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# TESTING THE HEALTH SYSTEMS IN AFRICA

By Pierre Jacquemot

## Testing the health systems in Africa

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### Abstract

**It is still too early to assess the extent of the Coronavirus pandemic in Africa, but everything seems to suggest that it will have a major impact on already vulnerable health systems – from prevention to the management of patients. Various forms of resilience are being tested with pejorative effects, especially against the very poor, who are less prepared to observe the protection measures and more exposed in their daily lives. However, lessons can be learned from past epidemic experiences and possible solutions to the crisis can already be identified.**

As Covid-19 has gained a foothold throughout Africa, it may become one of its major public health challenges. The Economic Commission for Africa (ECA, 2020) estimates that more than 300,000 Africans could lose their lives as a result of the pandemic. Its impact on the continent's already struggling economies could plunge nearly 27 million people into extreme poverty. This tragic prediction certainly deserves to be taken with caution, and will be reassessed as the pandemic evolves in the specific context of the countries of the continent. Yet, the measures taken under the state of health emergency (information, curfew, lockdown, barrier precautions, and restrictions on mobility) are facing particular difficulties in implementation. Half of the urban population is concentrated in precarious, overcrowded and poorly equipped neighborhoods, and only a third of households have access to handwashing facilities. Most importantly, however, there is concern about the fragility of health care systems.

### Severe deficiencies

The picture is bleak. According to the World Health Organization (WHO), Africa is home to a quarter of the world's sick people. It produces only a tiny fraction – less than 2% – of the medicines consumed on the continent. It receives only 1.3% of the world's financial resources devoted to health and has only 3% of the world's health professionals (WHO, 2018).

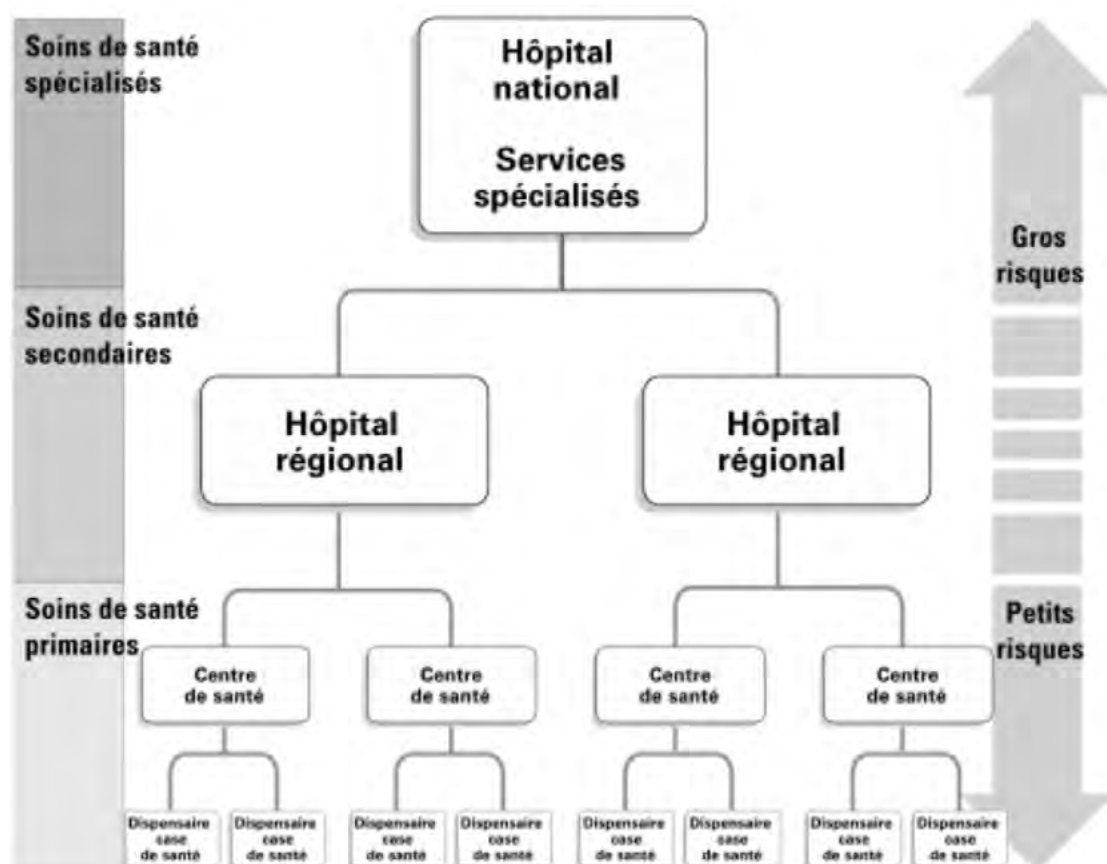
To make an analogy with the virus, should we fear that the immune system in health centers and hospitals will be overloaded and that their vital organs will be hit by a ravaging inflammatory eruption, leading to an acute respiratory distress syndrome?

