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Table of Contents

Forward

Glossary of Terms

Part I: Overview
  Global Health Themes
  Program Expectations

Part II: Country Profiles
  The Gambia
  Senegal

Part III: Cross-Cutting Global
  Health Issues

Part IV: Being in the field

Part V: Lessons Learned

Part VI: Meet & Greet

References
Sculpture at Sandele Eco Lodge, The Gambia

MD/MPH Students Leaving Senegal

Entering the Gambia
FORWARD

The Drexel University School of Public Health (SPH) improves the health of communities and populations through innovative education and training programs, cutting-edge research and scholarship, and cooperative partnerships with other civic, business and academic institutions committed to solving our world’s most difficult health challenges. Our approach to global health training integrates social justice, human rights, and field practice in global public health as a model for interdisciplinary collaboration and community engagement around the world. As a part of our mission to educate and train new leaders, scholars, and researchers to address current and emerging global public health issues facing our world today, the Drexel SPH Global Health Initiative places a priority on strengthening public health systems and the public health workforce globally by working closely with foreign ministries of health, NGOs, academic institutions and other international partners to develop capacity-building, training, and research collaborations.

It has been an honor to serve as the mentor and coordinator for the training of this new generation of global health practitioners dedicated to improving health and health equity worldwide, working in partnership to achieve excellence in global health and the translation of knowledge into policy and practice. This book represents the culminating experience project for the students enrolled in the summer 2013 offering of PBHL 708- The Global Health Integration Module, a faculty-led, field-based course that provides students with a mentored training experience that requires synthesis and integration of knowledge, the application of theories and principles in practice in the field, and the demonstration of competence in global health and international development. During summer 2013, the course was held in Senegal and The Gambia, in Sub-Saharan Africa; the location, geographic focus and global health theme of this course rotates, based on course enrollment and international site availability.

I am grateful to so many of our partners and collaborators for their support and engagement with our global health students, including: The faculty, administration, and students of the University of The Gambia and the Gambia College School of Public Health; UTG GeoHealth Center; Goree Island Health Center; The Embassy of The Gambia; The Permanent Mission of the Republic of The Gambia to the United Nations; the Ambassador Extraordinary and Plenipotentiary of the Republic of Senegal to the United States; the Republic of The Gambia Ministry of Health & Social Welfare; The Gambia National Nutrition Agency; Traditional Medicine and Homecare Foundation of Ghana-town; The Republic of The Gambia Department of Water Resources; the merchants of Albert and Bakau markets; Drexel University Office of International Programs and Drexel Study Abroad; Drexel University MD/MPH Program, Drexel Travel Health, the Greater Philadelphia Regional Louis Stokes Alliance for Minority Participation; Palace Travel; West African Tours; Sandele Eco Retreat; Tinogona Foundation; Power Up Gambia; Kebba Badjie and the staff of Sulayman Junkung General Hospital; the staff of Brufut, Sukuta and Gunjur Health Centers; Baboucarr Faal, Adama Sowe, Amadou Ceesay, Edrisa Sanyang, Alagie Jatta, Abiodun Oluyomi, Terera Trent, Makha and Oumou Diop, Ralph Edwards, James Mock, and the people of Senegal and The Gambia.

Shannon P. Marquez
Academic Dean & Director of Global Public Health Initiatives
Drexel University School of Public Health
Glossary of Terms

**Capacity building/strengthening** "Capacity building is the development of knowledge, skills, commitment, structures, systems and leadership to enable effective health promotion. It involves actions to improve health at three levels: the advancement of knowledge and skills among practitioners; the expansion of support and infrastructure for health promotion in organizations; and the development of cohesiveness and partnerships for health in communities." (Smith, Tang and Nutbeam, 2006)

**Human capital** The cumulative skills, knowledge, and other human traits that are used to create economic value, and which is harnessed through investments in education, training, and health (Becker, 2008).


**Millennium Development Goals** Eight international development goals developed at the 2000 Millennium Summit of the United Nations (UN). All UN member states have committed to help achieve these goals by 2015. The goals are eradicating extreme poverty and hunger; achieving universal primary education; promoting gender equality and empowering women; reducing child mortality rates; improving maternal health; combating HIV/AIDS, malaria, and other diseases; ensuring environmental sustainability; global partnership for development (United Nations, 2013).

**Preventive Health** An approach to health care that emphasizes "promoting health, preventing disease, and managing the health of communities and defined populations." (American College of Preventive Medicine, 2013)

**Primary Health Care Model** An approach to health care, promoted by the World Health Organization (WHO), that attempts to provide essential, universally accessible care that is based on practically, socially, and scientifically sound methods. Moreover, it is concerned with reducing health disparities, organizing services around people's needs and expectations, integrating health policy into all social sectors, developing policy through a collaborative model, and increasing community wide participation (World Health Organization, 2013).

**Public Health System** "All public, private, and voluntary entities that contribute to the delivery of essential public health services within a jurisdiction." (Centers for Disease Control and Prevention, 2013)

**Total health expenditure** Total health expenditure is the sum of public and private health expenditure. It covers the provision of health services (preventive and curative), family planning activities, nutrition activities, and emergency aid designated for health but does not include provision of water and sanitation (The World Bank, 2013).

**Traditional medicine** "The sum total of the knowledge, skills, and practices based on the theories, beliefs, and experiences indigenous to different cultures, whether explicable or not, used in the maintenance of health as well as in the prevention, diagnosis, improvement or treatment of physical and mental illness." (Qi, 2013)
Traditional Medicine from an Herbal Healer

Traditional Birth Attendant

Millennium Development Goal #1 - Eradicate extreme poverty and hunger.

The Gambian Public Health System - based on primary care delivery

World efforts to eradicate disease. Drexel students listen to a presentation by local experts at the Regional Health Directorate Western Division in Brikama.

Capacity Building through education. Student Presentation at the University of the Gambia
Part I: Overview
Drexel Global Health Certificate Program

The Drexel University School of Public Health Global Health Certificate Program strives to prepare students with the skills and knowledge needed for global engagement within the field of public health. The certificate program along with the Master in Public Health degree program Drexel offers follow the seven ASPH foundational global health domains which include:

**Capacity Strengthening** -- the broad sharing of knowledge, skills, and resources for enhancement of global public health programs, infrastructure, and workforce to address current and future global public health needs.

**Collaborating and Partnering** -- the ability to select, recruit, and work with a diverse range of global health stakeholders to advance research, policy, and practice goals, and to foster open dialogue and effective communication.

**Ethical Reasoning and Professional Practice** -- the ability to identify and respond with integrity to ethical issues in diverse economic, political, and cultural contexts, and promote accountability for the impact of policy decisions upon public health practice at local, national, and international levels.

**Health Equality and Social Justice** -- the framework for the analysis of strategies to address health disparities across socially, demographically, or geographically defined populations.

**Program Management** -- the ability to design, implement, and evaluate global health programs to maximize contributions to effective policy, enhanced practice, and improved and sustainable health outcomes.

**Socio-cultural and Political Awareness** -- the conceptual basis with which to work effectively within diverse cultural settings and across local, regional, national, and international political landscapes.

**Strategic Analysis** -- the ability to use systems thinking to analyze a diverse range of complex and interrelated factors shaping health trends to formulate programs at the local, national, and international levels.
Field Experiential Learning Opportunities for Global Health Studies

Drexel University works to create a population of students that maintain both academic and professional proficiency. The coupling of rigorous academic training with practical in-the-field experience is a keystone in all Drexel University degree programs. The Certificate in Global Health, established by the Drexel University School of Public Health, prepares students from a variety of disciplines to work in changing environments with diverse populations and to respond to challenges created by permeable geographic and cultural boundaries. The certificate program strives to offer a comprehensive understanding of global conditions, both in developing and industrialized countries and regions, by incorporating innovative approaches to online education and on-the-ground field work.

SeneGambia Summer 2013 -- The Summer 2013 Global Health Field Experience took place in Senegal and The Gambia, and was led by Professors Al Jatta, James Mock, Tererai Trent and Shannon Marquez.

The overarching global health theme for the trip was Maternal and Child Health (MCH) in Senegal and the Gambia. Through exploring this theme students furthered their understanding of important issues such as: causes of morbidity and mortality in the region, HIV/AIDS, female circumcision, rural and agricultural health, food security, essential drugs for neglected tropical diseases (NTDs), water, sanitation, and hygiene (WASH).
The Drexel Summer 2013 Experience: Global Health Themes

The themes of the field experience were focused around three cross cutting issues:

1. The Public Health Systems in the Gambia and Senegal
2. Monitoring and Evaluation of major programs/initiatives taking place
3. Ethical challenges within the field

Improving Maternal and Child Health through Health Systems Strengthening in Senegal

The rates of infant and under-five mortality have decreased, however the numbers are still high enough to be a cause for concern. They can be reduced by strengthening the health systems to efficiently address preventable causes of death (i.e. malaria, diarrheal diseases), immunization coverage, and tropical diseases which place a heavy burden on the health care system.

Monitoring and Evaluation (M&E) of major programs and initiatives taking place

Senegal has implemented a number of programs to monitor and evaluate Maternal, Neonatal, and Child Health (MNCH) as well as Family Planning (FP) and Malaria treatment. The Gambia integrates M&E into the health system by means of visits to health and sanitation sites by senior officials and other ministry programs.

