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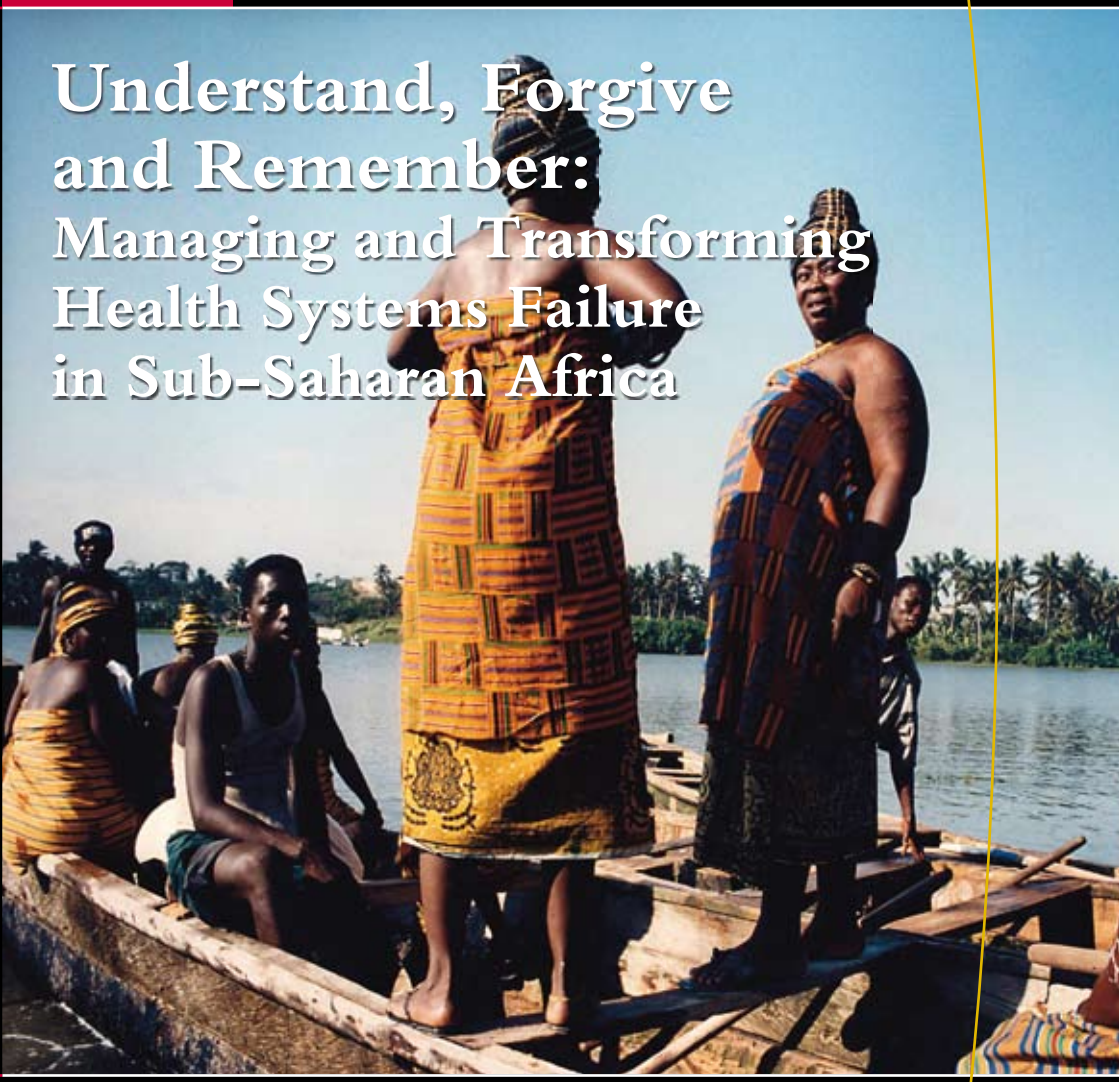
Irene Akua Agyepong

Understand, Forgive and Remember:
Managing and Transforming Health Systems Failure in Sub-Saharan Africa



Universiteit Utrecht

Understand, Forgive and Remember: Managing and Transforming Health Systems Failure in Sub-Saharan Africa

Irene Akua Agyepong

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Introduction

Rector magnificus,

Intuitively, one would not link factory owners who run their machines on fossil fuels such as petroleum, the clearing of large areas of rainforest for farming and construction, extensive urbanization and forest fires to heat waves, melting ice caps, flooding and the challenges of inhabitants of coastal towns struggling with rising sea levels. These different events often take place on different continents at different times. Yet modern science has clearly shown us that they are all connected and linked by the phenomenon known as global warming, because they all share the same world atmospheric and climate system.

Systems are made up of separate and yet interrelated and interdependent parts. A system can only be fully understood by examining the degree to which the separate parts are interrelated . In the words of Senge[1] "....systems ……. are bound by invisible fabrics of interrelated actions, which often take years to fully play out their effects on each other." The interrelatedness within systems is not always immediately obvious. They can be difficult to understand and address due to their complexity and the need for multi-dimensional and multi-disciplinary analysis.