In the recent past, Africa has shown some capacity to mitigate health risk. The continent has some assets in the fight against the virus such as a young population (60% under 24 years of age) or the experience acquired in fighting other serious pandemics (HIV-AIDS, bird flu on almost the entire continent; Chikungunya virus in the Indian Ocean and East Africa; Zika virus, Lassa fever and Ebola virus in West Africa), as well as advances against malaria and tuberculosis.

A diagnosis of health systems can be made. Lessons can be learned from the past. Paths for reform will surely be taken.

## Testing the resilience of the health system

The health system, practically everywhere in Africa, is organized in a pyramidal way from a spatial and functional point of view: first-level structures (first-aid dispensaries, health centers for common pathologies, community care and maternal health); then structures of the district or regional hospital type with 100 to 200 beds which normally offer a range of outpatient and inpatient care (medicine, pediatrics, surgery, maternity and, sometimes, emergency services); reference structures at the national level offering medical specialties and, finally, university hospital centers which employ almost all the specialists who teach in medical schools.



Health as a public good is distributed by different actors. Approximately 60% of total health expenditure benefits private providers or those attached to religious structures. Their place varies from country to country depending on political, historical and economic factors. In some countries, such as Uganda and Ghana, it is above 70%, while in others, such as Namibia, it is below 10% (Source: WHO, 2018).

The poor and rural populations make the greatest use of informal private providers, particularly healers and unlicensed drug dealers, while urban middle- and upper-class people are more likely to use formal private services.

At the same time, the systems achieve only 49% of their possible levels of functionality assessed on 4 criteria (WHO, 2018).



1. Access to essential services: on average, the health system provides only 48% of the health and well-being needs of the population<sup>1</sup>; countries are unable to provide the infrastructure (health posts, hospitals), personnel and products needed for these services within an accessible range and at affordable prices;
2. The quality of services is assessed by the patient experience: the success of treatments, the assurance of safety and efficacy of interventions are insufficient;
3. Demand by households and communities for essential health services, including prevention, immunization and primary care, is being met by an inadequate supply of quality health services;
4. The resilience of systems to risk factors such as disasters or epidemics is generally low (index: 0.32) but higher in countries that have been exposed to Ebola (Guinea, Liberia and Sierra Leone<sup>2</sup>), suggesting that lessons have been learned and appropriate investments made.

Further analysis of the system's performance shows that the higher the country's income level, the better the performance. This « income dividend » is most likely the result of the greater number of investments available in the system as a country's income level rises.

The continent has an average of 1.4 health worker per 1,000 inhabitants compared to 12.3 in the countries of the Organization for Economic Cooperation and Development (OECD). Globally, Africa has one doctor per 5,000 inhabitants, i.e. 5 times less than the world average. On the continental level, this situation is the consequence of the migration of medical populations to the West: a surgeon earns an average of \$216,000 per year in the United States compared to \$24,000 in Zambia with equal skills. Kenyan doctors earn an average of \$6,000 a year. This brain drain poses a problem, both in

1. Only five countries score above 60%. The best score in the sample (which excludes Egypt, Morocco and Tunisia) is that of Algeria, which is able to provide 70% of the health needs (WHO, 2018, p. 21).

2. Ebola infected over 28,000 people, caused over 11,000 deaths. Its human cost has been considerable in terms of suffering, social dislocation and food insecurity.

terms of the progress of research and the expertise that these professionals could bring to their countries of origin by advising governments on health policies to be pursued. In addition, there are few links between the diaspora and local human resources.