Ethical Challenges

Our short term educational experience presents us with ethical challenges that we must be aware of and appropriately respond to. Primarily, it is crucial to understand our own position within the cultural system in which we seek to learn and work, and understand that our backgrounds and biases can facilitate limitations. Further, within the context of the host country, ethical considerations should be made for topics such as: education, culture, gender, and customs (including the use of traditional medical practices).
The Drexel Summer 2013 Experience:
Program Expectations

"I am eager to learn about how people from other countries manage health issues. I suspect we can learn much from other people’s practices ... As someone who aspires to become a public health physician, I think it’s important to have a globally informed framework for treating people here." -- Frances Adachi

"I hope that the field experience in The Gambia and Senegal will help reinforce the methodologies I’ve learned in the classroom as well as provide me with the opportunities to explore the differences in maternal and child health issues there versus what I’ve seen and experienced in the past."
-- Triza Brion

"I have a strong interest in effecting change regarding health disparity through public policy. With regard to the Senegambia experience, I’m simply coming in with an open & eager mind, excited to learn as well as to see what part I might help play in the future."
-- Star Tiko-Okoye

"My interest is in Maternal and Child Health care. I would like to use my experience to help set up or evaluate MCH programs in developing countries especially in Zimbabwe. I hope to learn different ways of providing integrated MCH services from the experience in Gambia and Senegal."
-- Catherine Gumbo

"I hope to get a better perspective on how public health issues are identified and addressed in these countries. I would also like to understand how the global community is able to help change disease outcomes in these countries in sustainable ways. I would like this experience to strengthen my knowledge on MCH and provide a deeper understanding on the impact of poverty on women and children in low-to-middle income countries."
-- Ashley Brown
Part II: Country Profiles - The Gambia

The Gambia at a glance

Full name: Republic of The Gambia

Major religions: Islam, Christianity

Population: 1.8 million (UN, 2012)

Life expectancy: 58 years (M), 60 years (F)

Capital: Banjul

GDP: $3.459 billion

Area: 11,295 sq km (4,361 sq miles)

GDP growth rate: 3.9%

Major languages: English (official), Mandinka, Wolof, Fula

GDP per capita: $1,900

Monetary unit: 35 dalasi = $1.00

Main exports: Peanuts and peanut products, fish, cotton lint, palm kernels

Politics: The Gambia has been relatively stable under the rule of Yahya Jammeh, who came to power via a bloodless coup in 1994

Economy: One of Africa's smallest countries has few natural resources and is highly dependent on peanut exports
Gambia Profile Continued

**Geography**

The Gambia is located in western Africa, bordering the North Atlantic Ocean and Senegal. It is the smallest country on the continent of Africa, estimated to be slightly less than twice the size of Delaware. The climate is tropical, with hot and rainy season occurring from June to November and the cooler and dry season occurring from November to May. Because of its unique geography, The Gambia is seen as an important transit point for drug smugglers as it had been for the slave trade.

**History**

The Gambia gained its independence from the UK in 1965. Geographically surrounded by Senegal, it formed a short-lived federation of Senegambia between 1982 and 1989. In 1991 the two nations signed a friendship and cooperation treaty, but tensions have flared up intermittently since then. (CIA World Factbook)

President Yahya Jammeh seized power in a bloodless coup in 1994 where he overthrew the president and banned political activity. A new constitution and presidential elections in 1996, followed by parliamentary balloting in 1997, completed a nominal return to civilian rule. Jammeh has been elected president in all subsequent elections including most recently in late 2011. (CIA World Factbook)

The Gambia is one of Africa’s smallest countries and, unlike many of its West African neighbors, has enjoyed long spells of stability since independence. However, stability has not translated into prosperity. Despite the presence of the Gambia river, which runs through the middle of the country, only one-sixth of the land is arable and poor soil quality has led to the predominance of one crop - peanuts. This has made The Gambia heavily dependent on peanut exports and is a hostage to fluctuations in the production and world prices of the crop. Consequently, the country relies on foreign aid to fill gaps in its balance of payments. (BBC Monitoring)

President Jammeh wants to turn The Gambia into an oil-producing state. He says this could usher in a “new future”. However, the country has yet to strike crude oil. Tourism is an important source of foreign exchange, as is the money sent home by Gambians living abroad. Most visitors are drawn to the resorts that occupy a stretch of the Atlantic coast. (BBC Monitoring)
1. Banjul: Visit the National Museum, which has interesting ethnographic displays, then admire the colonial architecture in the area near July 22nd Square and climb to the top of Arch 22 for great views over the city. You can also shop in Albert Market, the city’s lively open-air bazaar, for an illuminating glimpse of daily life. (World Travel Guide, 2013)

2. Makasutu Culture Forest: A beautiful forest park where you can learn about local medicinal plants and woodland fauna. You can also take a boat trip by dugout canoe and enjoy a spirited display of local-style music and dance. (World Travel Guide, 2013)

3. Wassu stone circles: In eastern Gambia, catch sight of the fascinating circles of standing stones around Wassu, the most ancient man-made structures in the country, which date from 1200 years ago. The origin of these megalithic circles, which stand between one meter and two and a half meters tall, is shrouded mystery but they are thought to mark the prehistoric burial grounds of a society long-since vanished. (World Travel Guide, 2013)

4. Beaches: Gunjur and Kartong are southern Gambia’s most pristine beaches and home to a number of eco-retreats. Alternatively visit Kotu, the best beach along The Gambia’s main resort strip. (World Travel Guide, 2013)
U.S. / Gambia Relations
During World War II, Gambian troops fought with the Allies in Burma. The Gambia's capital city served as an air stop for the U.S. Army Air Corps and a port of call for Allied naval convoys. The Gambia became independent from the United Kingdom in 1965. President Yayah Jammeh took power in a military coup d’etat in 1994, and has remained in office since.

Presidential elections have been held every 5 years since 1996. U.S. policy seeks to build improved relations with The Gambia on the basis of historical ties - mutual respect, democratic rule, human rights, and adherence to United Nations resolutions on counterterrorism, conflict diamonds, and other forms of trafficking. (Department of State, 2013)

U.S. assistance supports democracy, human rights, girls' education, and the fight against HIV/AIDS. In addition, the Peace Corps maintains a large program with about 100 volunteers engaged in the environment, public health, and education sectors, mainly at the village level. The United States also provides limited military assistance to The Gambia. (Department of State, 2013)

The Gambia Infrastructure
Some 60% of the population, mainly rural, are considered poor, and high levels of unemployment in urban areas have contributed to increasing urban poverty. Significant gains have been made in gender parity, education, water and sanitation, and moderate gains in health services (Food and Agriculture Organization of the United Nations, 2013).

There are over 2,700 kilometers (1,678 miles) of road in the Gambia, 35 percent of which are paved. Roads in and around Banjul are mostly sealed. Unsealed roads are impassible in the rainy season. The road network is being improved, particularly north of the river with a view to linking up with routes in Senegal (Encyclopedia of the Nations, 2013). The Gambia River runs the entire length of the country east to west and provides a vital communications link for cargo and passengers. The principal sea port is Banjul, serving the international and river trade, and Gambia’s exports, mainly groundnuts, are shipped from there (Encyclopedia of the Nations, 2013).

The Gambia’s economy is primarily agrarian, with agriculture employing about 70% of the labor force and accounting for 30% of GDP. Some of the major challenges The Gambia faces include low human and institutional capacity at all levels, high levels of waste, especially industrial effluent, and a lack of appropriate waste management systems, and also poor sanitation. (Food and Agriculture Organization of the United Nations, 2013).

Resources for energy production are extremely limited. Electricity supply is entirely reliant on diesel generators. All petroleum products are imported. Wood is used for domestic fuel supplies, but government policy emphasizes conservation of the forest reserves. Alternative energy sources are being developed. The use of groundnut shells for fuel and solar energy output is expanding (Encyclopedia of the Nations, 2013).
**Global Health in The Gambia**

The Gambian government’s philosophy is “health is wealth” because it believes that health, along with education and nutrition, is considered as one of the key elements of human capital stock formation. Therefore, it has employed a health policy that aims to raise the standard of living of The Gambian population by transforming The Gambia into a dynamic middle-income economy. This health policy is in line with the Vision 2020 and the Millennium Development Goals (MDGs), the Gambia National Development Strategy (2012-2015) and Investment Program – The Program for Accelerated Growth and Employment (PAGE) (National Health Policy - Republic of The Gambia, 2012).

Their main goals include achieving a three-quarters decline in maternal mortality and a two-thirds decline in mortality among children under five, halting and reversing the spread of HIV/AIDS and providing special assistance to AIDS orphans (National Health Policy - Republic of The Gambia, 2012).

Implementation of policy measures will certainly have an impact on reducing morbidity and mortality from major diseases, promote healthy lifestyles, and reduce health risks and exposures associated with negative environmental consequences. It provides basis for an institutional and legal framework for implementation of policy measures (National Health Policy - Republic of The Gambia, 2012).