I focus my inaugural address on health systems in Ghana and sub-Saharan Africa and on how we can manage and transform their inadequacies. The framework of the 2000 world health report[2] defines a health system as: **"The resources, actors and institutions related to the financing, regulation and provision of activities whose primary intent is to improve or maintain health."** Many countries of sub-Saharan Africa continue to struggle with how to bring about rapid improvements in poor population health outcomes and indicators. One reason for the slow progress is the fact that many health systems in sub-Saharan Africa are weak and inadequate. This is not a new observation. In the late sixties for example, WHO officially recommended that the then policy that had applied for over a decade and that was aimed at eradicating malaria in sub-Saharan Africa should be replaced by policy based on controlling malaria as part of Primary health care.

One of the reasons given for the failure of eradication, and the policy shift from eradication to control as part of primary health care concerned the weak health systems, including poorly developed and in some cases non existent basic health services[3, 4].

So what can we do? It is my opinion that, if we are to realize effective management and transformation, then we need to understand the goals of health systems and factors that affect our ability to achieve these goals. Beyond understanding, we need to forgive our genuine past and present inadequacies in order to encourage honesty in analysis and learning; and not to paralyze present and future effort. However, unlike the old age adage that says 'forgive and forget', we need to forgive and yet remember the past in order to effectively apply what we have learned. This is the only way that we can prevent similar inadequacies and failure in the present and the future.

I have borrowed part of the idea for the title of my inaugural address from the book by sociologist Charles L. Bosk[5] 'Forgive and Remember: Managing Medical Failure'. Charles Bosk spent 18 months carrying out participant observation in the surgical service of a prestigious American teaching hospital. He was trying to answer the interrelated questions of social control, social support and sustaining individual commitments, motivation and action in the face of failure during the training and professional functioning of surgical specialists. My address focuses on the specialty of public health and the specific area of the performance of health systems in the low and middle income countries (LMIC) of sub-Saharan Africa.

The consequences of inadequacies in the performance of health systems often do not have a human face and therefore may not stare us in the face as starkly as clinical medical failure usually does. Health systems failure can lead to major inconveniences and sometimes disastrous consequences for individuals as well as large numbers of people. However, the causes and effects may often be more distant in time and space when health systems fail compared to when personal clinical care proves inadequate. Moreover, health system inadequacies and failures are easily obscured under population statistics. Four hundred deaths among women for every 100,000 live births; 70 deaths among infants out of every 1,000 live births; or one out of

every 10 families driven into severe poverty by out of pocket spending on health can look abstract and remote on paper – especially when stated in the proper scientific language. It does not evoke the emotions of seeing the mother or the infant take their last breath in front of your eyes due to a cause that could have been prevented. And how often, if ever, does a community lodge a complaint against or sue a public health authority for suspected failure in its core functions and therefore for contributing to the level of morbidity and mortality in the community due to ineffective performance and 'health system failure'?.

Many examples and illustrations that I use will be from Ghana – the setting that I know most thoroughly. I have however not limited the focus of this address to Ghana, which is only one country of many in sub-Saharan African. The destinies of the nations on the African continent are linked and their successes, failures and learning cycles cannot be completely independent. Despite much diversity there is also much commonality on the continent.

Understanding health systems performance

The WHO framework for assessing health systems performance[6, 7], distinguishes between intrinsic and extrinsic health system goals. Intrinsic goals are goals that are generally desired for their own merit. Extrinsic goals on the other hand, are goals that are desired only to the extent that they increase the attainment of intrinsic goals. The three intrinsic goals of health systems are to improve health, to improve the responsiveness of the health system to the legitimate expectations of the population and to improve fairness in financial contributions to the health system.

The achievements of the three intrinsic goals of a health system are influenced by the performance of four basic health system functions of stewardship, financing, resource generation and service provision. The ability of a health system to perform optimally on these four basic functions is influenced by factors that are outside the health system, but that nevertheless influence the performance of these functions. For example, the general quality of stewardship and governance in a given context can affect the quality of stewardship and governance in the health system. Performance in other systems such as the educational system, the water and sanitation system, et cetera, will also influence the achievement of the intrinsic goals of health systems.

Performance is a relative concept and, in evaluating the performance of health systems, goal attainment has to be related to what could be attained in terms of worst- and best-case scenarios. Goal attainment must also be related to inputs. –Worst- and best-case scenarios will vary depending on the level of inputs or resources available to support performance. National wealth is an important factor that effects what can be achieved.