The shortage of health workers poses an enormous dilemma: the transfer of medical personnel to Covid-19 care could exacerbate shortages in other areas, which could generate consequences beyond those of the pandemic, as happened in the Ebola-affected countries that spread from 2014 and 2016, where during the response there was a penalizing drop in the number of staff in maternal and child health services.

## The hospital's inhospitality

The main danger associated with a pandemic such as Covid-19 is the increase in the number of cases, which results in overcrowding in hospitals, which are then overwhelmed, as is happening in Europe.

What is the African hospital capacity? Webometrics, a ranking carried out by the Superior de Investigaciones Científicas (CSIC), the Spanish public research organization, on the efficiency of hospitals around the world, shows that of the 11,780 top hospitals in the world, only 100 are African. Gambro Healthcare in Swaziland, Africa's leading hospital, is ranked 598th, while As Salam International Hospital in Egypt, which is ranked 1542nd, holds the second place in Africa. South Africa (5 health centers in the top 20 African hospitals), but also Morocco (Mohammed VI Hospital in Marrakech, Ibn Rochd in Casablanca, Hassan II in Fès) have honorable rankings. It should be noted that countries known to be poor may have centers of comparatively high quality: the Institut Pasteur in Madagascar (2065th in the world) or the Edna Adan Maternity Hospital in Somaliland (4149th). On the other hand, Central and West Africa are absent from the list of the world's top 6,000 institutions.

This ranking is subject to change. Morocco is planning to build 40 new facilities as part of its « Program to improve access to healthcare »; Senegal has 4 under construction. In Kinshasa, the Fiftieth Anniversary Hospital, inaugurated in 2014, built by Chinese companies and equipped with magnetic resonance imaging and one of the largest scanners in the country, is managed by an Indian service provider, Padiyath HealthCare. In the last ten years, China has built 77 hospitals in Africa.

The diagnosis of the African public hospital is severe. In fact, the technical facilities are often obsolete, with poorly functioning laboratory and radiotherapy equipment. African public hospitals are suffering from a lack of maintenance. It is true that some pockets stand out and are not characterized by poor quality of care; however, the medical staff, because they are rarely trained in the evaluation of medical practices, are often ill-prepared to engage in the endeavors to streamline professional conduct and management practices.

The population's perception of the public hospital is often pejorative, sometimes seen as a « place of death », a place where you are taken as a last resort. Data collected from more than 45,800 respondents in 34 African countries during the survey of the Accra-based research network, Afrobarometer (Mattes, 2019), conducted just before the pandemic, confirm this image. Experiences vary from country to country, but among patients who

have been in contact with a public health facility in the past year, on average almost half said it was difficult to obtain care, while 4 in 10 said they had experienced long waits or never obtained services.

In a morbid context, the main element is the capacity of each country to offer its sick population a resuscitation capacity proportional to the intensity of the spread of the disease. Situations vary widely. Morocco is the best endowed: 3,000 beds. South Africa has 1,000 resuscitation beds for 58 million inhabitants, Senegal has 360 beds for 16 million inhabitants, Mali only 40 beds and Burkina Faso one bed for 20 million inhabitants.

Recognizing the critical situation in which their public hospitals often find themselves, some states have therefore undertaken a reform of the management of their hospital structures. This is the case in Morocco, Kenya or South Africa (for the latter country, see Hajar El Alaoui, 2020). The modalities of reform vary. Nevertheless, common elements can be found from one country to another: the need to draw up a regulatory framework and a health map; as well as the need to enhance the management of their hospital facilities; develop hospital institution models; upgrade maintenance, staff training, and improve the information system. At the same time, as medicine continues to specialize, it has entered a cycle of continuous increase of its costs. Treatments related to the epidemiological transition and new urban diseases (e.g. latest generation antibiotics, anti-depressants, convenience medicines) and new equipment (e.g. anesthesia and resuscitation units, defibrillators, ventilators, scanners, ultrasound scanners) generate costs that overturn old pricing systems and require strict procurement management rules (Tafirenyika, 2017).