**Public Health System in The Gambia**

The public health system in The Gambia is based on a primary/preventive health care model that is community based and builds community capacity for health (Dixey & Njai, 2012).

Public Health Worker at the Brufut Health Center showing us the blue patient record sheet that tracks maternal and child health visits to the center.
The three tiers that comprise this system are:

1) Primary care at the base with 492 health posts (village and community clinics);

2) 36 health facilities (minor and major health centers) and 221 “trekking” or remote sites at the secondary level;

3) Three hospitals provide care at the tertiary level.

The secondary level is complemented by private and non-governmental organization run facilities.

The public health service includes 1477 beds, 211 physicians and dentists, 8 pharmacists, 655 nurses, among other staff.

This translates to roughly 1.1 physicians and 8.7 nurses/midwives per 100,000 population.

In addition to these health care providers, health extension workers also participate in disseminating health information, including village health workers and traditional birth attendants (Dixey & Njai, 2012).

This public health system is overseen by the Department of State for Health and Social Welfare which is tasked with providing comprehensive health care services, especially to the “least privileged” (World Health Organization [WHO] Global Workforce Alliance, n.d.; Ministry of Health and Social Welfare, n.d.). This system suffers from inadequate capacity, staffing shortages, and high attrition (Dixey & Njai, 2012); however, The Gambia’s health system benefits from a level of integration, community partnership, and preventive care success that the American system would do well to study and appreciate.

Sign in a local health center, Tanjih
The Gambian approach to health care is based on primary/preventive care that is community based. Examples of community based intervention programs include the Bamako Initiative and the Baby Friendly Community Initiative (BFCI) (WHO Global Health Workforce Alliance, n.d.).

The Bamako Initiative (BI), a program endorsed by the United Nations Children’s Fund (UNICEF) and the WHO, was adopted by The Gambia and other African countries to increase the availability of resources for essential drugs. This goal is addressed through a decentralization of decision making to regional health districts, and stresses “the need for community and individual self-reliance and participation in planning, organization, operation and control of primary healthcare, making fullest use of local, national and other available resources” (Eldis, n.d.). According to Eldis (n.d.), in order to promote individual and community self-reliance, the BI proposes that the financing of essential drugs would be provided by users, communities, districts, and national government, and that the community would control the funds it generates and emphasize protection of the poorest of its citizens. The BI has been implemented in select areas in The Gambia.

The BFCI is another community based program that seeks to accomplish an intervention - in this case, improve nutritional status in mothers, children, and infants - using the strengths and preexisting social infrastructure of the communities it seeks to help. The BFCI started as a pilot program in 1992, and has since been expanded to cover the entire country. For each community, eight community representatives - five women and three men - are trained in maternal, child, and infant nutrition, sanitation, and monitoring (National Nutrition Agency [NaNA], 2013).
Health promotion, particularly regarding family planning, is a tricky endeavor in Gambian culture in which it is not conventionally openly discussed. The Fankanta Initiative (fankanta being an acceptable euphemism for family planning in the Mandinka language) is one lead by traditional leaders, religious leaders, community health workers, and other community participants to develop culturally sensitive approaches to address family planning and sexually transmitted infection control issues (Dixey & Njai, 2012).

According to Dixey and Njai (2012), community health capacity building is being developed through the bantaba approach. Bantaba, a Mandinka word for meeting ground, “creates a forum for community members to discuss pertinent health issues, share positive experiences and lessons, and encourage positive changes,” thereby empowering the community to take charge of its own health promotion.

Due to its emphasis on primary and preventive care, The Gambia benefits from exceptionally high rates of immunization. However, it still suffers from a relatively low life expectancy, high infant mortality, low literacy rates. The chart above highlights Gambian health statistics in comparison to the US for reference (UNICEF, 2011).
Institutions/Partnerships

Various partnerships with the Ministry of Health and Social Welfare have been developed to address gaps in the public health service. For example, emergency health services for mothers and children has been addressed through a partnership between the Ministry of Health and Social Welfare, the World Health Organization (WHO), Maternal Child Health Advocacy International, and the Advanced Life Support Group (Cole-Ceesay et al, 2010). The Foundation for Hospices in Sub-Saharan Africa (FHSSA) is another organization that is addressing Gambian health concerns through partnership. In this case, African hospices and palliative care providers are partnering with their American counterparts, particularly to care for Africans with HIV, cancer, and other life threatening illnesses (Foundation for Hospices in Sub-Saharan Africa, 2008).

The Gambia has also partnered with Wales to develop e-learning modules to convey information and training related to diabetic foot disease and care (Breaking Health News, 2008), as well as address malaria prevention and nutrition issues through a collaboration between Gambian and Welsh students (Brindley, 2005). Other organizations partnered with the Ministry of Health and Social Welfare include Global Fund for AIDS, Tuberculosis, and Malaria, GAVI Alliance, and countries including China, Cuba, Egypt, Spain, Nigeria, Taiwan, and Venezuela (World Health Organization African Health Observatory, 2013).

According to Dixey and Njai (2012), The Gambia faces many of the problems of other African countries, namely access to safe water and sanitation, infectious disease, and high rates of maternal and child mortality, food insecurity. However, The Gambia does benefit from low levels of violence, alcohol related problems, cohesive communities, and a stable political environment.

Sanitation and safe water are some of the public health challenges facing both urban and rural residents. Open sewer in Cachikaly.
Senegal

**Senegal at a Glance**

**Full name:** Republic of Senegal

**Population:** 13.1 million (UN, 2012)

**Capital:** Dakar

**Area:** 196,722 sq km (75,955 sq mi.)

**Major language:** French, Wolof

**Major religion:** Islam

**Monetary unit:** 1 CFA (Communaute Financiere Africaine) franc = 100 centimes

**Main exports:** Fish, peanuts, petroleum products, phosphates, cotton

**Politics:** Macky Sall won presidential elections in 2012, replacing Abdoulaye Wade who controversially ran for a third term in office

**Economy:** Agriculture drives the economy; tourism is a source of foreign exchange

**International:** Senegal has mediated between Sudan and Chad over Darfur tensions; many African illegal migrants use Senegal as a departure point for Europe

**Security:** Despite a peace deal, a low-level separatist rebellion simmers in Casamance, in the south

**Geography**

The name 'Senegal' is said to come from the Wolof name of the dugout canoe, as visiting Portuguese sailors in the middle of the 15th century mispronounced it. The capital of Senegal, Dakar, is the westernmost point in Africa. Senegal is on the western-most part of the bulge of Africa and includes desert in the north and a moist, tropical south. The country, slightly smaller than South Dakota, surrounds Gambia on three sides and is bordered on the north by Mauritania, on the east by Mali, and on the south by Guinea and Guinea-Bissau. Senegal is mainly a low-lying country, with a semi-desert area in the north and northeast and forests in the southwest. The largest rivers include the Senegal in the north and the Casamance in the southern tropical climate region.

**History**

The Tukolor settled in the Senegal River valley in the 9th century, and from the 10th to 14th century their strong state of Tekrur dominated the valley. The Tukolor were converted to Islam in the mid-11th century. In the 14th century, the Mali Empire expanded westward from the region of the upper Niger River and conquered Tekrur. In the 15th century the Wolof established the Jolof Empire in the region between the Senegal and the Siné rivers. Jolof was made up of a number of states including Wolof, Cayor, Baol, and Walo (Our Africa, 2013). In the 17th century internal rivalries led to its breakup. In 1444–1445, Portuguese explorers reached the mouth of the Senegal River, which together with the Gambia River were used as routes to the interior. Trading stations were established at the mouths of the Senegal and Casamance rivers and on Gorée Island and at Rufisque, both located near present-day Dakar. In the 17th century, the Dutch and the French displaced the Portuguese (Our Africa, 2013).
Senegalese compounds in muted colors are accented by colorful works of graffiti.
The French established a post at the mouth of the Senegal in 1638, and in 1659 they founded Saint-Louis on an island that was there. In 1677, the French captured Gorée from the Dutch. During the Seven Years War (1756–63), Great Britain captured all the French posts in Senegal, returning only Gorée in 1763, and joined them with its holdings along the Gambia River to form the short-lived colony of Senegambia, Britain's first colony in Africa. During the American Revolutionary War (1775–83), France regained its posts but surrendered Gorée to Britain under the Treaty of Paris (1783). Britain again captured France's holdings in Senegal, during the Napoleonic Wars, but they were returned in 1815. At this time, the French presence was limited to Saint-Louis, Gorée, and Rufisque. From 1854 to 1865 (except for 1862), Capt. Louis Faidherbe was governor of Senegal, and he extended French influence up the Senegal and along the Casamance and conquered Walo and Cayor. In 1895, Senegal was made a French colony, with its capital at Saint-Louis; it was part of French West Africa, and from 1902 its headquarters were at Dakar. Under the French, Senegal's trade was reoriented toward the coast, its output of peanuts increased dramatically, and railroads were built. During World War II, Senegal was aligned with the Vichy regime from 1940 to 1942 but then joined the Free French. In 1946, Senegal, together with the rest of French West Africa, became part of the French Union, and French citizenship was extended to all Senegalese (Our Africa, 2013).