Intrinsic Goal attainment

Health

Sub-Saharan Africa with a population of almost seven hundred million, loses 164 out of every 1,000 children born before they reach the age of five. Deaths in the first month of life account for about a quarter of these deaths and out of every 1,000 children born, 41 die in the first month of life. Though sub-Saharan Africa counts

for approximately 11% of the world's population, it accounts for more than 25% of the world's newborn deaths and has 15 of the 20 countries in the world with the highest risk of neonatal death[8]. According to the WHO, out of 16 countries world wide in which the deaths of children less than five years of age increased in the 1990, 12 were in Africa[9]. There is variation in these statistics in the more than 40 countries that make up sub-Saharan Africa, though many cluster around the average[10]. There are some impressive performance improvements. For example, according to the report 'Opportunities for Africa's newborns[11]', Eritrea has seen an average annual reduction in deaths in children less than five years of 4% since 1990, despite having one of the lower per capita incomes in the region. Overall however, the good news stories are fewer than desired, and there is not much room for debate on whether or not the continent is lagging behind the rest of the world regarding health achievements.

Responsiveness

As soon as we arrived, we noticed the atmosphere in the village was different. It was tense rather than the usual relaxed 'no hurry' feeling that is characteristic of the rural communities

along the lower banks of the Volta river. Almost everyone in the village was dressed in black and an air of sorrow as well as anger hung over the village. A group of people were holding an agitated discussion.

We had been working for some time with these communities, trying to establish a functional primary health care system. The construction of the Akosombo hydroelectric dam in the nineteen sixties had converted the Volta River below the dam site from a relatively rapid flowing river with annual flooding of its banks into a still lake. The cessation of the annual flooding of the banks that was an important part of the fertility of the land affected the livelihoods of the predominantly subsistence farmers and fishermen of the lower banks of the Volta. No one had anticipated these problems and no legal contracts, agreements and provisions had been made to compensate the people and provide alternatives for the change in their habitat and livelihoods that followed the creation of the dam. The communities remained among some of the poorest in Southern Ghana.

We greeted the community elders, accepted the seats offered and then inquired why the village was so tense and agitated. "It is the staffs at the hospital who sometimes behave as if they were not people like us" the chief said, obviously angry despite his sorrow. "If I had the power I would take this case to court. Our son was very ill. We took him to the hospital. He was in a bad condition, but he was still alive when we arrived. There was no doctor. We were worried and one of the elders among us asked the nurses how long it would be before a doctor came to have a look at him. One of the 'small small' nurses- and there seem to be so many of them these days - who do not understand our traditions of courtesy to elders rudely told him to stop disturbing her. The doctor was playing tennis and had made it clear that he was not to be disturbed on any account. She was not going to be the one to disturb him and face his wrath. He would come later. What could we do? We were in their power. Our son had become God's property before the doctor came. Our son was very ill. If they had quickly called the doctor and attended to him promptly and treated us with respect and he had died anyway, then we would not have blamed them. But the way they treated us……"*

Responsiveness is the second intrinsic goal of health systems. People value a health system that responds to their legitimate non-health expectations. In an analysis of data from 41 countries in which questionnaires for the WHO multi-country survey on health and health systems responsiveness was administered by

* *Ghanaian euphemism for death*

interviewers, Valentine et al[12] found that overall, the domain selected by study respondents as the most important was prompt attention to health needs (41%). It was followed by dignity (22%). The data from Nigeria, the only country in sub-Saharan Africa among this group of 41, mirrored the general trends with 58% of respondents selecting prompt attention as the most important domain, followed by communication (21%) and then dignity (7%).

Fairness in financial contributions

"Doctor come quickly. You have to do something. That old woman is a witch". Matron was obviously agitated. "What is it?" I asked as I hurried after her. "She has tied her granddaughter's antibiotics in a corner of her cloth and is refusing to give them to us. She says they are too expensive". We got to the ward. The young woman who had recently delivered a baby and had been brought to us after the home delivery in the village was very sick and

restless, with a high temperature and getting delirious. She had been brought in late from one of those remote little villages we had never visited before, where cases usually came in very late and very bad. It looked like septicemia. Our limited laboratory could not do blood cultures, but the clinical signs were highly suggestive. In our opinion, the only hope for her lay in powerful but expensive modern antibiotics. The wizened old lady, her grandmother, with her faded cover cloth that had obviously seen many washes and was near rag status sat calmly by the bed oblivious to the agitation of the nursing staff. The young woman, obviously a family member, who stood by her, had a sickly looking young child on her back. I spoke to the old lady. "Mother, those medicines are the only hope we have that your grandchild will live. Why have you tied them in the corner of your cloth?" She replied with an impassive face. "This child will not survive. I have lived long, and I know death when I see it. She has crossed to where we cannot help her. The young ones were foolish and emotional to have spent so much money on this medicine. There are many mouths to feed and little to feed them with. I will return the medicines and collect the money." I tried to convince her that though her granddaughter was very sick, there was a chance she could be saved. The antibiotics held that chance, and every minute was important. Finally she gave us back the medicines. More from shame than conviction I thought. The girl died that night and we returned the unused medicines to the old lady to go and get back what money she could. Whenever I reflected on this case, which continued to periodically haunt me, I could not help but share the nurses' feeling of revulsion and conviction of "an unfeeling old witch". Until I moved out of clinical care and started working in public health in a poor rural district. I wondered again as I sat in forgotten little villages and observed people's day to day lives and the scarcity of cash in rural subsistence economies. I wondered. Had she really been an "unfeeling old witch" or a cynical old woman, hardened by a lifetime of grinding rural poverty into an unemotional pragmatism when confronted with potentially catastrophic out of pocket expenditure in a health system in which out of pocket fees at point of service use (user fees) were a major source of financing?

