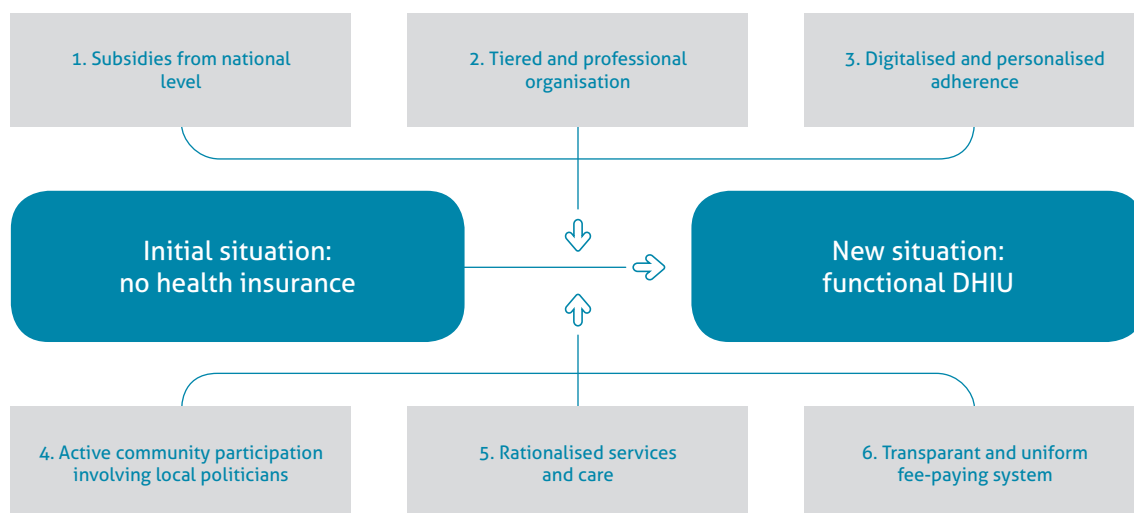


Figure 8: Strategic determinants of the change process



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## Sources

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