In 1948, Senghor founded the Senegalese Democratic Bloc, which dominated politics in Senegal in the 1950s. In 1956, a national assembly was set up in Senegal. In late 1958, after Charles de Gaulle had come to power in France, Senegal became an autonomous republic within the French Community and in 1959, Senegal joined with the Sudanese Republic (the former French Sudan, now Mali) to form the Mali Federation, which became independent in June, 1960. On Aug. 20, 1960, Senegal withdrew from the federation, becoming an independent state within the French Community. After World War II, independence movements gained in popularity. Senegal became fully independent in 1964. Léopold Sédar Senghor was the first president. Senghor stepped down in 1980 and was succeeded by Abdou Diouf. In 2000, Mr Diouf’s party lost power under the country’s democratic system and was replaced by Abdoulaye Wade (Our Africa, 2013). In 2012, Macky Sall won elections to become president of Senegal (Our Africa, 2013).
Modern Day Senegal

Besides from its rich history, Senegal has it all: it is one the most beautiful countries of the West African coast. Most tourists come for the region’s exceptional weather — more than 3,000 hours of sunlight per year — and dazzling, sparsely populated beaches. But Senegal also offers a broad variety of crafts and textiles, and the country’s six major game parks and reserves have great opportunities for hunting, bird watching and ecotourism (The Travel World, 2012). The Senegalese capital, Dakar, is known for its nightlife, and the country boasts one of Africa’s most varied music scenes. French jazz, American funk and hip-hop, and percussion-based genres all thrive in the country, and Senegal’s many musical exports include Youssou N’Dour, Daara J and Akon. Below are some popular tourist attractions:

1. Dakar: Despite everything Senegal has to offer, you could easily schedule your entire trip taking in the sights and sounds of Dakar, the country’s capital, which has a population of more than 1.5 million. Open-air markets sell art, food, jewelry and many other items whose prices can often be bargained down to very reasonable levels. The museums, especially the Musée Théodore Monod (for African art) and the Institut Français Léopold Sédar Senghor (for African art of French influence), are on a par with the best museums in European and American cities (The Travel World, 2012).

2. Île de Gorée: An important stop on the slave transport route from the 16th to the mid-19th century, Goree Island is a short ferry ride (or pirogue trip) from Dakar. It has a number of historic forts, houses, and museums, including La Maison des Esclaves (pictured below), where visitors can see where slaves and their traders lived while waiting to be transported to the New World. Despite its unpleasant history, the island is known for its beautiful Mediterranean architecture, and many travelers find in the Île de Gorée a welcome respite from the hustle and bustle of Dakar. (The Travel World, 2012)

3. Beaches: Senegal’s beaches are among the most photographed in the world and are not to be missed. Some of the best (and most popular) beaches near Dakar are the ones on the Île de Goree and at Toubab Dialao (a site famous for its stunning red cliffs). Beaches farther south of Dakar are generally larger and less crowded, the Petite Côte spanning over 94 miles (The Travel World, 2012).
**U.S./Senegal Relations**

Senegal has been held up as one of Africa's model democracies. It has an established multi-party system and a tradition of civilian rule (Department of State, 2012). Although poverty is widespread and unemployment is high, the country has one of the region's more stable economies. For the Senegalese, political participation and peaceful leadership changes are not new. Even as a colony Senegal had representatives in the French parliament. And the promoter of African culture, Leopold Senghor, who became president at independence in 1960, voluntarily handed over power to Abdou Diouf in 1980. The 40-year rule of Senegal's Socialist Party came to a peaceful end in elections in 2000, which were hailed as a rare democratic power transfer on a continent plagued by coups, conflict and election fraud.

The United States established diplomatic relations with Senegal in 1960, following its independence from France and the dissolution of the Mali Federation. Senegal had three presidents from 1960 to 2012. Power was transferred peacefully from one president to his handpicked successor in 1981, and transferred again in elections in 2000. The country's fourth president was elected in 2012 (DOS, 2012). Senegal is a strong U.S. ally as a regional, diplomatic, and economic partner. The country shares many fundamental values and international goals with the United States, and it has been a symbol of democracy as well as ethnic and religious tolerance.

Senegal also has contributed to regional peacekeeping operations. However, it faces internal threats to its stability due to a growing youth population, limited employment prospects, increasing urbanization, weak private sector investment, and the gradual erosion of good governance and transparency.

![Graph](image-url)  
**Figure 1: Total Expenditure Comparison between U.S. and Senegal**

The Health Expenditure; public (% of total health expenditure) in Senegal was last reported at 55.49 in 2010, according to a World Bank report published in 2012. The Graph above, shows a comparison of the United States and Senegal’s total Health Expenditure from 1995 to 2011 (TWB, 2011).
Senegal Infrastructure

The majority of Senegal’s population is in Dakar. In contrast, the rest of the country has a meager population and disjointed infrastructure coverage (Garmendi, Torres, & Dominguez, 2011). Garmendi et al., (2011) reported that Senegal’s density varies from about 77 people per square kilometer in the west-central region to two people per square kilometer in the eastern region. One of the challenges facing Senegal with respect to adequately supplying infrastructure for rural and urban areas is the rapid pace of urbanization. From the years 2000-2008, population growth averaged 2.7% annually and in spite of exceptional economic performance of the past decade, Senegal remains a poor country.

Rural areas still face the highest prevalence of poverty; “the poorest regions (Ziguichor and Kolda in the south, and Kaolack and Diourbel in the central region) are also those with the lowest access to water, sanitation, and electricity services, making evident the correlation between poverty and access to basic infrastructure services. Most of the infrastructure is found in the north of the country” (Garmendi et al., 2011).

Infrastructure contributed to the country’s improved per capita growth during the years 2000-2005, positioning Senegal in the center of the West African distribution. Improvements in infrastructure include roads, railway, electricity, and water. After Nigeria, the country reportedly ‘stands as an emerging hub and a major player in air transport’ (Garmendi et al., 2011) and has been successful in introducing private participation in electricity generation.

In spite of improvements, Senegal has a long way to go in its efforts which, according to Garmendi et al., (2011) will require ‘sustained expenditure of $1.792 billion every year over the next decade, with heavy emphasis on capital expenditure and Senegal already spends around $911 million per year on infrastructure, equivalent to about 11% of its GDP’ (Garmendi et al., 2011).
<table>
<thead>
<tr>
<th>Health Indicator</th>
<th>Recent Data</th>
<th>Prior Data</th>
<th>Source and Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>Life Expectancy at Birth</td>
<td>50 years</td>
<td>55 in 2010</td>
<td>Population Reference Bureau, World Population Data Sheet 2011</td>
</tr>
<tr>
<td>Infant Mortality</td>
<td>47/1000</td>
<td>50/1000 in 2003</td>
<td>DHS 2010</td>
</tr>
<tr>
<td>&lt;5 Mortality</td>
<td>72/1000</td>
<td>83/1000 in 2001</td>
<td>DHS 2010</td>
</tr>
<tr>
<td>Neonatal Mortality</td>
<td>25/1000</td>
<td>33/1000 in 2003</td>
<td>DHS 2010</td>
</tr>
<tr>
<td>Completed Immunization</td>
<td>62.8%</td>
<td>58.7% in 2010</td>
<td>DHS 2010</td>
</tr>
<tr>
<td>Underweight &lt;5</td>
<td>17%</td>
<td>22.2% in 1993</td>
<td>DHS 2005</td>
</tr>
<tr>
<td>Anemia (6-59 months)</td>
<td>76.4%</td>
<td>79.8% in 2008</td>
<td>DHS 2010</td>
</tr>
<tr>
<td>Children sleeping under ITN</td>
<td>31.4%</td>
<td>30.8% in 2006</td>
<td>DHS 2010</td>
</tr>
<tr>
<td>Total Fertility Rate</td>
<td>5.0</td>
<td>5.3 in 2005</td>
<td>DHS 2010</td>
</tr>
<tr>
<td>Modern Contraceptive Prev. Rate</td>
<td>12.1%</td>
<td>10.3% in 2005</td>
<td>DHS 2010</td>
</tr>
<tr>
<td>Unmet need for family planning</td>
<td>31.6</td>
<td>34.0 in 2000</td>
<td>DHS 2005</td>
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<tr>
<td>Maternal Mortality Ratio</td>
<td>401</td>
<td>690 in 2000</td>
<td>DHS 2005</td>
</tr>
<tr>
<td>Antenatal Care (attendance)</td>
<td>40%</td>
<td>37.5% in 2007</td>
<td>DHS 2005</td>
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<tr>
<td>HIV/AIDS prevalence</td>
<td>0.7%</td>
<td>0.7% in 2005</td>
<td>DHS 2010</td>
</tr>
<tr>
<td>*TB Incidence</td>
<td>110/100,000</td>
<td>No prior data</td>
<td>MOH Senegal Annual TB Report 2005</td>
</tr>
<tr>
<td>Treatment success rate</td>
<td>77%</td>
<td>No prior data</td>
<td>MOH Senegal Annual TB Report 2005</td>
</tr>
</tbody>
</table>

Table 1: Health Statistics in Senegal

The poverty reduction strategy highlights the objectives of Senegal’s nutrition policy, which includes enhancing community-based interventions such as the integrated management of childhood illnesses; advocating the fortification of cooking oil, flour, and salt; and creating biannual vitamin A supplementation and a deworming campaign. Senegal has developed guidelines for reproductive health and maternal and neonatal mortality — with help from donor agencies—and has a new national malaria control strategy that guides implementation of these components of the plan (GHS, 2010).