Fairness in financial contributions, the third intrinsic goal of health systems requires that "households should not become impoverished, or pay an excessive share of their income in obtaining neccesary health care" and that "poor households should pay less towards the health system than rich households[13]". In theory, the best way to achieve fairness in financial contributions to health services is to collect income-based funds from citizens through some progressive taxation mechanism, whether general taxes, social insurance or a combination; and to use these funds to

pay for services provided in relation to need at time of illness. Most wealthy countries have evolved health financing mechanisms based on this principle and attained reasonable levels of fairness in financial contributions to their health systems. On the other hand, many low and middle income countries (LMIC) face continuing challenges in evolving mechanisms to achieve fairness in financial contributions. These difficulties are related to factors such as scarce economic resources, low or modest economic growth, public sector constraints and low organizational and administrative capacity[14, 15].

Despite documented inequities or unfairness associated with out of pocket fees at point of service use (user fees)[16, 17, 18, 19, 20] they therefore remain a significant financing mechanism in many LMIC. User fees are clearly regressive, but as Gilson and McIntyre [21] observe, the importance of the resources they generate for keeping health systems in poor countries viable means that they cannot simply be done away with at the stroke of a pen.

In recent times, there has been a growing interest in health insurance as a fair financing mechanism in LMIC. - Given the difficulties of implementing classical social health insurance in small economies with large non formal sectors Community Health Insurance (CHI) has attracted a lot of interest[22, 23, 24, 25, 26]. Reviews of CHI[27, 28], show that in well performing schemes, CHI can contribute significantly to financial protection and access. However, many schemes are still recent, and achievements in relation to enrolment have been modest so far. CHI will at best perform in a complementary role. The government will have to define their place within the context of a national health financing policy that steers CHI to contribute to reaching the goal of universal financial protection.

Performance in the basic functions of health systems

To succeed in achieving their intrinsic goals, health systems need to create the circumstances needed to achieve intrinsic health system goals, by performing adequately the four basic functions of financing, resource generation, service provision and stewardship[29].

Financing

The health systems financing function involves the way in which revenue is mobilized and applied to support attainment of the intrinsic goals. Sub-functions of the financing function includes the way in which revenue is collected, the way and the extent to which it is pooled and the way it is applied in purchasing inputs or allocating funds to provision.

Resource generation

Resource generation is concerned with the production and distribution of the inputs or resources that are needed for goal achievement. These resources include human resources, infrastructure, equipment, tools and supplies as well as knowledge. Health systems in sub-Saharan Africa struggle with inadequate resource generation and distribution. A particular resource generation challenge that has attracted increasing attention in recent years is that of human resource. Many countries of sub-Saharan Africa continue to grapple with inadequate skilled human resources in terms of numbers, types and capacity as well as distribution and morale. These problems are exacerbated by a loss of highly skilled human resource to more developed economies. Clemens and Pettersson[30] estimate that approximately 65,000 African-born physicians and 70,000 professional nurses were working overseas in a developed country in the year 2000; and that these numbers represent about a fifth of African-born physicians and a tenth of African-born professional nurses in the world.

The reasons for low income country brain drain are complex and go beyond pull factors such as the gradient in salaries between the poorer and the richer nations of the world. There are also push factors, such as unstable political and socio-economic conditions, the unsupportive organizational environment of some organizations and institutions, lack of adequate equipment tools and supplies to work with, lack of career development opportunities, and inappropriate and inadequate use of human resource management tools. Quite different from the external brain drain that occurs when highly trained professionals are lost to developing countries, are complex issues around the morale, motivation and productivity of those who continue to work in developing countries. These factors sometimes make their skills ineffectively utilized and create a situation of low motivation and productivity. In the paraphrased words of a colleague from one of the countries of sub-Saharan Africa that I met at a meeting in Senegal "we are always talking about 'brain drain' – about those who leave the countries of the continent. We forget those who choose for one reason or the other to stay and face institutional, organizational and national challenges that end up making them 'brains in a drain'".