## The imbalance of the hospital model

The principles of health financing were set out in 1987 in a text adopted by the Heads of states entitled the Bamako Initiative<sup>3</sup>. The aim was to establish community participation in both the management and financing of the health system. The free health care previously provided as a basis for the public provision of health care could no longer be supported by the states, due to a lack of sustainable resources. The alternative was then as follows: either medical services would remain free but deprived of everything, or they would become chargeable for those with even modest purchasing power, but to the exclusion of the poor, in order to provide a minimum quality service to patients. One principle has therefore gradually imposed itself: in the context of the shortage of public transfers, only payment for medical care provided can help to restore a minimum level of quality to medical services that have otherwise become increasingly poor. The implementation of the Bamako Initiative has led to some progress in the management of health structures in several African countries. However, while the system has only contributed very partially to improving the availability and quality of health services, it has also made access to care even more difficult for poor households, due to their financial incapacity.

After 20 years of direct payment by users of health facilities, many African countries have therefore committed themselves, thanks to a doctrinal shift by the World Bank (WB), to

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3. In 2001, African countries agreed to devote at least 15% of their budgets to health care. Fifteen years later, only six countries (Botswana, Burkina Faso, Malawi, Niger, Rwanda and Zambia) have reached this goal, but not all their populations have access to decent care.

free-of-charge health policies, in particular in favor of three of the most vulnerable groups (pregnant women, children, the poor). For the sake of fairness, but also efficiency of the health care system, fee exemptions have been restored almost everywhere.

But quantity is not quality. Rapidly, the measures in favor of free health care led to a return to declining quality of care and a slow impoverishment of public health facilities with various pernicious effects: empty medicine shelves, radiology equipment that has broken down due to lack of maintenance, absenteeism of health care personnel, illegal invoicing of care. The « distortions » are illustrated in several articles in the collective work of J.-P. Olivier de Sardan and V. Ridde (2014). The result is the de facto introduction of a two-tier medicine, juxtaposing good quality private paid medicine reserved for the rich, and free but inferior care for the poor populations.

In practice, free care is never completely free of charge for the user, because of the persistence of direct costs not covered by free care (e.g. caesarean sections), indirect costs (transport, people accompanying, food) and illicit costs (undue invoicing, « gifts » to health workers). Between 60 to 70% of the care provided by public health institutions is paid directly by households. Lastly, shortages prevent the provision of free medicines. In the absence of available medicines, health workers dispense prescriptions for chargeable drugs, sometimes sold in the health facility's pharmacy, sometimes sold illegally by health workers (either from official kits or acquired in various ways).

This trend is largely at work. Privileged social categories resort to the services of private clinics (often promoted and supported by donors and where they sometimes find the same practitioners as in public hospitals<sup>4</sup>) or seek treatment abroad, in the Maghreb, South Africa, Europe or the United States. For the vast majority of the population who cannot afford these health stays, the temptation is great to turn to traditional practitioners, healers, marabouts and other miracle makers.

## Towards equity?

In Sub-Saharan Africa, households finance between one third and two-thirds of their health expenditures<sup>5</sup>. About 10% of health expenditure is financed directly by external donors.

A few countries have started to work on the creation of health insurance schemes to help develop the supply of care. After Morocco and Tunisia, some countries in Sub-Saharan Africa started some twenty years ago: Gabon (2007), Mauritania (2008), Mali (2008), Togo (2010), Ivory Coast (2015). Often, in these countries, only a minority of the population has access. In Kenya, the level of universal coverage is only 20%, and the share of GDP spent on health is only 4.5%. Nigeria's national scheme covers less than 3 % of its citizens. South Africa spends more on voluntary private health insurance (42% of total health expenditure), than any other country in the world. Yet this scheme covers

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4. A cynical illustration of this is provided by Brazzaville, where opposite the Hospital and University Center (CHU), which experienced a long strike in 2017 for lack of resources and late payment of staff salaries, a private clinic was set up where the same doctors come to work.

5. According to the WHO, in 2015, out-of-pocket expenses paid by patients as a percentage of total health expenditure averaged 32% in Sub-Saharan Africa, with differences ranging from Sierra Leone (76%) to South Africa (7.2%) and Nigeria (66%). In France the figure is 7.4%.

only 16% of the population. It is rare that countries, like Morocco, have undertaken projects to extend it to the informal sectors.