**Public Health System in Senegal**

Senegal is divided into 14 regions and 46 departments administratively with each region being headed by a Regional Chief Medical Officer. The system is sub-divided into health districts ‘that may be all or part of an administrative department’ (GHI n.d.). The District Chief Medical Officer leads the Health districts and along with the District Health Management Team, overlooks both the District Health Center and the staff at peripheral facilities throughout the district (GHI, n.d.).

In addition, the healthcare system in Senegal is made up of an organization of public health facilities including 22 hospitals, 78 health centers, 986 public health posts, and 144 private health posts. According to the Global Health Initiative (GHI), advanced care is supplied by regional hospitals; ‘district health centers (1 per 160,256 inhabitants) are intended to provide first level referrals and limited hospitalization services (approximately 10 to 20 beds); and health posts (about 1 per 13,083 inhabitants) provide preventive and primary curative services, care for chronic patients (such as tuberculosis patients), prenatal care, family planning, and health promotion/education activities.’
The foundation of Senegal’s health care pyramid is health huts which are maintained by local communities. Of these 2,000 huts which serve 19% of the country’s population 1,620 of them meet the standards to be considered functional and are supported by the U.S. Agency for International Development (USAID). Health huts offer basic services provided by community health workers (CHW) including “an integrated package of maternal and child health, malaria, nutrition and, in many cases, family planning services” (GHI, n.d.). Nurses at the closest health post supervise the CHWs. Other staff at health huts includes trained birth attendants (matrons), and health educators and communicators (relais).

**Institutions/Partnerships**

The efforts made by the Senegalese government in reaching its objectives and strategic priorities (as described in the National Health Plan for 2009–2018) have received support through U.S. investments in health. In Senegal, USAID is the largest U.S. Government implementer of health programs. In order to develop the Global Health Initiative (GHI) strategy, the U.S. Government team held regular joint planning meetings and chose two cross-cutting focus areas: (1) Improving maternal and child health through health systems strengthening; and (2) Improving the nutritional health of women and children (GHS, 2010).
Part III: Cross-cutting Global Health Issues

Improving Maternal and Child Health through Health Systems Strengthening in Senegal

According to the 2010 Demographic and Health Survey (DHS), infant mortality decreased from 61 to 47 per 1,000 live births between 2005 and 2010. Under-five mortality decreased from 121 to 72 per 1,000 live births and maternal mortality ratio fell to 401 per 100,000 (GHS, 2010). While the decrease is good, the numbers are still high and can be further reduced by addressing preventable causes of death including, malaria, neonatal causes, pneumonia, diarrheal disease and measles (GHS, 2010). Furthermore, immunization coverage has declined causing measles outbreaks and polio to reoccur (GHS, 2010). Tropical diseases such as schistosomiasis, lymphatic filariasis, soil transmitted helminthes and trachoma have also placed a heavy health burden on the citizens of Senegal (GHS, 2010).

Solutions

The ultimate goal and vision of the National Health Plan (PNDS) approved by the Government of Senegal (GOS) is universal access to quality curative and preventative health services without any form of exclusion (GHS, 2010). The primary focus of the PNDS is to reduce the burden of morbidity and maternal and infant mortality, improve the performance of the health sector, strengthen the sustainability of the health system, and improve the governance of the health sector. To achieve this, PNDS has developed a list of eleven strategies, which include:

1. Acceleration of the fight against maternal, neonatal and infant mortality and morbidity.
2. Promotion of health improvement.
5. Development of human resources.
6. Strengthening of infrastructures, equipment and maintenance.
7. Improvement of the availability of drugs and medical products.
8. Strengthening the health information system and health research.
10. Improving the capacity of the health sector in planning and administrative and financial management.
11. Strengthening insurance coverage with emphasis on vulnerable groups.

To improve Maternal and Child Health a major solution is to improve use of health services and commodities. This includes improved access to health services, improved quality of health services, improved demand of health services and commodities, and sustainable health systems (GHS, 2010).
In order to manage and execute the Senegalese government’s approved National Health Plan (PNDS) a number of agencies have coordinated their efforts. First, the U.S. Agency for International Development (USAID), which is the main U.S. government implementer of health programs in Senegal and which has been active there since 1962, provides community health services, HIV/AIDS, tuberculosis, and malaria assistance. USAID also provides emergency and humanitarian assistance and support for fortification of wheat flour and cooking oil to strengthen Senegal’s early warning system for food security (Senegal GHI Strategy 2011). Next, the Centers for Disease Control and Prevention (CDC) provides technical and financial assistance for malaria and HIV/AIDS surveillance activities as well as laboratory testing services. The Peace Corps (PC) places volunteers in local communities to work with community members to help improve their long-term environmental health and nutritional status. The Department of Defense (DoD) HIV/AIDS Prevention Program (PHAPP) works with the Senegalese Armed Forces to support HIV/AIDS treatment and prevention of mother to child transmission. In addition, the DoD engages military wives in prevention strategies improving family planning and prenatal care in all military facilities (Senegal GHI Strategy 2011). The U.S. Department of Agriculture (USDA) Foreign Agricultural Service (FAS) works with a number of NGOs and international organizations to develop food aid agreements in an effort to improve food security and further agricultural development. A number of donors help to make these efforts possible, including assistance from the U.S. government, The World Bank, The Global Fund, UNICEF, the WHO, and bilateral donors from Germany, Japan, France, Luxembourg, and Belgium as well as the Bill and Melinda Gates Foundation (Senegal GHI Strategy, 2011).

Throughout the planning phase of the program, all of the US government agencies have held regular meetings to develop the strategy. This planning includes a management steering committee, comprising of representatives from each agency and a specialist from USAID (Senegal GHI Strategy 2011). Biannually, the status of implementing activities and progress towards results is reviewed while challenges are discussed and solutions identified. Corrective action is then taken, if needed.
Monitoring and Evaluation (M&E)

**Senegal**

Senegal has implemented a number of programs to monitor and evaluate Maternal, Neonatal, and Child Health (MNCH) as well as Family Planning (FP) and Malaria treatment. As per the Millennium Development Goals (MDG) they hope to reduce the mortality for children under 5 and fight malaria via family planning, decentralizing access to health services, increasing service providers’ accountability with a view to quality services, increasing male involvement, reinforce girls’ and women’s accountability, improve malaria treatment by using the Artemisinin Based Combination Therapy (ACT), and increase the use of Intermittent Preventive Treatment (IPT) to prevent pregnant women from contracting malaria (Senegal MCH). For family planning, in regions of Dakar and Saint Louis, 32 tutors and supervisors have been trained in insertion and removal techniques for intrauterine devices (IUD) and Norplant as well as counseling skills and managements of data.

Efficacy of these training programs was monitored by post-training follow-ups. Support for medical regions and districts, rather than the central government, for the active collection and organization of information has allowed for improved monitoring of performance indicators of MNCH/FP/Malaria (Senegal MCH).

In terms of malaria control, 1,804 providers have been trained in the monitoring and evaluation of health programs, diagnosis of malaria, and prevention and management of malaria by integrating IPT and improved communication methods (Senegal MCH).
Monitoring and Evaluation: The Gambia

We were not able to witness or encounter staff that is dedicated to monitoring and evaluation of programs in Gambia during the course of our short visit. However, there were references to monitoring activities during the course of everyday work at the health center and at a water plant that we visited. At the Health Centers in Brufut and Sukuta, staff maintained registers for all patients seen. Brufut also had a monthly display for last year’s coverage on the Expanded Program on Immunization which is used to monitor immunization rates. During multiple lectures it was mentioned that the type of monitoring done on water and sanitation as well as on nutrition was in the form of visits by senior officials to project sites. Evaluation was for instance based on the number of people participating in building toilets to improve sanitation or attending nutrition classes that were organized at the village level. Finally, we learned from lectures that overall monitoring and evaluation of programs that ensure that systematic frameworks are put into place is hampered by a lack of funding.
Ethical Challenges

Limitations

Part of approaching this project in an ethical manner is acknowledging the limitations of the book project as well as our limitations as students. Recognizing our biases and the moral lenses through which we experience our education and environment is a key part of an ethical approach. It is not within the scope of this group book project to acknowledge all of our diverse individual biases and backgrounds, but we will note that we are all here as students, as outsiders and for a limited period of time. These three factors influence the way that we perceive interactions with people and the environment. However, while we are limited, we are also responsible because of our position of privilege.

Ethics - Education, Culture and Gender

In this brief section on some of the ethical considerations and challenges we will consider a few different aspects of ethics through examining ethical considerations for short-term educational experiences including working with vulnerable populations and hard to reach groups; and ethics as it relates to culture and customs, such as female genital mutilation, traditional healers and gender relationships.