Provision

A story whose original source I do not have, tells of a man walking down a street with few and far between street lights who saw another man searching underneath one of the few street lights for something. He stopped and asked "You seem to have lost something". "Yes, I have dropped my keys" the man replied as he continued to carefully scan the area illuminated by the street light. "Can I help you look? Exactly where did you notice dropping them?" the passerby asked. "Oh I dropped them back there, in that dark portion of the street where the light is not so good" the man replied, as he continued looking. "Then should we not be looking there rather than here?" enquired the helpful passerby. "Oh no" the man replied. "It's too dark there and I don't have a torch. You need some light to look"

Service provision for preventive as well as clinical services has tended to receive relatively more focus and attention both within the countries of sub-Saharan Africa and internationally than the other basic functions of health systems. Despite the recent increasing interest in health systems, big multi and bilateral international funding programs like the Global Fund, GAVI, PMI, PEPFAR, as well as private funding such as the Bill and Melinda Gates foundation, are predominantly focused on service delivery, especially disease control. Like the man who, despite having lost his keys in the dark part of the street, preferred to look for them in the lighted part of the street because it was less challenging, there is a tendency both within countries and internationally to try to bypass giving serious and sustained attention to the issue of health systems in sub-Saharan Africa, as this is too challenging and a 'black hole' to be avoided. Yet, to borrow an excellent illustration from Reich et al[31] , "A health system supports specific activities in much the same way that a computers basic hardware and software support the ability to run specific programs. Once a computer (or a health system) is up and running, you can then successfully install and operate individual software programs (or specific single disease control programs). ….. sometimes advocates for disease control lose sight of the fact that they will be able to function effectively in a particular country only if the surrounding health system – …. is on hand and working well"

Stewardship

Stewardship involves "setting, implementing and monitoring the rules for the health system; assuring a level playing field for all actors in the system; and defining

strategic direction for the health system as a whole[32]". It is a function that closely affects the performance of the other three functions of financing, resource generation and provision. And yet it remains relatively neglected. Though some of the challenges that health systems in sub-Saharan Africa face are mediated by problems in the wider international context; there are many whose resolution lies within health sector stewardship and accountability structures of the countries themselves. As Prince Claus noted in his speech upon receiving an honorary fellowship from the Institute of Social Studies in 1988: "Much of the human suffering in developing countries cannot be attributed to global power structures, natural disasters, multinational companies, the World Bank, the IMF or other exogenous evil doers and easy scapegoats."

The catalogue of stewardship related problems in the low and middle income countries of sub-Saharan Africa include weak institutional and organizational management and capacity in policy making, coordination and advocacy. Too often the making of key policies that will affect many is controlled by a small group of elite with little consultation and engagement of those who will eventually implement the policies as well as the key recipients who the policies affect most. The result in many cases are polices that cannot be converted into operational programs that make a difference or that do not yield the desired results even if they are converted. The problems are further complicated by weakness in civil society engagement and ownership of programs combined with weak government and bureaucratic accountability to the people for whom the programs are designed. Some political decision-making is inevitable in organizations and political considerations can be seen as a part of evidence based decision-making. No matter how scientifically and technically sound a policy and program choice appears to be, it is unlikely to be endorsed or effectively implemented if it is politically, economically and socially unacceptable within the context of the country and the local situation.

However, when decision-making is allowed to be dominated by individual, institutional and organizational politics to the extent that evidence is largely disregarded, then organizations tend to become dominated by fiefdoms that do not necessarily advance the real objectives of the health system.

International problems that can compound LMIC health system stewardship problems in sub-Saharan Africa include weak commitment or unwillingness to commit fully to integrated funding approaches by development partners. Some development partners may also have a rather predetermined non-consultative approach that is not helpful. They may be inflexible in their ability to adjust and adapt to the real situation on the ground and the real help needed. In the face of resources and capacity constraints, proper understanding and analysis of the implications of accepting these approaches and weaknesses in negotiating ability; some countries, institutions and organizations passively accept these imposed plans and approaches despite their limited usefulness.

Contextual issues and determinants of health outside the health system

By the end of the nineteen seventies, Ghana was at the rock bottom of economic decline and social instability after years of economic mismanagement and military government. A new civilian government had been elected into power with high hopes after Flt. Lt. Rawlings first military coup of June 1979 and his brief six month rule before voluntarily handing over. I entered first year medical school in these turbulent times. The civilian government of President Hilla Liman struggled with the mess it had inherited. Student unrest was high and when a second military coup by Flt. Lt. Rawlings overthrew Liman's government in December 1981, there was much support from student leaders for the coup and the far left socialist ideology of its organizers. Many student leaders became part of the new military government. The government ordered closure of the universities. Students were to assist the revolution by helping to bring the cocoa, locked up inland to the ports. My parents were living and working in Sokoto, Northern Nigeria. They were part of the massive exodus of skilled Ghanaians fleeing economic failure. After 3 years of medical school I did not know what my future was going to be. I joined my parents in Northern Nigeria and spent the next year living in Sokoto. It was boring and depressing sitting at home wondering when and if the universities would open, and if I would ever get the chance to complete medical school. I asked our neighbor, a pleasant Indian lady gynaecologist who worked in the Sokoto hospital if I could tag along behind her and learn and assist in any way that was useful. Being the kindly woman that she was, she readily allowed me to tag along behind her with my ignorance. She had a ward full of mostly very young girls with vesico-vaginal fistulas, waiting for treatment. As I spent time on the ward and learnt the stories of the girls, some of the links between culture, sociological norms and health hit me in practice rather than theory for the first time. They had been betrothed