Ghana is an interesting case. To address the difficulties associated with the insolvency of patients and their families, the government launched the National Health Insurance Scheme (NHIS) in 2005. Mutual insurance bodies that have become very popular are associations established on a community or professional basis. Membership fees are used to reimburse health expenses, but also to carry out preventive actions. The government has increased VAT to direct part of it towards the health insurance system. Then, all financing (social contributions of civil servants and employees in the formal sector, VAT, voluntary insurance) is paid into a common pot. With 40% of the population covered, it is a system that works well, even if it suffers from frequent shortcomings encountered everywhere: slow reimbursements, overconsumption... At the same time, Ghana has strengthened its primary care offer. The country spends nearly 9% of its GDP on health care, and today nearly 90 % of the population enjoys universal health coverage. To reach this level, Rwanda has trained thousands of community health workers. While health insurance is financed by the government and individual premiums, donors fund nearly half of Rwanda's health budget. The most disadvantaged Rwandans pay nothing to join the program, while the better-off pay about \$8 a year, a remarkable result for a country whose per capita national income of \$692 is one of the lowest in the world.

## Success stories, lessons learned

The continent offers some signs of hope, though. The gross mortality rate from the ten leading causes of death has declined overall from 87.7 to 51.3 per one thousand inhabitants between 2000 and 2015. Real progress has been made in the fight against malaria, the leading cause of death. Over the same period, the rate of mortality from the disease has fallen by 66 % in all age groups. Among children under the age of five, who are the most vulnerable, deaths have fallen by 71%. This is largely due to the use of mosquito nets, artemisinin-based combination therapy and indoor residual spraying of insecticides<sup>6</sup>. The rate of HIV infection has also been declining over the past decade. According to the latest UN-AIDS report, in five years new HIV infections have fallen by 14% in Eastern and Southern Africa, the most affected region in the world, and by 8% in West and Central Africa. Despite economic difficulties, Sub-Saharan Africa has developed the most significant programs in the world, providing antiretroviral (ARV) treatment to more than 12 million people.

Health system challenges are not just about infectious viral diseases. The morbidity burden is now being driven by non-communicable diseases (NCDs), also known as "lifestyle diseases" in urban Africa, where the epidemiological transition is at work, violence and trauma. For example, no significant reduction is found for diabetes, cardiovascular diseases, cancer<sup>7</sup> and chronic respiratory diseases. A resident aged 30 to 70 years has a 20% risk of dying from one of these major non-communicable diseases. It is feared

6. WHO statistics show that in 2000, only 2% of the 667 million people living in Sub-Saharan Africa used mosquito nets. By 2015, more than half of the one billion people living on the continent were using them.

7. Epidemiological studies predict 1.2 million new cases of cancer in Africa by 2030, and more than 970,000 deaths if adequate prevention measures are not taken quickly. The World Health Organization estimates that in Sub-Saharan Africa, the rate of increase in cancer deaths will be considerably higher than in Europe or the United States.



that these diseases will flare up if measures to control them weaken with the focus on the Coronavirus. By the way, isn't there an Ethiopian proverb that says: « be inkert' lay Joro degif » (it is like “having mumps on top of goiter”).

## Exit routes

In a context of the population doubling every twenty years, improving the coverage of health needs to levels that allow health systems to catch up requires efforts that some African countries can hardly believe are within their reach if they rely on their own resources. Let's take the example of Niger: covering all needs would imply multiplying by 4 or 5 the ratio of medical staff and hospital beds per inhabitant by 2030; this means multiplying by 8 the financing that the country devotes to the sector.

The formulation of health policy requires consideration of three major issues that are closely interrelated and on which trade-offs are built. What is the respective share of available resources that should be allocated to preventive actions (education, hygiene, vaccination, etc.) and to medical-curative actions? What is comparative efficiency of centralized and decentralized systems and what does this mean for the organization of the health pyramid? How should the financing of the health system be supported: indirectly through taxes or health insurance, or directly in return for the service, and if so, in what proportion? The answer given to one of these three questions may influence the answers that governments give to the other two. Thus, the option in favor of the national hospital implies giving priority to medicalization and financing through the budget. On the other hand, the decentralized option gives priority to prevention, while at the same time requiring direct participation by the beneficiaries.

The avenues being explored to bring the African health system out of its current predicament may be inspired by anti-coronavirus therapy, a therapy in four phases:

Types of actions improving the quality of health services

	Types of problems to be solved	Types of actions
<b>1.Enhance immunity Creating an enabling environment</b>	Inadequate information and prevention Weak epidemiological knowledge Insufficient financial resources	A campaign to raise awareness about hygiene and care Epidemiological monitoring and alert system Prevention and screening policy Minimum level of budgetary expenditure
<b>2.Reduce inflammation Improving quality and access to care</b>	Lack of quality in the provision of care Limited accessibility Lack of medicines Material and equipment deficiency	Accreditation of health care facilities Pricing policy Control and inspection Participation of associations Essential drugs policy and bulk purchases Maintenance policy

<b>3.Weaken the virus Capacity-building for providers</b>	Insufficient qualification of caregivers Management failure Mismanagement practices	Initial and vocational training Professional assistance tools (therapeutic profiles) Training of health managers Management contract
<b>2.Improve the functions of failing organs Empowering « customers »</b>	Asymmetry of information Ignorance of the general state of morbidity Absence of health mapping Failure to follow up preventive and therapeutic recommendations	Pricing information Organization of health districts Use of ICTs Dissemination of social protection: private insurance, mutual health insurance schemes

In any crisis situation, information management is crucial. Adequate, reliable, up-to-date and contextualized data must be collected and used as quickly as possible in order to anticipate, evaluate and correctly characterize the situation, identify possible responses and fuel decision-making; then communicate them with sincerity to worried populations, sometimes locked down not in their own space but in fears arising from previous violence or crises. Several countries are actively preparing for this, such as Ethiopia, Ghana, Rwanda, Ivory Coast or Senegal, which have local expertise and are organizing medium-term responses to this scourge throughout their territory. The contributions of the new information and communication technologies can be important from this point of view. For example, to overcome the shortage of health workers, solutions are made available thanks to telemedicine, to improve the connection between hospitals, the logistical management of medicines and the fight against counterfeiting or the creation of networks of experts...

Since the beginning of March 2020, Africa has been preparing and organizing its response to the pandemic, taking into account the continent's particularities (insufficient equipment, containment measures difficult to implement, immediate loss of household income, difficulties in supplying cities). The overriding priority is to increase spending on health to save lives and, at the same time, to provide funding for those whose livelihoods are disrupted. Timely and substantial assistance is crucial (Moustapha Ly and Fahd Azaroual, 2020). This can be in the form of cash transfers or in-kind support to vulnerable households, including informal sector workers, or targeted and temporary support to hard-hit sectors (IMF, 2020).

Substantial aid will be made available. The IMF is making USD100 billion available through fast-disbursing emergency financing mechanisms. In addition, the poorest countries can obtain grants from the IMF's Catastrophe Containment and Relief Trust that will enable them to repay their debts to the institution. The World Bank (accelerated financing of 14 billion dollars), the African Development Bank (ADB), which launched a record breaking \$3 billion "Fight Covid-19" Social Bond, and private foundations are also committed to enable African health systems to withstand the violence of the shock. The Global Fund to Fight AIDS, Tuberculosis and Malaria (GFFATM) is currently the best-endowed multilateral instrument. It is responsible for releasing 10% of its resources, or around €500 million, to partly finance emergency aid to health systems. These initiatives are supported by the African Union Commission, the WHO and some European countries such as France and Germany.

The moratorium on debt service payments, decided on 15 April 2020 by the G20 for 44 African countries, is a salutary initiative to provide them with the capacity to directly finance their urgent need in the fight against the viral pandemic. It should be noted, however, that there is a major limitation to the implementation of a moratorium or debt cancellation: the measure will be of benefit, first of all, to the most indebted countries (maybe those that have managed their debt the most poorly), which are not necessarily the worst off in terms of health systems or the most affected by the pandemic.

The solution will probably rather consist in quantifying beforehand the real needs in terms of health and negative economic impacts (disruption of production and a sharp drop in demand; repercussions of the brutal slowdown in world growth and the tightening of financial conditions; and a sharp decline in commodity prices), or more simply, it will involve considering the size of the population (it is women and men who are ill), then quantify the amount of aid needed and, therefore, the amounts to be rescheduled or cancelled.

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