As outlined in article by John Crump, (Crump and Sugarman 2008) we must consider impacts on those that we are learning from such as practitioners, patients, hosts and others. When visiting health centers and hospitals practitioners are taking away time from patients to teach us and provide us with a robust experience. We must be conscious of viewing patients and patient records as spectators and respecting privacy, dignity and safety. How does our presence impact distribution of limited resources? What criteria do practitioners, policy makers and program directors use in distribution decisions?

Additional attention is required when working with hard to reach groups and vulnerable populations such as children and those who are sick or disabled. We must be conscientious and honor intentions to minimize burdens and maximize benefits of our presence. Through thoughtful pre-departure preparations and careful site visit planning, we can be better partners to our in-country hosts.
Ethics, Culture, and Customs
Dr. Terera Trent highlighted an important distinction between culture and customs in her Grand Rounds lecture (Trent, 2013). She reinforced this conceptual and practical principle during our debriefings, university discussions and other conversations during our field experience. Culture relates to the values, principles, beliefs and foundations that guide relationships for a given community. Customs are practices and traditions that may be a reflection of culture, but are not definitive aspects of it. Customs can be harmful or discriminatory, such as child marriage or anti-vaccination campaigns and are often defended by cultural arguments. However, while we should be knowledgeable about and respectful of culture, we should not let the lens of cultural relativism obstruct our vision when taking a critical eye to harmful customs.

Examples of some of the customs and practices of the Gambia include home birth and the use of traditional birth attendants or TBAs, female genital mutilation or FGM, use of traditional healers (herbalists, spiritual healers etc.) and strictly defined gender roles that impact education for girls. These customs highlight aspects of complex gender roles and relationships. How do history, culture, religion and customs impact gender equality? How can policy and specifically public health policy work those practicing traditional customs to improve the overall health and well being of all Gambians?

The Gambian health system undertook efforts to bring in those engaged in traditional health practices and include them in the formal health system. Their programs to provide training, supervision and resources such as sterile tools and mobile phones to TBAs and traditional healers has improved health outcomes for maternal and child health and increased referrals for conditions beyond the qualifications of traditional health practitioners. There is still a long way to go in terms of gender equality especially in relation to cultural practice but open dialogues such as that we had at the University of Gambia are signs that the environment is ripe for progress.
Part IV: Being in the Field

Field experience refers to the application of knowledge in real life situations. That often includes the need to consider the influence of confounding factors and perceived barriers that are either held constant or not entirely considered when merely studying a particular subject. It is crucial to be able to personally confront some of the difficulties of public health implementation as part of the learning experience during a masters program. It is not sufficient to simply be aware of their existence, as the actual application of educational goals is often much more complex and requires a deeper level of analyses of issues at hand. Important skills like cultural sensitivity, conflict resolution, effective communication, attentive listening, political bargaining and compromising can only truly be learned through experience. Furthermore, the magnitude of scarcity of resources and lack of necessary infrastructure are limitations that are often underestimated when only studying particular problems in public health. It is for all these reasons that field experience is so important and should be part of any effective masters program.

The following section includes excerpts from our student notes and is divided thematically into three sections Accommodations and Cultural Activities, Clinical Visits, and Education.

Accommodations and Cultural Activities

August 27, 2013
Sandele Eco-Retreat
Scribe: Audun

While visiting The Gambia, we stayed at the Sandele Eco-Retreat in Kartong. Sandele, which comes from the Mandika tribe’s Sineedehleh, meaning ‘Now be still’, was created by owners Geri and Maurice, out of a desire to create an environmentally friendly and sustainable community that is more than just a hotel for visitors in The Gambia. Being mindful of traditional customs, Geri and Maurice first obtained the land for development by sending a gift of Kola nuts to the village elders, who then invited them to a discussion about the land’s use.
To ensure that the local community would benefit, the lodge built with a combination of government and private investment. Sandele is committed to giving back to its community, hiring 70% of its staff from the local village, purchasing food locally, and giving part of its income from room revenue to the Village Development Fund. In addition, Sandele utilizes sustainable energy resources such as solar panels, an on-site wind turbine, as well as reduces water usage by installing compost toilets in each room. The buildings were constructed using compressed, stabilized earth blocks (CSEB’s). Almost all the construction materials were sourced from within a five-kilometer radius of the site. Because of the tremendous success of these sustainable practices, they have created EarthWorks Construction, a sustainable construction company to keep with the demand for training and use of the CSEBs. Sandele is also committed to fostering collaborations between the international community and the Gambian people, sponsoring workshops on responsible tourism, yoga retreats, and projects around the compound, giving Gambians and students from around the world an opportunity to learn from each other. Finally, Sandele is truly committed to making the Eco-Retreat for the community, for after its 25-year lease ends, the compound will be turned over to the local village.
During breaks between site visits and lectures the Drexel group explored the local area and took time to process the experience. The natural beauty, diverse plant and animal life of the Gambia offered a variety of experiences within a short walk of the Sandele lodge. Students enjoyed the beautiful beaches, explored the forests and learned about the medicinal uses of local plants from Omar, head of security at Sandele lodge who is also writing a book on medicinal plants.
We also had opportunities to learn about local arts, history and culture.

Pictured above:
Baboucarr Faal, a local artist, demonstrated the complexity of batik work at Sandele.

Pictured Left:
Beautiful examples of Mr. Faal's batik work.
Clinical Visits

August 28, 2013
Visit to Brufut Health Center
Scribe: Frances

The visit to the Brufut Health Center was an especially educational one. We were graciously hosted by a public health officer who provided a tour of the facility’s many features. During our visit, the clinic was experiencing a shortage of electricity, which although did not prevent its ability to consult with patients, it conceivably could have affected refrigerated medicines, vaccines, and other clinical materials. The main waiting area constituted of an open space with many patients congregating around the visit rooms. There were no computers on site and when the epidemiology office had to produce any sort of chart or graph, they were forced to consult with a private company to make and print their work. Perhaps one of the most intriguing features of this clinic was the detailed drawings displaying the services performed at the clinic and the map of the villages served. This is a common theme that we repeatedly came across, as a large percentage of the population in the Gambia is illiterate and benefits from the use of educational drawings. There were numerous women and children everywhere and even some goats roaming around the periphery of the clinic grounds; to a naïve visitor, it might have appeared to be a convivial social gathering.
The few men at the site seemed to be employed by the clinic. Overall, the clinic appeared to run efficiently despite relatively limited resources and infrastructure.

The Gambia has a very effective vaccination program, currently covering up to 90% of children nationwide. According to our host, there are no aversions to vaccination in The Gambia, differently from the US. The routine vaccinations include BCG (against tuberculosis), polio, measles, rotavirus, and hepatitis B. Prenatal vaccination includes tetanus, which has dramatically decreased in incidence rate since the tetanus vaccination program was inaugurated in 2008. The vaccine schedule is set by the Health Ministry and is based on World Health Organization (WHO) guidelines. Furthermore, vaccines are administered at the maternal child health (MCRH) clinics. Children visit these clinics every month up to five years of age. This schedule is so frequent due to the high child mortality rate, especially due to malaria-related diseases. Children older than five years of age visit clinics on an as needed basis. All children are issued a blue cardstock form on which vaccines, growth progress, illnesses, and other clinical information are documented in every visit. These forms are retained by the children’s parents who are responsible for bringing them to each clinic visit. Naturally, the forms we saw at our clinic visits were in varying states of decay and sometimes in multiple pieces.

MCH clinic visits cost five dalasi for adults and one dalasi for children. These rates cover all treatment required during the visit. Essential drugs (per WHO recommendations) are available at all clinic pharmacies. Those not on the list, may be purchased at private pharmacies and are potentially very expensive. Due to the lack of resources and the inability of many patients to afford costly treatments, medical care in the Gambia is provided in a manner that emphasizes primary and preventive measures.

A malaria rapid test used at Brufut and other health centers.

Clinics provide TB monitoring, malaria and HIV quick screenings, family planning counseling, especially for young women who have many children. Furthermore, the clinics track incidence of diseases and those that rank the highest become the focus of village educational efforts. Health workers of a clinic spend a significant amount of time manually recording every individual case in order to provide valuable statistics that allow for preventive care planning.

Most care is provided by a variety of nurses, including registered nurses, enrolled nurses, and community nurses. Midwives and public health officers are also involved in the provision of primary care. Community health workers provide basic medications and information to pregnant women at home.
September 3, 201
Trekking Day
Scribe: Cecilia

We visited Tanjeh Health Center for a full trekking day on Tuesday September 3. We were divided into groups depending on the needs of the station within the health center and our own personal interests. The numerous stations included the prenatal, immunizations, weighing station, vitamin A station, and various other stations.

I was stationed in the prenatal clinic, where I was under the supervision of Mama Jajeh. I entered the fetal development of each woman by week in the log book and administered the malaria pill for women who were between weeks 24 and 32.

Additionally, I aided in the initial interview for women who visited the health center for the first time. The women answered questions about their age, how many children they have alive and dead, how old their children are, whether or not they use family planning, and many other questions pertaining to their obstetric history.