and married as a family affair, often while still children, and eventually sent into marriage before they had fully attained adulthood. It was the accepted norm in their communities. Teen pregnancy had followed, with obstructed labor since for many of them the growth from adolescence to adulthood that would make normal delivery possible was not completed. They were not ready to have a baby. Further compounding the problem, since home delivery by traditional birth attendants was the norm; they were only sent to hospital as a last desperate resort after days of obstructed labor. The head of the baby pressing on the tissues of the pelvis over a long period had cut off the blood supply and caused the tissues to die. The end result was a vesico-vaginal fistula (hole) in addition to a dead baby and hours of suffering in a futile labor. They leaked urine continually. A few leaked stools as well. The condition converted them into social outcasts. The ward was now their home and the gynecologist their hope that their fistula would be treated and they could rejoin society once more. Sometimes the treatment was simple – sometimes it was complicated depending on the type and extent of damage. Despite their problems, they were a cheerful group and the ward had become a kind of community for them given their long stay. Whenever a fistula could be repaired, they rejoiced with their colleague who could now return to become part of society and gave the doctor a standing ovation. Whenever it failed, as it sometimes did, they wept with their colleague but also remained hopeful that, by the grace of God, it would work next time.

Health is affected by the social, economic, political and cultural context in which people live their lives as well as the individual life choices they make. This has been clearly shown by the extensive work on the social determinants of health and health inequalities[33, 34]. There are also systems outside of the health systems such as the educational, water and sanitation systems whose performance affects achievement of intrinsic health goals.

A major challenge in assessing and improving health systems performance is the extent to which the health system should be held accountable for the social determinants of health or for performance in other systems whose output can affect intrinsic health goal attainment. The health system cannot realistically be held completely accountable for these contextual issues and determinants. However, it is probably fair to hold the health system accountable for effective advocacy to influence the determinants of health outside the health sector.

Forgiving and Remembering: Managing and transforming failure

There are no easy or ready-made approaches to strengthening health systems in sub-Saharan Africa, and the sheer magnitude of the task can be daunting. However, in the words of Eleanor Roosevelt "It is better to light a candle than to curse the darkness". In my opinion, the first step towards transformation is reflection, analysis and understanding of whose success and whose failure we are concerned with.

Whose success and whose failure?

A semi literate housewife turned up in the second stage of labor at the delivery unit of a small health centre run by midwives. For many of the poor rural and peri-urban communities in the surrounding area, the health centre was the only public sector facility within one to two hours of travelling. The midwives at the health centre had been at post for over 10 years and had a lot of practical experience from years of working in a relatively neglected health centre. During their over 10 years in this post, there had been almost no technical supervision by more senior officers and no systematic arrangements for regular continuing medical education to keep their knowledge and skills up to date or to ascertain the quality and availability of essential equipment, tools and supplies. Over the years, the running of the maternity unit had taken a semi-private character with the midwives selling their own medicines and delivery items to mothers and collecting unauthorized fees – despite the existence of a dispensary in the clinic. The head of the clinic, a nurse clinician, found it difficult to control the staff and these practices, and given that there did not appear to be any particular reward beyond unpopularity for aggressively trying to do so, had relapsed into a 'see no evil, hear no evil' position. Partograph charts with which to monitor the progress of labor and the state of mother and baby were available, but were not being used. There was no proper area designated to resuscitate newborns, no suction machine, no ambu bag to provide assisted respiration to newborns in distress, no oxygen cylinder, no radiant heater or even cot sheets and blankets for the newborn – other than what the mothers brought; and no guidelines or criteria for referral in the maternity unit. Record keeping was poor since no one regularly checked or appeared to be interested in the records. The regional referral hospital that had an obstetrician and a pediatrician as well as small neonatal care intensive unit was about one to two hours drive away, depending on the time of day and traffic. It was very congested and overloaded with infrastructure that was built over 50 years ago, having meanwhile become inadequate for the increased

population. Mothers having to sit on benches or mats on the floor with their newborns was a regular occurrence. To be referred there was sometimes seen by clients as a major inconvenience.

The client had had two previous deliveries, one at home and one at a private maternity home. She had been using herbs at home for antenatal care; and had made only two antenatal visits throughout the pregnancy. Though she had ruptured membranes at home at around 7.30am, she arrived at the centre over 8 hours later, around 4.00pm in the second stage of labor, with dark green meconium stained fluid suggesting the baby was in distress and swollen edematous vulva and cervix suggesting prolonged somewhat obstructed attempts to push the baby out at home before finally deciding to go to the health centre. It appeared the decision to finally go to the health centre was related to the failure of labor to progress normally at home as anticipated rather than a primary intent to deliver there. The baby had a compound presentation with one extended arm. This appeared to be the cause of the delayed second stage. Because of their practical midwifery skills and experience in handling difficult deliveries without any ready assistance to call on, the two midwives on duty managed to successfully deliver the baby within 10 minutes despite the difficult compound presentation. However the baby was severely asphyxiated, hardly breathing and limp with no cry at birth. The apgar score, whose maximum for a 100% healthy baby is 10; was 2 at 1 minute. One midwife used the only very basic equipment available – a bulb syringe and a small mucous extractor – to suction the mucous and meconim that filled the baby's nose and mouth. She then covered the baby's mouth with gauze and used mouth to mouth resuscitation to get him breathing since there were no ambu bags to resuscitate with. This was heroic and potentially risky, but probably the only option available in the deprived circumstances under which the midwives operated. It definitely helped to save the baby's life immediately after delivery; and the apgar score rose to 4 at five minutes. The midwives were however very rude and impatient with the parents of the baby – obviously irritated at the late presentation of a difficult case in the afternoon when they were already tired. In addition to the official user fees at the health centre, they charged the parents their own illegal user fees and sold them amoxicillin syrup for the baby from their own personal stock of medicines rather than the official health centre dispensary stock of medicines. No referral note was given to take the baby to the neonatal intensive care unit in the regional hospital. The midwives said they verbally advised the parents to take the baby to the referral hospital. The parents insisted they were asked to take the baby home and continue administering the antibiotic the nurses had sold to them. The baby died at home a few hours after delivery, and the parents reported the case at the police station and requested that the midwives

be charged for 'murder' of their baby. In their perception, the death of the baby was due to the medicine they were given to administer. Anyone who had been as rude and unpleasant to them as the midwives had been and charged so many illegal fees was capable of selling them the wrong medicine just to make more money.

In the national and international public health statistics, the death of this newborn will be just one more addition to the numbers that make up sub-Saharan Africa's high deaths of newborns and infants. In the records of the nurses and midwives council, it was investigated as a case of clinical malpractice and the midwives were sanctioned for their rudeness, illegal fee collection and sale of medicines. At this point, this case could end up with many other cases in the archives – forgotten.

And yet, it is sometimes the seemingly small and disregarded details of events like this one that hold the key to bigger events. A system cannot be understood and changed without understanding the parts and the interrelatedness of the parts. A poem we read in primary school went along the lines of "For the want of a nail the shoe was lost, for the want of a shoe the horse was lost, for the want of a horse the rider was lost, for the want of the rider the battle was lost. And all for the want of a horse shoe nail." Similarly there was a hymn that went: "Little drops of water, little grains of sand, make the mighty ocean and the beauteous land".

Who contributed what towards the loss of this baby and why? Was it the mother who came so late and appeared not to know much about the factors that enhance newborn survival? And why had she not been empowered with adequate knowledge? What was the contribution of the midwives who mixed heroic behavior with negligence, rudeness and illegal fees and why did they behave that way? How did the weak local health center governance systems, whose chronic failure became acute failure, contribute to these multiple problems? This case attained visibility because the parents felt something was not right, and decided to lodge a very visible protest. They may not have fully understood all that was not right, but they made the problem visible from their perspective. How many other similar cases did not attain visibility but still happened? Setting up mechanisms for rapid detection and close investigation of interlinked series of events – sometimes

remote from each other in time and place and nevertheless all feeding the same end result – are needed to inform action if health systems failure is to be transformed.

Forgiveness

Beyond analysis and understanding, managing and transforming failure requires forgiveness of a genuine error. Genuine error is error that occurs because people are not fully aware or have not fully recognized and understood the implications of actions and choices. On the other hand, repeating the same error in health systems over and over again even after the error is evident from the past, persistent delays in noticing, reporting and dealing with error, or deliberate refusal to notice and address error, suggest serious professional public health practice ethical and moral lapses. Error is no longer 'genuine' and requires a more rigid and unforgiving approach.

This address is focused on transforming 'genuine' error. Without forgiveness of 'genuine' error, people may be tempted to be less than fully transparent in facing up to health systems failure. They may be unwilling to contribute openly and objectively to analyzing and understanding the contributory factors and causes of action that are needed to enable effective learning for future success. Failures may be manipulated and presented as 'successes'[35]. Forgiveness stops genuine error from crippling the future of individuals as well as professional performance and development. There is a need to 'forgive' genuine error, because - to put it in terms of an old adage - 'to err is human'.

Remembrance

Forgiveness should go hand in hand with remembrance. Remembrance ensures that the same error is not repeated over and over such that the genuine error is converted into serious ethical and professional lapses. Remembrance requires a conscious effort to keep history and organizational memory alive. When the past is allowed to be forgotten, we consume too much time in the present continuously relearning and reinventing what has been learnt and invented by those before us. It then becomes impossible to build upon the lessons of the past and to improve. We can easily find ourselves in the situation best described in the ancient words of Solomon: "What has been will be again, what has been done will be done again; there is nothing new under the sun. Is there anything of which one can say 'Look!

This is something new'? It was here already, long ago; it was here before our time. There is no remembrance of men of old, and even those who are yet to come will not be remembered by those who follow"[36]

Continuous quality improvement: managing and transforming failure

The philosophy and principles of Continuous Quality Improvement (CQI) or Total Quality Management (TQM) need to be applied to health systems if transformation is to occur. CQI is a management philosophy as well as a process that focuses on systems improvement. Rather than a static 'gold standard', it aims at continually evolving and improving quality standards in response to the environment. To borrow a sports metaphor, it involves the raising of the bar incrementally after successful jumps. CQI also emphasizes the need to analyze the whole system providing a service or influencing an outcome and to analyze the multiple root causes of observed system phenomena, rather than just focusing on individual components

CQI focuses on addressing common or systemic causes of variation in performance. Other elements of CQI philosophy that are relevant to health system improvement include its emphasis on a customer focus, data-driven analysis, involvement of implementers, solution identification, process optimization, continuing improvement and organizational learning[37, 38].

Transformation must also take into account the uniqueness of each national and sub-national setting. As Ntoburi et al[39] suggest, there is a real danger of being preoccupied with the global picture and missing the individual countries that make up the global pictures. Without strong efforts to transform health systems within individual countries, transformation in sub-Saharan Africa as a whole will not occur. The traditional proverb warns against 'not seeing the woods for the trees'. It is however very possible to have the opposite problem of 'not seeing the trees for the woods'.

In conclusion

The complexity of systems makes any effort to improve the performance of health systems a difficult and challenging endeavor requiring multi-disciplinary analysis and effort. However, to avoid addressing health system issues simply because of the difficulties and challenges is to render it impossible to realise any sustainable achievement of improvement in health outcomes and a reduction in the inequalities in health outcomes. Moreover, difficult and challenging is not the same as impossible. I have hypothesized in this address that understanding the goals and the functions of health systems that make goal achievement possible; understanding and forgiving the genuine inadequacies and failures of the past and present and yet remembering them as part of learning for improvement; and application of the philosophy of continuous quality improvement can help to transform health systems in sub-Saharan Africa.

Words of Gratitude

Rector magnificus,

I cannot conclude my lecture without expressing my sincere thanks and appreciation to Utrecht University and its Executive Board for the honour bestowed upon me by this appointment as holder of the Prince Claus Chair in Development and Equity for 2008 – 2010. I would also like to specially acknowledge Professor Diederick Grobbee, director of the Julius Centre of the UMC Utrecht and all the staff of the Centre for the warm welcome and continuous support they have given me. The short time I have already spent at the Centre has been a pleasure and a privilege and I am looking forward to our continued collaboration.

I also wish to acknowledge Professor Joost Ruitenberg, Chair of the NACCAP programme committee, and Dr Judith de Kroon, with whom I have worked for several years, for believing in me enough to suggest – as I discovered after the event – that I be considered a candidate for this position.

I would also like to give a special word of thanks to the Curatorium of the Prince Claus Chair. I recall my first meeting with Princess Máxima in May 2008 and wish to pay tribute to her. The graciousness and warmth of her reception, the interesting wide-ranging discussions and her naturalness impressed me. The Netherlands is privileged with its princess.

My faith is an integral part of who I am, and I must thank and acknowledge God for my life, my family and everything that He has made me to be and all the wonderful people he has brought into my life and continues to bring into it.

In Ghana, we traditionally say: 'When you hear the first cock crow at dawn, remember I am saying thank you'. In big urban areas in Ghana, this traditional expression of thanks increasingly does not hold anymore because for there are no cocks to crow. I think it is the same in Utrecht. So I will modify our traditional thanks and say 'If you hear the first cock crow at dawn – but if not, when you hear your alarm – remember I am saying thank you'.

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Irene Akua Agyepong, holder of the Prince Claus Chair in Development and Equity 2008 – 2010, is Regional Director for the Ghana Health Service in the Greater Accra region and part-time faculty to the School of Public Health of the University of Ghana College of Health Sciences. She trained as a physician at the University of Ghana Medical School and received her Masters degree in Community Health from the University of Liverpool School of Tropical Medicine and her doctoral degree in Public Health (Health Policy and Administration/Public Health Leadership) from the School of Public Health of the University of North Carolina at Chapel Hill (UNC-Chapel Hill).

Her primary research focus concerns health policy and health system development in low and middle income countries, focusing on countries in sub-Saharan Africa. She is particularly interested in policy analysis, effective policy development, the implementation and upscaling of proven effective health interventions, health financing, leadership, and organisational development and management.

Irene Akua Agyepong is a member of the programme committee of the Netherlands-African partnership for Capacity development and Clinical interventions against Poverty-related diseases (NACCAP), the Scientific and Technical Advisory Committee of the Alliance for Health Policy and Systems Research of the WHO, and the steering committee of the newly-formed Global Health Policy and Health Systems Research Programme of NWO (Netherlands Organisation for Scientific Research). In 2008, she received the Arnold Kalunzy distinguished alumni award of the Public Health Leadership programme of the UNC-Chapel Hill School of Public Health.