The highlight of my day was when one of the nurses from Holland taught me how to manually figure out how far along a pregnant woman would be at the time of their visit. Working with Mama Jajeh and the visiting nurses from Holland was such a rewarding experience that I would never forget.
September 4, 2013  
Traditional Birth Attendants  
Scribe: Cecilia

On September 4, we had the pleasure of speaking with four incredibly knowledgeable women from the local villages of Sifoe and Gunfur about their roles as traditional birth attendants in their respective villages. Our meeting was held at Gunfur Health Center, where we had an opportunity to ask numerous questions covering topics from common complications women undergo during child labor to more sensitive topics such as the impact of female circumcision and miscarriages. We learned that the average length of labor time is approximately two hours, but can often take longer. If the woman is in labor for more than 3 hours, the birth attendant refers her to the nearest Health Center due to possible complications that may require medical attention. The first thing the traditional birth attendant focuses on before helping a woman during labor, is make sure their environment is as clean as possible. If the environment is not clean, the woman is referred to the nearest Health Center. The next important step taken by birth attendants is to guide women to find a comfortable position to ease the birth process, preferably kneeling or laying on their backs. If this is the woman's first birth however, she must go directly to the local Health Center. Furthermore, traditional birth attendants facilitate an average number of 10 births per year.

The most common complications witnessed during labor are severe bleeding and malaria-related symptoms. During our discussion, we were surprised to find out that women that had undergone female circumcision (in Western culture viewed as female genital mutilation), suffer less pain and have an overall easier time giving birth. Moreover, the traditional birth attendant and the mother are the only two people present during the birth. Once the baby is born, he/she typically do not leave the house for a week until the naming ceremony takes place and the baby is formally welcomed into the community.
September 5, 2013
Visit to District Health Center of Brikama
Scribe: Frances

Presentation on Nutrition by Mr. Buba Jatta:

The country is divided into eight districts. The National Nutrition agency, established in 2000, is tasked with implementing the national nutrition policy. Areas of focus include salt iodization, vitamin A supplementation, and initiatives to improve the health status of the population by focusing on infant nutrition – the Baby Friendly Community Initiative and Baby Friendly Hospital Initiative. The baby friendly initiatives emphasize breast feeding, provide supplementary nutrition to underweight babies and pregnant mothers, among other activities.
Education

August 29, 2013
University of the Gambia
Scribe: Catherine Gumbo

On this day we visited the Global Environmental and Occupational Health (GEO Health) Center at the University of the Gambia Science, Technology and Innovation at Faraba Banta Campus. We received two separate lectures from Mr. Edris Sanyang HND, BSSC, MsSc, MPH, Public Health professor at The University of the Gambia- one regarding water, sanitation and waste disposal and one on GEO Health in the Gambia.

Water
We learned that a shocking 1.1 billion people worldwide lack access to safe drinking water, according to the WHO. In the Gambia, 15.8% of all deaths are due to diarrheal diseases, 57% of these being from people living in crowded areas. Sources of water throughout the country include: 1) open unlined wells, 2) lined wells, 3) covered wells, 4) reticulation systems and 5) network systems. For open unlined wells, which are still very common in many villages, some of the major sources of contamination are due to animals falling into the wells, run-off water and contaminated buckets used to fetch water. Covered wells, on the other hand, do not directly expose the water and are fitted with hand pumps that protect the water from some of these sources of contamination. Monitoring of water quality is based on WHO standards.

With regards to water transport, 83% of Gambians lack a source of water connected to their homes. Thus, women and children serve as water collectors for the household. This can potentially create many problems such as contamination of water by the collector when walking back home (dirty hands), propagation of child labor and its effects on schooling, reinforcement of gender roles with women being viewed as responsible for all household chores.

Reticulation systems use solar pumps to deliver water to an elevated tank, which is then distributed to a number of households. These are relatively uncommon.

Sanitation
Open latrines are used in the villages and the disadvantage is that some of them have no doors. In the Urban and Peri-urban areas there is a problem of solid waste disposal as is the case in most West African countries. In Gambia Banjul is the only place with a sewage waste treatment plant. Other places use septic tanks that get emptied periodically. Mr. Edrisa Sanyang also talked about capacity building and sustainability of the water and sanitation programs. Each village is encouraged to form a committee that looks at safe water provision, personal hygiene and environmental sanitation.

The last part of the morning lecture was on study that looked at water contaminants in Rural Gambia. For the study, water was analysed at the source, at the end of transportation and at the point of use. Measurements done included physical distance from water source, height of storage container, counting of bacterial coliforms from water samples. The study concluded that water contamination was high at the end of transportation. A follow up project to this study is Community Lead Total Sanitation (CLTS).

The concepts behind this project are:
- that it is community driven
- uses shame and disgust
- needs facilitation skills
**GEO Health**
The afternoon lecture was on Global Environmental and Occupational Health (GEO Health). The West African GEO Health Hub is located in the Gambia. The GEO Health center was established as a joint venture of the University of the Gambia and Fogarty International Center in Iowa. An initial two year project covering 15 West African countries is funded by the United States Institute of Health. During that period, needs assessments which include documentation review and completion of a survey questionnaire as well as staff training will be done.

The three languages used for communication within the countries involved are: English, French and Portuguese. Areas under review are: water quality, solid waste, workplace safety, agricultural health, toxic waste and disaster preparedness.
August 31, 2013
Water Treatment Plant
Scribe: Mayo

- In the Gambia, there are 4 major treatment stations.
- The site manager during today’s visit is Mr. Morgosila.
- There are 17 bore holes served by this plant; they have 18 kilowatt pumps and the depth of earth bore hole is between 80-100 meters.
- All of the bore holds can be controlled from one control room location.
- Water is pumped from a production bore hole, from here, water is supplied throughout the region all the way to Serakunda.
- The amount of water supplied to a family depends on the family size and location.
- Water treatment starts by way of aeration.
- Then chlorine is added. There are two chlorine banks to ensure constant chlorine distribution.
- The plant operates 24 hours a day to ensure constant monitoring of the treatment process.
- There are 2 water quality labs. They are responsible for monitoring water quality nation-wide.
- These labs are where chemical and bacteriological tests are done on the water.
September 2, 2013
Scribe: Karen
Healthcare System in the Gambia

Our visit to the University of the Gambia, Brikama campus, helped our students to understand the detailed structure and the philosophy behind the country’s healthcare system. We were first given an opportunity to interact with several Gambian public health students in a classroom setting, discussing our individual backgrounds and interests in the field of public health. Upon noticing the lack of a female presence amongst our Gambian colleagues, we began a discussion about gender roles in the Gambia and how these educated male scholars perceived the lack of access to higher education to females in their country. It was comforting to hear that some of our colleagues were consciously aware of these gender disparities and sought to do their parts in changing cultural norms preventing women from acquiring higher degrees. Next, we watched a short video that explained the influences of the Cuban healthcare system model in the Gambia. Cuban doctors, who mainly focus on preventive care in their country, were able to help Gambians build their healthcare system based upon the same principles. Preventive healthcare is extremely important in the Gambia since there is such a shortage of medications, equipment and specialized doctors. After the video, the public health students further discussed the structure of their healthcare system in detail. We learned that there is a central level of health surveillance in the country followed by seven regional health teams, each containing a number of public officers, nurses, health administrators and many other key staff members. Nurses are often in charge of reporting the diseases to public health officers, which will then pool data and report it in the national level. The national level is responsible for training staff members and ensuring their presence on different sites.

Handwritten log books used in health centers across the Gambia.

These include traditional birth attendants, which assist with uncomplicated births, public health officers, which educate the populace of a village on healthy practices, health administrators, which help organize immunization days at healthcare stations, and several others. We finished our visit with a guided tour of the facilities.
Part V: Lessons Learned and Conclusion

While in the country as students of Public Health, we were able to witness and experience the application and integration of programs, policy, resources, partners and obstacles and learn about cross cutting issues in the country that impact the delivery and access to healthcare. It is difficult to make comparisons between the health systems of the United States and the Gambia because they differ greatly in terms of resources, population makeup, history and culture. The West has had a history of an attitude of condescension toward African nations' health practices. As American medical and public health students, we must be aware of these attitudes, and step away from our culture to truly see the value of the Gambian health system. That being said, this is not to ignore the issues with the Gambian health system, which include high illiteracy rates, maternal mortality, lack of sanitation and high rates of poverty.

The most striking aspect of the Gambian public health system was the resourcefulness of the staff and people receiving the care. The Gambian health system made the best of scarce resources, bringing healthcare to the people, and placed greater emphasis on health as a right and not as a commodity to be bought and sold. The health system is much more focused on prevention rather than cure.

In January 2010, for children aged 12-23 months, the Gambia had a 97% immunization rate for the DPT (diphtheria, pertussis (whooping cough) and tetanus) vaccine (Trading Economics, 2013). In January 2008, for children aged 12-23 months, the Gambia had a 96% immunization rate for measles. (Trading Economics, 2013). In terms of immunization, the National Population Policy, has the goal of 100% immunization of infants aged 0 to 11 months by 2015 (Gambia Bureau of Statistics, 2007).

The monitoring and evaluation of the health system is an ongoing process as the health system partners with countries such as Cuba, the United States and the United Kingdom. Traditional medicine plays a vital role in the health belief model of the Gambian people and it is incorporated with the monitoring and evaluation of the health system.

This is illustrated in the use of TBAs who use local plant remedies to help induce labor, but refer pregnancies beyond their scope of care to a health care center. Through our treks and visits to various health centers in the Gambia we saw that health and education were inextricably linked. Pictures of common health conditions were oftentimes painted on the walls of health clinics because many of the community members were illiterate. Historically, girls were not educated, they were groomed for marriage. Boys were expected to be educated and become breadwinner. This is now gradually changing with government subsidies to girls and women for their education advancement. In the Gambia, about 43% of girls and women aged 15-24 are literate (Gambia Bureau of Statistics, 2007). The highest rates of literacy are found in the capital of Banjul and lowest rates of less than 20% is found in Basse and Kuntaur (Gambia Bureau of Statistics, 2007). Mothers who have at least a secondary education or higher are more knowledgeable of health information in regards to their child and can earn a higher income. Higher maternal education is correlated with higher rates of birth registration, lower rates of child malnutrition and higher rates assistance with delivery by a skilled birth attendant (Gambia Bureau of Statistics, 2007).
Part VI: Meet & Greet

Frances Adachi
Frances Adachi is a MD/MPH candidate at Drexel University, and her public health concentration is in health management and policy. After medical school she plans to train in internal medicine, and hopes to eventually work in global health and palliative medicine. She is from California, and completed her undergraduate work in sociology at the University of California, Berkeley.

Cecilia Sara Alcala
Cecilia Sara Alcala is an MPH and Global Health Certificate Candidate at Drexel University School of Public Health, concentrating in Environmental and Occupational Health from Brooklyn, NY. She earned her Bachelor’s degree in Psychology/ Pre-Med from Agnes Scott College in 2012. This Global Health experience to Senegal and the Gambia opened the doors to global health for Ms. Alcala and she hopes to continue to travel the world to apply theory and principles to increase international development in maternal and child health. She looks forward to graduating in June 2014 with an MPH degree from Drexel University School of Public Health and a Certificate in Global Health. Ms. Alcala hopes to merge her passion of maternal and child health and natural medicine to develop both research and prevention programs to address environmental exposures that affect maternal and child health using data analysis and monitoring, needs assessment and program evaluation in under-served populations around the world.

Oluwamayowa (Mayo) Azeez
Oluwamayowa (Mayo) Azeez is a full-time student at Drexel University’s School of Public Health. She intends to concentrate in Community Health and Prevention or Health Management. In the future, she would like to work in the field to help under-served populations better access health care.

Karen Benabou
Karen Benabou is currently pursuing a dual degree in medicine and public health. The Gambia has been the perfect place to develop her understanding of the importance of preventative healthcare within a vibrant community. This inspiring experience has retaught her the significance of prioritizing maternal and childhood health as the cornerstone of a healthy society.
Triza Brion

Triza Brion is pursuing a Master's of Public Health at Drexel University, concentrating in Community Health and Prevention. She graduated from the University of Arizona in 2011 with a dual B.S. in Biochemistry and Molecular and Cellular Biology and a B.A. in Spanish. Throughout the global health field experience in Senegal and The Gambia, Triza hopes to learn more about maternal and child health issues and disparities that arise in the context of a resource poor health system. She wants to use these experiences to inform her public health practice, especially in developing health education materials and evaluation tools. After completion of her Certificate and MPH, Triza plans on pursuing an M.D. and looks forward to working with underserved communities both domestically and abroad.

Ashley Brown

Ashley Brown completed her MPH at Drexel University in June of 2013. She currently works as a staff scientist in the viral vaccine division of Merck & Co. Her interest in global health lies in the areas of disease surveillance, vaccination, and cold chain management. This trip gives Ashley the opportunity to see, firsthand, the impact of the products she works on and how they are distributed globally.

Joy Browne

Joy Browne is currently pursuing a Masters of Public Health degree and a Certificate in Global Health, at the Drexel University School of Public Health, with a concentration in Epidemiology. She graduated from the University of Maryland with a Bachelor’s degree in Anthropology in 2011. Her educational background facilitated her awareness of public health on a global scale, and shaped her interest in analyzing the connections between culture and health. The in-depth field experience in Senegal and The Gambia gave Joy a deeper understanding of how culture and tradition is integrated into the public health system. With her anticipated degree, she hopes to utilize epidemiological methods to research the associations between tradition practices, medicine and beliefs; and the subsequent health outcomes.

Hayley Buffman

Hayley Buffman is a second year MPH student concentrating in Environmental and Occupational Health while also pursuing a certificate in Global Health. Originally from the Philadelphia area, she moved to South Korea for a year after undergrad to teach English and did some further traveling throughout South East Asia and Central America. From that experience she found it interesting how diseases and the general health of people differed from Americans due to Environmental, Social, and Cultural factors which lead her to study Public Health at Drexel. “Every time I travel I learn something new making me feel privileged to have had the opportunity to be a part of the Senegambia trip, improving my knowledge of Global Health.”
Brittany Coote

Brittany Coote is a second year MPH student at Drexel University, concentrating in Health Management & Policy. She decided to pursue a certificate in Global Health because she wanted a more thorough and hands-on experience with the global health topics illustrated in her coursework. Her two-week study tour of Maternal and Child Health in The Gambia was an eye-opening and rich learning experience. She has had previous experience working as a research assistant for a study on the relationship between PTSD occurrence and nocturnal blood pressure. She would like to obtain her PhD in Health Policy or DrPH and conduct research in Health Management & Policy.

Natasha Friend

Natasha Friend is a second year MPH student at Drexel University, concentrating in Health Management & Policy and a certificate in Global Health. She hopes to one day see herself working within a hospital setting that focuses on delivering access and quality care to all patients. With her Global Health Certificate, she wants to use this credential to study international health systems and their infrastructures and be able to apply them domestically.

Catherine Gumbo

Catherine Gumbo, an RN, is an Executive MPH student with Drexel University in Sacramento who is also enrolled in the Global Health Certificate program. She is interested in participating in monitoring and evaluation of Maternal and Child Health (MCH) programs in developing countries, especially Zimbabwe. Her participation in the global health module in The Gambia and Senegal reaffirmed what she knew about the health and economic disparities between the developed and the developing world. She believes that understanding culture should always be considered vital for successful implementation of MCH programs in The Gambia and other African countries.

Audun Lier

Audun Lier is an M.D./M.P.H. candidate concentrating in Global Health as well as Environmental and Occupational Health at Drexel University. He was drawn to pursue his master's in public health because the field presents an opportunity to address major health challenges at the population level that medicine itself cannot achieve. Furthermore, he is interested in learning more about healthcare systems in countries outside the United States and hopes to apply his experiences from this trip to his future practice as a physician and public health professional in the United States and abroad.
Shannon Oates-Rivera

Shannon Oates-Rivera enrolled in the Global Health Certificate program to enhance her working knowledge of global healthcare delivery in support of her career in global pharmaceutical corporate communications. The site visits in Gambia and Senegal showed her how developing countries deliver healthcare with limited resources, provide affordable access and as a result, create better health outcomes. She treasures the many memories and friendships our class built with the community and within the class, as we were learning. Going forward, her perspective is forever changed.

Ruby Oluronbi

Ruby Oluronbi is a 3rd year student at Drexel University pursuing a medical degree, a Masters in Public Health degree with a concentration in Health Management and Policy, and a Global Health Certificate. Her main goal is to understand global conditions that affect health in hopes to be part of the solution to end disparities in health status as well as improve access to healthcare. Ruby's experience in The Gambia certainly opened her eyes to the importance of maternal and child health in developing a healthcare system. She hopes to merge this experience with the skills that she acquires throughout the rest of her education in order to be a more competent physician.

Doreen Panzarella

Doreen Panzarella is an an MD/MPH student. She is concentrating in Environmental and Occupational Health, with a particular interest in emergency preparedness, toxicology, and industrial disasters. Doreen is originally from New York and began her interest in global public health as an undergraduate, where she was given the opportunity to study abroad in Ghana. She is thankful that she was given another opportunity to return to West Africa and further enhance her passion for global health in Senegal and The Gambia.

Chidinma (Star) Tiko-Okoye

Chidinma (Star) Tiko-Okoye is an MD/MPH Candidate at Drexel University, concentrating in Health Management & Policy with a certificate in Global Health. Whilst born in Nigeria, she has travelled in and lived in many different regions of the world, which has contributed to her interest in the vast disparities in access to health-care. During her time in The Gambia, she fostered an appreciation for the public health and medical workers who are capable of providing successful health outcomes with quite limited resources. She hopes to merge her surgical interests with public health by providing surgical care and long-term surgical infrastructure in low to middle income countries.
Heidi West

Heidi West is a student in the Drexel University, School of Public Health, Graduate Certificate in Global Health program and Director of Drexel's Office of international Programs. She holds an MA in Ethics, Peace and Global Affairs from American University and a BA in Political Science from the University of California, Berkeley. Throughout this global health experience, Heidi hopes to expand her knowledge and exposure to issues related to ethics in health system design, access and delivery, and particularly challenges and disparities related to gender and vulnerable populations. She plans to eventually pursue a PhD and conduct research on trauma and health access for communities surviving conflict induced migration and other vulnerable populations.
References:


