RWANDA
Maternal, Neonatal and Child Health Assessment

Kigali, March, 2006
PROLOGUE

Decentralization in Rwanda

Since the time of the Maternal, Neonatal and Child Health Assessment in June 2005, Rwanda has undergone considerable change, most notably through decentralization initiatives that have restructured the ministries and redefined administrative boundaries throughout the country (see Annex 4 for current maps reflecting boundary changes). An effort has been made through a process of review to update this report so it reflects the current decentralized context.

At the time of the assessment, Rwanda was made up of 11 Provinces (plus Kigali Ville), 106 Administrative Districts, and 40 Health Districts. Decentralization measures have redefined borders such that there are currently four Regions (plus Kigali Ville), 30 Administrative Districts and 30 Health Departments (which share boundaries with Administrative Districts). This harmonization of administrative and health districts were formally launched on February 1, 2006 with March elections scheduled for the new administrative districts. Health district and health center funds heretofore dispersed by MINISANTE at the central level will be channeled to administrative districts in support of health activities at the district, sector and health facility levels. It is the role of the administrative districts to be responsive to the health community in allocating funds to address their priorities, including maternal and child health. This alignment of health and administrative districts is promising as it presents great opportunity for improved communication, collaboration and joint planning between administrative leaders and district health officials.

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<thead>
<tr>
<th></th>
<th>2005</th>
<th>Current</th>
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<tbody>
<tr>
<td>Provinces/ Regions</td>
<td>11 plus Kigali Ville</td>
<td>4 plus Kigali Ville</td>
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<tr>
<td>Administrative Districts</td>
<td>106</td>
<td>30</td>
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<tr>
<td>Health</td>
<td>40 Health Districts</td>
<td>30 Health Departments</td>
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Although the Maternal, Neonatal and Child Health Assessment was completed prior to these important changes to the administrative and health structures, the assessment findings and recommendations remain just as relevant. The health issues affecting Rwandan mothers and children have not changed in recent months, and the recommended interventions to resolve these problems continue to prove effective. The assessment report offers valuable insight on how Rwanda can build on strengths and address weaknesses in national health policy and services to ultimately improve the health status of mothers and children.

Restructuring of the Ministry of Health

See Annex 10 for the current organizational chart of the MINISANTE. A description of the new structure of MINISANTE is currently under development and therefore not available for this report.
Rwanda Demographic and Health Survey 2005
Summary of the Preliminary Report

The third Demographic and Health Survey in Rwanda, the Enquête Démographique et de Santé au Rwanda (EDSR-III) was carried out from February to July 2005 by the Direction de la Statistique (which became the Institut National de la Statistique du Rwanda (INSR) in September 2005). At the time of the Maternal, Neonatal and Child Health Assessment, the EDSR-III was not complete, and the data was therefore not available to the Maternal, Neonatal and Child Health Assessment team for inclusion in the body of this report. The following categorized summary and table of maternal, neonatal and child health indicators are from the recently released 2005 EDSR-III Preliminary Report.

The EDSR-III covered a nationally representative sample of 10,644 households in both urban and rural areas, and the results presented correspond with the recently demarcated regions (namely the South, West, North, East and Kigali City). A total of 11,321 women age 15-49 and 4,820 men age 15-59 were successfully interviewed.

Background Characteristics of Respondents
With nearly 23% of both men and women respondents between 15 and 19 years of age, Rwanda has a relatively young age structure. Across age groups, men are slightly more likely to be married or living in an informal union (52%) than women (49%), and women are far more likely to be widowed, divorced or separated (14% vs. 3%).

1. Fertility and Use of Contraception
The total fertility rate (TFR) in Rwanda is estimated at 6.1 children per woman with a considerably higher rural rate (6.3) than urban (4.9) across all age groups. Adolescents age 15-19 are responsible for 3% of total fertility; maximum fertility is reached at age 25-29 for both rural and urban women. Among women currently in union, the modern contraceptive prevalence rate (CPR) increased from 4% in 2000 to 10% in 2005 with hormonal injections that provide 3-months of protection as the most utilized modern method (5%). Contraceptive prevalence varies greatly by residence with 20% use in urban areas compared with only 8% in rural areas. Kigali City has the highest rate of women (22%) currently in union using modern methods while in other regions the rates vary between 8 and 10%.

2. Desire for Additional Children
The proportion of women in union who want to have fewer children has increased since 2000 from 33% to 42%. Additionally, 39% want to space births by two or more years and 12% expressed a desire to have another child soon. While the desire for birth spacing steadily decreases beginning with the birth of the second child and continuing with the birth of every child thereafter, the proportion of women who want to limit births increases rapidly with the number of living children.
3. **Antenatal Care and Delivery Assistance**

For the most recent birth in the last five years, 94% of all women consulted a health professional for antenatal care. This percentage rises from 92% to 95% with the mother’s education level. One tetanus-toxoid injection was given to 64% of pregnant women with their most recent birth and this rate varies considerably with age: 85% among women under age 20 compared with 33% for women 35 and over. Newborns whose mothers live in urban areas are better protected (73%) than those from rural areas (63%). Iron supplementation coverage has improved slightly since 2000, although only 28% of mothers were given iron pills when they were pregnant. Overall, 39% of births in the last five years were delivered by a health professional, and only 28% of births took place in a health facility. These proportions both decrease with subsequent births and are higher in urban areas than in rural areas.

4. **Vaccination of Children**

Rwanda has a good record on vaccination rates and the DHS confirms this trend. Immunization coverage is relatively high in Rwanda with 75% of children age 12-23 months fully vaccinated and only 3% having received no vaccines. Coverage rates are high (97%) for the first doses of BCG, first DPT and first polio, but there is a 10% dropout rate for DPT and 13% for polio. Measles coverage is at 87%. Immunization coverage is low in urban areas especially Kigali City where only 62% of children are fully immunized.

5. **Treatment of Childhood Illnesses**

Among all U5 children, 17% had symptoms of acute respiratory illness (ARI) and 26% had symptoms of fever in the two weeks before the survey. Treatment from a health facility/provider was sought for only 51% of these children. Children most likely to be taken to a health provider were between the ages of 6-11 months, from urban areas, and had mothers with a secondary education. Among children who had diarrhea, 26% were taken to a health provider, 12% were given an oral rehydration packet and 32% received some form of oral rehydration treatment.

6. **Breastfeeding and Supplementation**

Breastfeeding in Rwanda is of rather long duration with 97% of children still nursing between 10-11 months. An estimated 90% of mothers exclusively breastfeed children under six months and the introduction of other liquids or foods among children under two months is rare (4%). The introduction of solid foods at six months, however, is low with only 69% of children 6 to 9 months receiving complementary food.

7. **Poor Nutritional Status of Children**

Height-for-age measurements show that 45% of children have chronic malnutrition with 19% exhibiting its severe form. Weight-for-height measures of acute malnutrition reveal that 4% of children are wasting and 1% are severely so. Wasting is highest among children 12-23 months which corresponds to a period of increased weaning and exposure to illness. The highest wasting of children is seen in Kigali City (8%). Weight-for-age reflects both chronic and acute malnutrition and reveals 22% of children in Rwanda are underweight and 4% are severely underweight.
8. Anemia Testing
At the national level 56% of children 6-59 months have some form of anemia; 20% with a slight form, 27% moderate, and 9% with a severe form of anemia. Children in urban areas and especially Kigali City exhibit more anemia than in rural areas. Women are less affected by anemia than children (33%) but follow similar severity and geographic trends.

9. Early Childhood Mortality
With an U5 child mortality rate of 152 deaths per 1,000 live births, about one in seven children dies before reaching their fifth birthday. Infant mortality is 86 deaths per 1,000 live births showing that a little over half of infant and child deaths take place during the first year of life. The neonatal mortality rate is 37 per 1,000 and post-neonatal mortality is 49 deaths per 1,000 live births. U5 mortality rates have returned to lower levels than those in the 1992 survey following a peak in mortality in the late 1990s. Relative to other countries, last year Rwanda was ranked as having the 11th worst child health indicators. Renewed emphasis on maternal and child health issues – including family planning and malaria prevention and treatment among pregnant women and children – is expected to improve these statistics.

10. Knowledge of HIV/AIDS
General awareness of HIV/AIDS is nearly universal among men and women of reproductive age in Rwanda. A large majority of women (90%) and nearly all men (99%) believe there is a way to avoid HIV and could name at least one method of protection with no substantial differences in knowledge by age, marital status, residence, region or education.

11. Use of Condoms
Rates of condom use among women and men who have been sexually active during the previous 12 months was low with only 3% of women and 5% of men reporting use. Condom use is higher during sex with a non-cohabiting partner (20% for women and 34% for men), in urban areas especially Kigali City, and among individuals who are not now and never have been in union.

12. HIV Testing and Prevalence Rates
Results of Rwanda’s HIV prevalence show an overall rate of 3.0% (3.6% for women and 2.3% for men). Data suggest that women are contracting HIV at a younger age than men and they reach their peak level of infection earlier than do men. For either sex, seroprevalence in cities is approximately three times higher than in rural areas with Kigali City showing a substantially higher prevalence rate than other regions.
<table>
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<tr>
<th>FERTILITY AND CONTRACEPTIVE USE</th>
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<tr>
<td>Total fertility rate (per woman).</td>
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<td>Global fertility rate (per 1,000 women).</td>
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<tr>
<td>Crude birth rate (per 1,000 population).</td>
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<td>Percentage of women in union currently using any method of contraception.</td>
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<tr>
<th>ANTENATAL CARE AND DELIVERY</th>
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<td>Percentage of women (live births) who received antenatal care from a health professional.</td>
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<td>Percentage of live births delivered by a health professional.</td>
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<td>Percentage of live births delivered in a health facility.</td>
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<tr>
<th>BREASTFEEDING AND NUTRITIONAL STATUS OF CHILDREN</th>
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<tr>
<td>Percentage of children &lt;6 months exclusively breastfed.</td>
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<td>Percentage of children 6-9 months receiving complementary food.</td>
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<td>Percentage of children classified as stunted (&lt;-2 SD height-for-age).</td>
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<tr>
<td>Percentage of children classified as wasted (&lt;-2 SD weight-for-height).</td>
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<tr>
<td>Percentage of children classified as underweight (&lt;-2 SD weight-for-age).</td>
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<tr>
<th>VACCINATION AND TREATMENT OF CHILDHOOD ILLNESSES</th>
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<tr>
<td>Percentage of children age 12-23 months fully vaccinated.</td>
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<tr>
<td>Percentage of children age 12-23 months fully vaccinated against BCG.</td>
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<tr>
<td>Percentage of children age 12-23 months fully vaccinated against DPT.</td>
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<tr>
<td>Percentage of children age 12-23 months fully vaccinated against Polio.</td>
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<tr>
<td>Percentage of children age 12-23 months vaccinated against Measles.</td>
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<tr>
<td>Percentage of U5 children with symptoms of ARI or fever for whom treatment was sought from a health facility/provider.</td>
</tr>
<tr>
<td>Percentage of U5 children with diarrhea for whom treatment was sought from a health facility/provider.</td>
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<tr>
<td>Percentage of U5 children with diarrhea given ORT or increased fluids.</td>
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<table>
<thead>
<tr>
<th>HIV/AIDS</th>
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<tr>
<td>Percentage of women age 15-49 HIV positive.</td>
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<tr>
<td>Percentage of men age 15-49 HIV positive.</td>
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<tr>
<td>Percentage of sexually active women who used a condom during their last sexual encounter with a non-cohabiting partner.</td>
</tr>
<tr>
<td>Percentage of sexually active men who used a condom during their last sexual encounter with a non-cohabiting partner.</td>
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### ACRONYMS

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<thead>
<tr>
<th>Acronym</th>
<th>Description</th>
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<tbody>
<tr>
<td>ACT</td>
<td>Artemisinin-based Combination Therapy</td>
</tr>
<tr>
<td>ADF</td>
<td>African Development Forum</td>
</tr>
<tr>
<td>AIDS</td>
<td>Acquired Immuno-Deficiency Syndrome</td>
</tr>
<tr>
<td>ANC</td>
<td>Antenatal care</td>
</tr>
<tr>
<td>ARI</td>
<td>Acute Respiratory Infection</td>
</tr>
<tr>
<td>ART</td>
<td>Anti Retroviral Treatment</td>
</tr>
<tr>
<td>ARV</td>
<td>Anti Retroviral (Drugs)</td>
</tr>
<tr>
<td>AQ</td>
<td>Amodiaquine</td>
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<td>BASICS</td>
<td>Basics Support for Institutionalizing Child Survival</td>
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<tr>
<td>BUFMAR</td>
<td>Office for the Not-for-Profit Medical Facilities in Rwanda</td>
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<td>CAMERWA</td>
<td>Central Drug Purchasing Agency for Rwanda</td>
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<td>CBO</td>
<td>Community Based Organisation</td>
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<tr>
<td>CDD</td>
<td>Childhood Diarrheal Diseases</td>
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<td>CEPEX</td>
<td>Central Public Investments and External Finance Bureau</td>
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<td>Dry Blood Spot PCR</td>
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<td>Department for International Development, United Kingdom</td>
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<tr>
<td>DHMT</td>
<td>District Health Medical Team</td>
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<td>DHS</td>
<td>Demographic and Health Survey</td>
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<td>DOTS</td>
<td>Directly Observed Treatment Short Course</td>
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<td>EBF</td>
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<td>Expanded Programme for Immunisation</td>
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<td>Faith Based Organisation</td>
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<td>FOSA</td>
<td>Health Facility</td>
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<td>Family Planning</td>
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<td>FSP</td>
<td>Financial Sustainability Plan</td>
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<td>GAVI</td>
<td>The Global Alliance for Vaccines and Immunization</td>
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<td>GDP</td>
<td>Gross Domestic Product</td>
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<tr>
<td>Acronym</td>
<td>Definition</td>
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<tr>
<td>GFATM</td>
<td>Global Fund for AIDS, Tuberculosis, and Malaria</td>
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<tr>
<td>GOR</td>
<td>Government of Rwanda</td>
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<td>GTZ</td>
<td>Gesellschaft für Technische (German Technical Cooperative Agency)</td>
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<td>HEA</td>
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<td>HIV</td>
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<td>HF</td>
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<td>Health Sector Strategic Plan</td>
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<td>Health Worker</td>
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<td>Information, Education, Communication</td>
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<td>IMCI</td>
<td>Integrated Management of Childhood Illnesses</td>
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<td>Infant Mortality Rate</td>
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<td>IPT</td>
<td>Intermittent Presumptive Treatment for Malaria</td>
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<td>ITN</td>
<td>Insecticide Treated Net</td>
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<td>IUD</td>
<td>Intra-uterine Device</td>
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<td>JICA</td>
<td>Japanese International Cooperative Agency</td>
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<td>KAP</td>
<td>Knowledge, Attitude and Practices</td>
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<td>KHI</td>
<td>Kigali Health Institute</td>
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<td>National Referral Laboratory</td>
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<td>MAP</td>
<td>The World Bank Multi-Country AIDS Program</td>
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<td>MCH</td>
<td>Maternal and Child Health</td>
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<td>MDG</td>
<td>Millennium Development Goal</td>
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<td>MDR</td>
<td>Multi-Drug Resistant (TB)</td>
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<td>MIGPROFE</td>
<td>Ministry of Gender and Women Promotion</td>
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<td>MINAGRI</td>
<td>Ministry of Agriculture</td>
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<td>MINECOFIN</td>
<td>Ministry of Finance and Economic Planning</td>
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<td>MINEDUC</td>
<td>Ministry of Education, Science, Technology, and Research</td>
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<td>MINALOC</td>
<td>Ministry of Local Government and Social Service</td>
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<td>MINISANTE</td>
<td>Ministry of Health</td>
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<td>MNCH</td>
<td>Maternal, Neonatal and Child Health</td>
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<td>MNCHA</td>
<td>Maternal, Neonatal and Child Health Assessment</td>
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<td>MTEF</td>
<td>Medium Term Expenditure Framework</td>
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<tr>
<td>NGO</td>
<td>Non-Governmental Organisation</td>
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<td>NHA</td>
<td>National Health Accounts</td>
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<td>NHS</td>
<td>National Health Strategy</td>
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<td>ORT</td>
<td>Oral Rehydration Therapy</td>
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<tr>
<td>Acronym</td>
<td>Definition</td>
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<tr>
<td>OVI</td>
<td>Objectively Verifiable Indicator</td>
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<td>PCR</td>
<td>Polymerase Chain Reaction</td>
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<td>PEM</td>
<td>Protein-Energy Malnutrition</td>
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<td>PETS</td>
<td>Public Expenditure Tracking Survey</td>
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<tr>
<td>PLWHA</td>
<td>People Living With HIV and AIDS</td>
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<td>PMTCT</td>
<td>Prevention of Mother-To-Child Transmission (of HIV)</td>
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<td>PNILP</td>
<td>National Malaria Control Programme</td>
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<td>PNILT</td>
<td>National Tuberculosis Control Programme</td>
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<td>PRSP</td>
<td>Poverty Reduction Strategy Paper</td>
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<td>RAMA</td>
<td>Rwanda’s Medical Insurance Agency</td>
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<td>RED</td>
<td>Reaching Every District</td>
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<tr>
<td>RRP+</td>
<td>Le Réseau Rwandais des Personnes Vivant avec le V.I.H.</td>
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<tr>
<td>RWF</td>
<td>Rwandan Franc</td>
</tr>
<tr>
<td>SOWC</td>
<td>State of the World’s Children</td>
</tr>
<tr>
<td>SP</td>
<td>Sulfadoxine-Pyrimethamine</td>
</tr>
<tr>
<td>STI</td>
<td>Sexually Transmitted Infection</td>
</tr>
<tr>
<td>SWAp</td>
<td>Sector Wide Approach</td>
</tr>
<tr>
<td>TB</td>
<td>Tuberculosis</td>
</tr>
<tr>
<td>TRAC</td>
<td>AIDS Treatment and Research Centre</td>
</tr>
<tr>
<td>UNAIDS</td>
<td>The Joint United Nations Program on HIV/AIDS</td>
</tr>
<tr>
<td>UNICEF</td>
<td>United Nations Children’s Fund</td>
</tr>
<tr>
<td>USAID</td>
<td>United States Agency for International Development</td>
</tr>
<tr>
<td>U5</td>
<td>Children Under Age 5</td>
</tr>
<tr>
<td>U5MR</td>
<td>Children Under Age 5 Mortality Rate</td>
</tr>
<tr>
<td>VCT</td>
<td>Voluntary Counselling and Testing</td>
</tr>
<tr>
<td>WHO</td>
<td>World Health Organisation</td>
</tr>
</tbody>
</table>
EXECUTIVE SUMMARY

Rwanda’s high maternal, neonatal and child mortality rates rank among the most severe in the world. National indicators showed a sharp decline in the health status of mothers and children following the events of 1994, and they are only recently returning to levels seen in the early 1990s. Improvements to the health status of women and children over the past five years are promising; however they lag behind improvements seen in neighboring countries with comparable disease burden and economic constraints. This discrepancy reveals a reality that proven health interventions are not effectively reaching the Rwandan women and children in need.

In recognition of this health imperative, Rwandan leadership has taken action and proven their commitment to the health of Rwanda’s mothers and children by establishing maternal and child health programs within the Ministry of Health. The United Nations Children’s Fund, the United States Agency for International Development, the World Health Organization, and the World Bank were asked by the Ministry of Health to undertake a rapid assessment of current maternal and child health status and services. Together with the support of non-governmental and faith-based organizations, and other Ministries (Ministry of Finance and Economic Planning and Ministry of Gender and Women Promotion) Rwanda’s existing maternal, neonatal and child health programs were evaluated in order to build upon successes, identify weaknesses and offer recommendations for strengthening the country’s MCH strategies.

Methods

The initial phase of the assessment consisted of an extensive review of national level documents and reports as well as the existing qualitative and quantitative data from formal publications and unpublished literature. This review informed the development of survey instruments to rapidly collect data through key informant and focus group interviews.

Key informant interviews were held at the central level with MINISANTE leaders including the Minister of Health, the Secretary General, the directors of Planning, Finance and Human Resources, unit chiefs and coordinators of individual health programs, and policy makers in the ministries of Finance, Education and Gender and Family Promotion. Also interviewed were representatives of leading international development partners. Provinces selected as survey areas were Ruhengeri, Cyangugu, Gitarama and Kigali-Ngali and key informant interviews were held with Prefêts and health district officers from each. Focus group interviews were conducted at health centers in the selected provinces and were separately comprised of women of childbearing age and locally considered opinion leaders; all focus group participants were identified by health center staff and local coordinators.

Following interviews, assessment teams made observations at the sites, held discussions and prepared syntheses of findings. Findings were consolidated and codified according to common themes among the four provinces and recommendations were identified. Feedback from Rwandan leaders and stakeholders following a presentation of
preliminary findings and recommendations, as well as feedback on a draft work plan were incorporated into the recommendations and work plan of this final report.

Findings
Malaria, anemia, acute respiratory infections, diarrhea, malnutrition, neonatal conditions and HIV/AIDS constitute the leading causes of under-five child morbidity and mortality in Rwanda. According to the literature, there are twelve proven interventions that if taken to scale could reduce mortality from these conditions by almost two-thirds. Yet, the assessment found that none of these interventions reach over half of the targeted population with the exception of Vitamin A and measles vaccination.

The assessment team found a shortage of motivated and qualified staff at the central, district and health center levels. Among staff, very few are trained in MNCH (IMCI has not yet been introduced at the facility level), a disproportionate amount of time is spent on administrative tasks as opposed to patient care and there is limited supervision focused on child health. While the team did not encounter any clinic stock-outs of essential drugs, they did discover a trend whereby first care seeking for sick children includes home remedies, prayer, and direct purchases from pharmacies and informal drug vendors. It was also noted that ITN coverage is low but improves when cost is subsidized and NGOs assist with promotion.

Overall geographical access to health services is good but transportation and communication barriers significantly limit care seeking behavior and effective referral for secondary care. With apparently high usage of non-traditional provider services, it is important to further study usage patterns and the quality of care provided. Cost remains a major barrier to care with low mutual health insurance subscription rates (approximately 30% of the population are mutuelle members), and relatively high costs for drugs, commodities and services, especially for the rural and poor children who bear the highest burden of preventable mortality.

Quality assurance and demand for health services needs improvement beginning with district level supervision of health centers and hospitals, and community supervision of health animateurs. The perception of quality is key to increasing demand, and community members consistently indicated that a quality care facility is one that (1) makes them feel welcome (2) provides drugs (3) has providers who are perceived to be skilled and (4) provide a diagnosis for an ailment. The institutional capacity of the health sector is in need of improvement especially in the areas of district level development planning for newborn and child health, a coordinated district and national health information system that collects data using child health indicators, and coordination between administrative and health districts focused on implementing proven child health interventions. Strong leadership within the maternal and child health services of MINISANTE is critical.

Recommendations
Implementation and scale up of evidence based MCH interventions is multi-sectoral and hence requires shared commitment and collaboration among the key stakeholders within Rwanda’s public and private sectors. The most cost effective way to deliver the
interventions is to integrate them into a comprehensive package of services that begins before pregnancy and continues throughout childhood. Success in getting this package to beneficiaries demands coordination between the national and district level, harmonization of the newly formed health and administrative districts, as well as careful district level planning. Informed decisions at the national, district and community levels need to be data-driven and rely upon routine use of an integrated and high quality health information system.

Specific priority recommendations for the early development of maternal and child health programs are to establish structure, function, staffing and technical assistance needs. It is also crucial to accelerate training, revise pay and benefits, and establish incentives for health and management personnel throughout the health system. For each technical area, priority recommendations are listed in the final section of the assessment report. Following are highlights from those recommendations. **Family Planning/Birth Spacing:** develop IEC messages/materials on the value of birth spacing as a child survival intervention and incorporate into onsite training of MCH nurses. **Antenatal Care, Delivery and Newborn Care:** create a unique service package for each ANC visit, corresponding with the course of pregnancy. Develop newborn and child health program performance indicators for use at all levels and introduce improvements identified by communities to enhance facility deliveries, including delivery position choice, improved privacy and courtesy. **PMTCT/Pediatric HIV/ART:** it is vital that the new director of maternal and child health services take an active role in the PMTCT Working Group, as well as establish programmatic linkages between maternal and child health programs (and Desk Heads) and TRAC. Integrate HIV/ART/PMTCT into Newborn/IMCI algorithms to expand entry, identification of infants and children needing pediatric HIV care and support, and perform an analysis of provider responsibilities to ensure that essential MCH services are adequately addressed. Conduct an in-depth baseline study to identify needs and establish detailed mapping of existing interventions and distribution of resources for treatment, care and support of infected and affected children in the country. **IMCI:** Focus on ARI, diarrhea and malaria while developing an implementation strategy for IMCI and finalize/validate training materials in the Rwandan context. **Malaria:** mobilize resources to subsidize ITNs for not only U5 children but also for expectant mothers, and develop a scale up plan for home based treatment of fever.

Continued commitment and support for successful initiatives in the national Poverty Reduction Strategy Paper including promotion of health *mutuelles* and the use of community based health *animateurs* are central to minimizing financial and geographic barriers to health services. Also, focus on delivery of the twelve proven child health interventions in provinces or districts with the lowest coverage and highest U5 mortality as well as on families in the lowest socioeconomic quartile throughout the country will enable considerable progress toward achieving universal coverage.

It is hoped that the Maternal, Neonatal and Child Health Assessment and future collaboration among all involved organizations will assist the Rwandan Ministry of Health with maternal and child health policy and guideline development, advocacy for resource allocation, and national monitoring and evaluation of programs and services.
I. Introduction

Purpose and Audience for Assessment Document

The poor health status and increasing threats to the survival of the Rwandan child has prompted national leadership to sound a call to action to identify causes and prioritize measures that will improve this situation. In response to data indicating that child mortality rates in Rwanda were increasing rather than decreasing, a multilateral team was formed with representation from UNICEF, USAID, the World Bank, the World Health Organization, and the NGO community in order to assess the status of child health in Rwanda and inform the new Maternal and Child Health Unit in the Ministry of Health (MINISANTE).

The National Maternal, Neonatal and Child Health Assessment (MNCHA) was undertaken to provide the Government of Rwanda (GOR) and its development partners with strategic guidance on reducing infant and child deaths and improving the health status of children in Rwanda. The intended audience for this report includes the GOR, particularly the Ministry of Health (MINISANTE), the Ministry of Finance and Economic Planning (MINECOFIN), the Ministry of Education, Science, Technology, and Research (MINEDUC), the Ministry of Local Government and Social Services (MINALOC), the Ministry of Agriculture (MINAGRI) and the Ministry of Gender and Women Promotion (MIGEPROFE), the international and donor communities, non-governmental organizations (NGOs), community based organizations (CBOs), faith-based organizations (FBOs) and the private and not-for-profit providers of health services in Rwanda.

Organization of Document

The document will overview the purpose and methods of the MNCHA, describe the existing data on maternal, neonatal and child morbidity and mortality, describe the existing services and implementation environment, and summarize the key findings and recommendations. Key findings and recommendations are first organized according to MNCH program areas and subsequently organized to respond to the objectives listed in the Health Sector Strategic Plan: 1) geographic access; 2) financial access; 3) quality and demand; 4) availability of and access to drugs, vaccines and consumables; 5) human resources; 6) and institutional capacity. The MINISANTE’s health policy objective of strengthening national referral hospitals and research institutions was beyond the scope of this assessment.

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1 According to the State of the World's Children Report (UNICEF 2005), the Rwandan infant mortality rate stands at 118 deaths per 1000 live births, an increase from 107 per 1000 (DHS 2000); the under five mortality rate (UMR) increased to 203 per 1000 from 196/1000 (DHS 2000). Three years ago, Rwanda’s U5 mortality rate was ranked 18th worst in the world; two years ago, it was 15th; last year it had slipped into 11th position. Preliminary 2005 Demographic and Health Survey data indicate that the situation may be improving.
Scope and Limitations of Document

Scope

This report summarizes findings and includes recommendations from the MNCHA for strategies that capitalize on strengths and capacities of the GOR, development partners and communities themselves to reduce the burden of disease faced by the Rwandan child. It also contains costing information and guidance on implementation for evidence based interventions that are known to prevent and treat the most common and most lethal newborn, infant and childhood conditions. These strategies and interventions begin with the health of the parents prior to conception and protect the child through gestation, birth, the neonatal period, infancy and young childhood. In order to facilitate the GOR’s immediate action on the proposals contained in this report, 6 and 18 month work plans (Annex 8) have been developed based on recommendations with high temporal priority.

Considering the role of the mother in the life-cycle continuum of care, the assessment included some aspects of maternal health that have an impact on the reduction of neonatal and child mortality but did not attempt to be a comprehensive analysis of all maternal health services. The March 2005 Lancet series on neonatal survival stipulates that among the 130 million infants born every year, about 4 million die in the first weeks of life due to maternal complications. The MNCHA and report therefore include family planning and birth spacing as effective interventions that promote maternal, neonatal and child health.

Limitations

This report is the result of a rapid assessment conducted in early June 2005. The timing, short duration, and specific focus of the assessment have led to some limitations.

The report does not address in detail all of the political, institutional, behavioral and socio-economic factors that affect the health and survival of children although there are substantive observations and recommendation related to the “implementation environment” in which child health strategies and interventions will be taken forward. However, this implementation environment is highly dynamic and there have been a number of significant changes since the assessment was conducted which may have a bearing on the utility and relevance of several recommendations.

The assessment utilized the most recent available data from key population-based surveys (DHS, MICS), facility surveys (SPAS), special studies (NGO data) and MINISANTE surveillance and service information systems (SIS). It also relied on UN, USAID, NGO and MINISANTE publications that contained child health status based on diverse data sources. As is common, there are some differences in the epidemiological findings, depending upon the data source. Another limitation that should be noted is that the assessment team only had access to nationally representative data on family and child health from the 2000 Rwanda Demographic and Health Survey (DHS), the 2000 Multiple Indicator Cluster Survey (MICS) and estimates contained in the annual reports on the
State of the World’s Children (2001-2005). Thus, the findings in this section will need to be updated once new data is available, especially the planned 2005 DHS and MICS surveys.

Another constraint in the data is a reliance on facility based health service statistics, which do not include an increasing amount of care delivered through community health workers or home based treatment. Future analyses can hopefully take advantage of community based surveillance systems for more accurate morbidity, mortality and service data.

Finally, this assessment did not include primary data collection, nor was it based on secondary analysis performed by the team. Because this was a rapid assessment, there may well be additional sources of data, especially from individual projects or private services that are not included.

Acknowledgements

The MNCHA team would like to acknowledge and thank the following individuals and their staff for generously sharing their time and expertise:

Dr. Jean Damascène Ntawukuriryayo, Minister of Health  
Dr. Ben Karenzi, Secretary General, Ministry of Health  
Ms. Valérie Nyirahabineza, Ministry of Gender and Family Promotion  
Professor Romain Murenzi, Minister of Education  
Mr. Donald Kaberuka, Minister of Finance and Economic Planning

The team would also like to acknowledge and thank leaders in the donor community, including the Cooperation Belge, the Department of International Development (DFID) for the United Kingdom, European Union (EU), Gesellschaft für Technische (GTZ – German Technical Cooperative Agency) and the Japanese International Cooperation Agency (JICA) for sharing their time and expertise. In the non-governmental community, the team would like to thank IntraHealth for their financial and technical contributions, and the International Rescue Committee and World Relief for their contributions of time and knowledge.

The MNCHA team would like to acknowledge and thank the civil servants, health professionals, community leaders and mothers from Cyangugu, Gitarama, Ruhengeri and Kigali-Nigali who generously gave us their time, the benefits of their experience, their opinions and insights. They are at the center of this report.
II. Maternal, Neonatal, and Child Health Assessment Purpose and Methods

Situational Context and Objectives of the MNCH Assessment

Rwanda’s maternal, neonatal, and child health indicators are among the poorest in the world. As will be discussed further in Section IV, maternal mortality in the country is approximately 1,071 per 100,000 live births, an increase over pre-genocide levels. Infant and child mortality rates have actually increased since 2000 according to UNICEF and DHS data and currently stand at 118 and 203 per 1000 respectively (UNICEF 2005, DHS 2000).

Recognizing the declining state of the Rwandan child, the leadership of the Ministry of Health called upon the United Nations Children’s Fund (UNICEF), the United States Agency for International Development (USAID), the World Health Organization (WHO), and the World Bank to spearhead this evaluation with MINISANTE, MINECOFIN, and MIGIPROF. Non-governmental organizations (NGOs) and faith-based organizations (FBOs) also supported the assessment. The purpose of the exercise was to assess the effectiveness of the Rwandan child health program, and to provide a framework for future interventions to reduce the unacceptably high levels of infant and child mortality.

The objectives of the assessment were to:

- evaluate progress toward goals set forth for maternal and child health (MCH) in Rwanda’s National Health Strategy (NHS) and outlined in the Poverty Reduction Strategic Plan (PRSP);
- provide guidance on how to build on successes and offer recommendations for steps to address areas of weakness in the current health system;
- provide a financial analysis and costing information to achieve GOR goals in child health; and
- provide an advocacy tool for non-traditional donors in health to support child health programs in Rwanda.

Underscoring the priority placed on improving the status of MCH in Rwanda, MINISANTE has established maternal and child health services responsible for articulating clear maternal, neonatal, and child health (MNCH) policies, developing guidelines and tools for strengthening services in country, overseeing national monitoring and evaluation specific to MNCH, and galvanizing policymakers throughout the GOR to support greater resource allocation in MNCH. This report will be a guiding document for the maternal and child health services. It is hoped, as well, that donor and technical agencies, NGOs, and FBOs will use this document to inform their own decision-making and resource allocation, recognizing that creative multi-sectoral approaches and financial assistance strategies are necessary if Rwanda is to reverse current trends and, ultimately, achieve the Millennium Development Goals.
Assessment Approach and Methods

Multi-agency Coordination Team and Provincial Field Visit Teams

The assessment team was comprised of external representatives from UNICEF, USAID, WHO, The World Bank and Basic Support for Institutionalizing Child Survival (BASICS) as well as a cadre of in-country health sector professionals provided by MINISANTE and participating NGOs and FBOs (Annex 1: Assessment Team Members).

Timeframe

In late 2004, MINISANTE established a Child Health task force to plan the MNCHA, draft terms of reference and position descriptions, identify technical staff to conduct the evaluation, develop survey instruments as well as organize focus groups and key informant interviews. Members of the assessment team convened at UNICEF offices on June 5, 2005 to review assessment objectives and protocols. The majority of key informant and focus group interviews were conducted between June 6 and 10, with additional interviews until June 15th.

Rapid Methodology

Review of Resource Documents and Existing Data

The MNCHA involved both qualitative and quantitative methods. An extensive desk review of national level documents and reports was conducted in the months prior to survey work in order to capture a broad context of qualitative and quantitative data from formal publications and the existing unpublished literature (Annex 2: Bibliography and Data Sources). This review informed development of survey instruments for use with central, provincial, and district levels of the health system, community groups and national development partners.

Key Informant Interviews

Prior to commencing provincial site visits, the team conducted key informant interviews with leadership at the central level of MINISANTE, including the Minister of Health, the Secretary General and the directors of Planning, Finance and Human Resources. Group interviews were held with unit chiefs and coordinators of individual health programs in MINISANTE. The team also met with representatives of development partners including: Coopération Technique Belge, the United Kingdom’s Department for International Development (DFID), Japan International Cooperative Agency (JICA), European Union (EU), and Gesellschaft für Technische (GTZ – German Technical Cooperative Agency). Assessment team members also interviewed high-level policy makers in the ministries of Finance, Education and Gender and Family Promotion.

The team then held in-depth interviews with Preféts at the provincial level, followed by one-on-one meetings with health district officers. Within health districts, health centers were chosen to represent urban and rural conditions. For each health district, one local
A coordinator was selected to identify health center staff and focus group participants from the surrounding community. At the health center level, interviews were conducted with the health center staff including EPI managers, medical assistants in charge of consultations, midwives responsible for antenatal care (ANC) and delivery, as well as the heads of nutrition and laboratory services.

Provincial Site Visits and Direct Observation/Inventory

The provinces of Ruhengeri, Cyangugu, Gitarama and Kigali-Ngali were selected as survey areas. Ruhengeri is located in the mountainous region of northwest Rwanda and was the focus of the UNICEF team; Cyangugu, nestled along Lake Kivu, forms the southwest part of the country and was surveyed by the USAID team; Gitarama is centrally located and was visited by the WHO team while Kigali-Ngali, a peri-urban province including the nation’s capital, Kigali, was targeted by The World Bank group. A complete list of team members is found in Annex 1.

Focused Group Discussions

At the community level in each province, two separate focus groups were gathered at health centers visited by the assessment team. Staff of the health center and local coordinators identified community members for participation. The first focus group at each health center was comprised of 8-10 women of childbearing age who normally use the health facility for the treatment of their children. The second focus group was made up of 8 to 10 men and women who were considered to be opinion leaders in their communities. Each of these groups included leaders of local cells (the smallest administrative unit in the country made up of at least 10 houses), a teacher, a religious leader and the head of the mutuelle, the facility based health insurance program. Table 1 provides an overview of the number and type of interviews and focus groups carried out as part of the MNCH assessment.

<table>
<thead>
<tr>
<th>Prefecture</th>
<th>Health Center Staff</th>
<th>Community Leaders</th>
<th>Women of Childbearing Age</th>
</tr>
</thead>
<tbody>
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<td>✓✓✓✓</td>
<td>✓✓✓</td>
<td>✓✓✓</td>
</tr>
<tr>
<td>Gitarama</td>
<td>✓</td>
<td>✓✓✓✓</td>
<td>✓✓✓✓</td>
</tr>
<tr>
<td>Kigali-Ngali</td>
<td>✓</td>
<td>✓✓✓</td>
<td>✓✓✓</td>
</tr>
<tr>
<td>Ruhengeri</td>
<td>✓</td>
<td>✓✓✓</td>
<td>✓✓</td>
</tr>
<tr>
<td>Total</td>
<td>3 Interviews</td>
<td>13 Groups</td>
<td>12 Groups</td>
</tr>
</tbody>
</table>

Synthesis and Analysis of Existing Local Data (SIS), Development of Recommendations

Following interviews, provincial teams made observations at the sites, held discussions and prepared syntheses of findings provided by respondents. Teams then reconvened in Kigali to consolidate findings, codifying common themes of MNCH among the four provinces and to identify recommendations to strengthen service provision.
Presentation of Findings, Recommendations and Feedback Session

After consolidating findings from each province, a formal presentation of preliminary findings and recommendations was given on June 16, 2005 at the Premature auditorium located at the Prime Minister’s office to an audience including leadership from MINISANTE, MINECOFIN, MIGEPROFE, diplomatic ambassadors to Rwanda, a cross-section of donors and development partners, including bilateral project leaders, as well as representatives of the NGO and FBO community. Feedback on the presentation was sought to inform the preparation of this final report.

Circulation and Refinement of Written Assessment and Operational Work Plan

With feedback on the formal presentation, the assessment team prepared a draft of recommendations and an associated work plan. These were circulated to members of the team for a critical review of content. An additional fact check was conducted by technical staff of MINISANTE on the text and data, noting disparate figures and their sources. The document in full was then distributed to task force members for review and feedback. With concurrence, the report will be formally presented to MINISANTE senior leadership for dissemination among development partners.
III. Background: Rwanda

Country History and Overview

Having suffered the most efficient genocide in history in 1994, when nearly 1 million lives were lost in a span of 100 days, Rwanda straddles two worlds today. One is of great promise, hope, and industry, as framed in the GOR's overarching development strategy, Vision 2020; the other is the practical reality of rebuilding institutions and infrastructure left in ruins only a decade ago. Rwanda is a small nation with a cultural history of strict adherence to authority. Changes in national policy may easily be disseminated with speed and are often closely observed. It is the most densely populated country in Africa, posing both challenges and opportunities for the provision of health services. Though considerable competition for scarce resources exists, health service delivery points tend to be closer to households than in many parts of the continent.

It is of special interest that according to the Rwanda National Policy on Orphans and Vulnerable Children (OVC), nearly 30% of all Rwandan children (1,264,063) are classified as OVC. This is a direct consequence of the 1994 genocide and the HIV/AIDS epidemic. It is estimated that 1,151,900 children have lost one or both parents; about 100,000 of them live in child headed households (CHH); and numerous others live in households headed by their older siblings aged 18 or more. There are significant numbers of disabled children and children living on the streets. Many children are fostered into families or are living in state or church-sponsored institutions or in boarding schools.

Policy Environment and Directives that Influence Health Service Delivery

Poverty Reduction Strategy

There is considerable policy commitment on the part of the GOR to improve health service delivery in Rwanda. Among core programs of the Poverty Reduction Strategy Paper (PRSP), the GOR aims to strengthen the prevention and treatment of malaria, the major cause of morbidity and mortality in children, and HIV/AIDS. The GOR is also dedicated to improving access and utilization of voluntary family planning services to help decrease maternal mortality through birth spacing and decreasing the incidence of unintended pregnancy.

An important mechanism for strengthening these and other health services is the MINISANTE’s established health insurance system known as mutuelles. Mutuelles enable families to pay a basic annual fee in return for subsidized care throughout the year. In 2005, approximately 30% of Rwandans were members of mutuelles. Increasing access to care through mutuelles decreases the financial barriers for families seeking care for their children.
There are also some examples of performance-based contracting supported by development partners where health facilities receive financial incentives based on improved performance. One project pays community animateurs a fee for providing outreach services and generating demand for services. MINISANTE is considering adoption of this contractual approach as national policy.

As will be discussed further in Section IV, poverty is pervasive in both urban and rural areas of Rwanda, and has significant consequences for MNCH. In 2001, 60% of Rwanda’s population was living below the poverty line with 42% in extreme poverty.2

**Provider and Pharmacy Regulations**

The year 2005 saw a spate of Ministerial Decrees targeting the pharmaceutical industry in Rwanda including the formation of a national committee to oversee pharmacy retailers with responsibilities for quality control, inspection, licensure, and ensuring a basic package of pharmaceutical products. A list of these products is in Annex 7.

With regard to drug importation, laws are in place and have seen recent revisions to ensure quality control upon receipt in Rwanda. Visas and import licenses are issued by the Unit of Pharmacy only after certification and other requirements are met by the exporter. These requirements include manufacture, wholesale, and export of pharmaceuticals licenses, certification of good manufacturing and distribution practices, and accurate packing lists with batch numbers, manufacture dates, appropriate expiry dates (minimum of 2/3 the product’s shelf life), quantities of pharmaceuticals, and the country of origin.

At present traditional medicine providers have not been institutionalized by MINISANTE and therefore no regulations on their practice exist. Interviews and focus group discussions reveal that care seeking commonly involves traditional medicine. Further study is recommended to better understand scope of traditional medicine and the role providers play in the health care of the population.

**Decentralization**

In May 2000, the GOR adopted a decentralization policy whereby powers, authority, functions, responsibilities, and the requisite resources from central government were to be devolved to local governments or administrative divisions. According to the GOR, the decentralization policy was a response to “the inappropriate, highly centralized dictatorial governance of the colonial era as well as post-independence administration in the country [which] excluded the Rwandese population from participating in the determination of their political, economic, and administrative wellbeing.” Prior to enactment of the national policy, MINISANTE had already introduced elements of decentralization, although there were no formal linkages between health district structures and local administrators that were reflected in joint planning. Between 2000 and 2006, a significant barrier to improved linkages between the administrative and health districts is the fact

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that territorial boundaries were discordant. A health district, by definition, required a referral facility, often a catchment area exceeding the geographic area of administrative districts. As this report is prepared, MINALOC has introduced a series of sweeping changes in concert with MINISANTE to harmonize geographic boundaries of the two. The new configuration of provinces/regions, districts, and sectors is captured in Table 2.

Table 2: Health and Administrative District Harmonization

<table>
<thead>
<tr>
<th></th>
<th>2005</th>
<th>Current</th>
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<tr>
<td>Provinces/ Regions</td>
<td>11 plus Kigali Ville</td>
<td>4 plus Kigali Ville</td>
</tr>
<tr>
<td>Administrative Districts</td>
<td>106</td>
<td>30</td>
</tr>
<tr>
<td>Health</td>
<td>40 Health Districts</td>
<td>30 Health Departments</td>
</tr>
</tbody>
</table>

Harmonization was finalized in January 2006 with elections scheduled in March for the new administrative territories. As per MINALOC, health district and health center funds heretofore dispersed by MINISANTE at the central level will be channeled to administrative districts in support of health district and health center activities. The positive implication of the realignment of the administrative districts is that funding may be available at the district level to address child health issues. However, child health has to be viewed as a priority in the community for individuals and groups to mobilize to advocate for funds. Also, the administrative district has to be responsive to the health community in allocating funds to address their priorities, including child health.

Health Sector Financing

Health sector financing in Rwanda is drawn from the national treasury, development partners, an emerging subsidized health security system, and fees-for-service collected at service delivery points. Development expenditures represent 50% of health sector funding, and predominantly support the primary health care strategy of MINISANTE. In 2001, the GOR signed the Abuja Declaration committing the government to increase health sector expenditures, then four percent, to 15% of the national budget by 2010. The GOR has made progress doubling the percentage of expenditures to eight, over half way toward achieving the Abuja target. Table 3 shows the GOR’s national health expenditures between 1998 and 2003.
Background: Rwanda

Table 3: Summary of General NHA Findings, Rwanda, 1998-2002

<table>
<thead>
<tr>
<th>Total population</th>
<th>1998</th>
<th>2000</th>
<th>2002</th>
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<tr>
<td></td>
<td>7.9 million</td>
<td>7.7 million</td>
<td>6.1 million</td>
</tr>
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Exchange rate US$ 1 = RWF 317 / 363 / 475

<table>
<thead>
<tr>
<th>Total nominal gross domestic product (GDP)</th>
<th>RWF 321.7 billion (US$ 2 billion)</th>
<th>RWF 705 billion (US$ 1.8 billion)</th>
<th>RWF 315.6 billion* (US$ 1.7 billion)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total GOR expenditure and net lending</td>
<td>RWF 117.4 billion (US$ 370.4 million)</td>
<td>RWF 150.5 billion (US$ 362.6 million)</td>
<td>RWF 135 billion (US$ 204.1 million)</td>
</tr>
</tbody>
</table>

Total health expenditures (THE) | RWF 31.7 billion (US$ 99.9 million) | RWF 28.5 billion (US$ 72.5 million) | RWF 33.3 billion (US$ 70.1 million) |

Total per capita health expenditure | RWF 4,318 (US$ 12.85) | 3,710 RWF (US$ 10.43) | 4,090 (US$ 12.02)

Total health expenditures as % of nominal GDP

- % GOR total expenditure spent on health care: 5.0% / 4.0% / 4.0%
- Financing sources (as % of THE): 2.5% / 4.7% / 5.1%
- Public (including public firms): 9.9% / 18% / 24.7%
- Private (including private firms): 38.8% / 30% / 41.8%
- Donor: 50.3% / 52% / 33.4%

Household spending

- Total household spending as % of THE: 33% / 26% / 31%
- Out-of-pocket spending as % of THE: 32.3% / 29% / 29%
- Out-of-pocket spending per capita: RWF 1,307 (US$4.12) / RWF 919 (US$2.34) / RWF 1,011 (US$3.21)

Provider (end user) distribution (as % of THE)

- Public facilities: 66% / 69% / 55.6%
- Govt-assisted not-for-profit facilities: 10% / 7% / 24.8%
- Private facilities: 24% / 19% / 19.6%

* Estimated at the Rwanda Debt Relief workshop, 2004


The global estimate of the minimum per capita expenditure for effective health care in developing countries was 34 USD and the average among sub Saharan African countries was estimated at 12 USD. Rwandan health expenditures are low even when compared to the average of sub Saharan African countries. The above table reveals that the total per capita health expenditure for the year 2000 was 8.62 USD with 42% financed by the private sector, 33% by the donor community, and 25% financed by the GOR. To meet the Millennium Development Goals (MDG) and the Abuja commitment, efforts are aiming to increase overall health expenditures from 8.62 USD to 15 USD per capita by the year 2015.

To determine the total cost of providing maternal and child health services, it is necessary to understand the flow of funds through the public, donor and private sectors in Rwanda. An analysis of the Reproductive Health (RH) services reveals that different types of services are financed disproportionately by the GOR, donors, households and the private sector. Figure 1 shows the percentage of total health expenditures that went to RH services and the breakdown of those percentages by funding source and type of service. For RH the GOR is primarily funding curative care and health administration while donors are focused more on prevention and public health. The majority of household funds are utilized for curative care and pharmaceuticals.

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2 Government of Rwanda National Health Accounts, 2002
As an extension of the PRSP, MINISANTE has embarked on a sector-wide approach (SWAp) to healthcare financing, increasing health sector coordination, enhancing national leadership and ownership, as well as strengthening countrywide management and delivery systems. This has lead to the formation of an active Health Cluster Group comprised of leadership from MINISANTE and development partners that meets regularly to improve overall application of health sector resources.

**Estimated Budget**

Using the Marginal Budgeting for Bottlenecks (MBB) tool, an analysis was performed to estimate the total health sector budget according to the SWAp including: human resources, drugs, vaccines and consumables, geographical access, financial access, quality and demand, national referral hospitals, research centers, and institutional support. The SWAp is subdivided to include: IMCI, reproductive health, EPI, nutrition, malaria, HIV/AIDS/STI, TB, epidemics and disaster response, mental health, blindness and physical handicap, environmental health, and behavior change communication (BCC).

Based on epidemiological data from the SWAp and current health service delivery figures specific to IMCI, in addition to inflation and an exchange rate of 1 USD = 560 RWF, the estimated budget for IMCI in 2006 is 99,284 USD (55,599,000 RWF). This budget includes upgrading only the quality of and capacity to meet demand for the IMCI program. To upgrade all other aspects of SWAp including human resources, drugs, vaccines and consumables, geographical access, financial access, national referral hospitals, research centers and institutional support, an additional 1,395,000 USD is needed. Combining the estimates for all IMCI upgrades, the total estimated IMCI budget for 2006 is 1,494,284 USD (836,799,040 RWF).
IV. Status of Newborn and Child Survival in Rwanda

At a minimum, maternal, neonatal, and child health services could potentially benefit 52% of the Rwandan population – the black sections of the population pyramid shown in Figure 2 at right. As Figure 2 indicates, 17% of the Rwandan population is made up of U5 children; 35% of the population are women of childbearing age. Furthermore, ensuring the health of women and mothers benefits the health of the overall population because they are often the household care givers.

Rwanda Maternal and Child Health Epidemiology

Maternal Mortality

In Rwanda, one death in six of women of reproductive age (15-44) is due to maternal causes. Although maternal mortality has declined since the 1994 genocide, levels remain among the highest in the world. Between 1995 and 2000, approximately 1,071 women died per 100,000 live births per year, compared to 611 per 100,000 during 1985-1990. The maternal mortality rate is twice that of neighboring Uganda (505 per 100,000 in 1995) and Tanzania (529 per 100,000 in 1996). Only 7.2% of births in Rwanda occur in facilities capable of emergency obstetric care, and only 18.5% of the total obstetric

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complications are treated.\textsuperscript{6} One indicator highlighting the lack of adequate care for obstetric complications is that only 1.1\% of births are performed by cesarean section. The World Health Organization states that a cesarean rate below 5\% indicates “inadequacy in the availability” of cesarean section to treat obstetric complications.\textsuperscript{7} The following Table 4 contains the distribution of major obstetric complications in Rwanda as quantified in a sample of 733 cases of maternal mortality. Note that figures for pre-eclampsia/eclampsia diagnosis are underreported as a result of poor and inconsistent diagnosis.

<table>
<thead>
<tr>
<th>Major Obstetric Complications</th>
<th>N=733</th>
</tr>
</thead>
<tbody>
<tr>
<td>Complications from spontaneous or induced abortion</td>
<td>50%</td>
</tr>
<tr>
<td>Prolonged and obstructed labor</td>
<td>12%</td>
</tr>
<tr>
<td>Postpartum sepsis</td>
<td>1%</td>
</tr>
<tr>
<td>Hemorrhage</td>
<td>14%</td>
</tr>
<tr>
<td>Pre-eclampsia/eclampsia</td>
<td>0%</td>
</tr>
<tr>
<td>Retained placenta</td>
<td>7%</td>
</tr>
<tr>
<td>Other</td>
<td>16%</td>
</tr>
</tbody>
</table>

Newborn, Infant and Child Morbidity and Mortality

Rwanda has the 11\textsuperscript{th} highest under-five mortality rate (U5MR) in the world. While the past 40 years have seen a substantial drop in the rate of U5MR around the globe, and in sub-Saharan Africa regionally, Rwanda has fallen behind. Between 1960 and 2003, the U5MR in Rwanda has stayed virtually the same, 206 deaths per 1,000 live births in 1960, 203 in 2003. Meanwhile, the U5MR in neighboring countries has dropped; in Tanzania from 241 deaths per 1,000 live births in 1960 to 165 in 2003, in Uganda from 224 to 140, and in the Democratic Republic of Congo from 302 to 205.

Just as the U5MR is Rwanda remains high, many areas of child health in Rwanda are not progressing as well as they could, and in some cases they are declining. In 1998, the Vitamin A supplementation coverage rate for children between 6 and 59 months was 75\%. By 2002, the coverage rate had dropped to 36\%, once again startlingly low when compared to Tanzania’s coverage rate of 94\% or that of sub-Saharan Africa at large, 71\%. Similar slips are seen in the area of malaria control. Only 6\% of the under-five population of Rwanda slept under a bed net in 1999-2003. The percentage for sub-Saharan Africa regionally is more than double at 14\%. Significant action and resources are needed to strengthen child health programs in Rwanda in order to mirror progress made around the world and to ensure a healthy future for the country.

Table 5: Rwanda U5 Mortality, Infant Mortality and Under Five Ranking 1960-2005

<table>
<thead>
<tr>
<th>Year of Publication (year of data)</th>
<th>U5M Rank (lower rank is worse)</th>
<th>U5MR (deaths under five per 1000 births)</th>
<th>IMR (deaths under one per 1000 births)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1960</td>
<td>Not available</td>
<td>206</td>
<td>122</td>
</tr>
<tr>
<td>1998 (1996)</td>
<td>19</td>
<td>170</td>
<td>105</td>
</tr>
<tr>
<td>2001 (1999)</td>
<td>18</td>
<td>180</td>
<td>110</td>
</tr>
<tr>
<td>2003 (2001)</td>
<td>15</td>
<td>183</td>
<td>96</td>
</tr>
<tr>
<td>2004 (2002)</td>
<td>15</td>
<td>183</td>
<td>96</td>
</tr>
</tbody>
</table>

Source: State of the World’s Children

DHS statistics for Rwanda corroborate this trend, although they are slightly different from the estimates published in the State of the World’s Children. Two years prior to the genocide, the U5MR stood at 151 while IMR was 85. Six years after the war, in 2000, U5MR had risen to 196 while IMR was 107. According to available DHS data represented in Table 6 below, infant and under five mortality rates have gradually dropped since 2000 but have not yet reached pre-genocide levels.

Table 6: Under Five Mortality and Infant Mortality 1992 and 2000

<table>
<thead>
<tr>
<th>Year</th>
<th>U5MR (deaths under five per 1000 births)</th>
<th>IMR (deaths under one per 1000 births)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1992</td>
<td>151</td>
<td>85</td>
</tr>
<tr>
<td>2000</td>
<td>196</td>
<td>107</td>
</tr>
<tr>
<td>2005</td>
<td>152</td>
<td>86</td>
</tr>
</tbody>
</table>

Source: Demographic Health Surveys 1992, 2000, 2005 (preliminary)

Figure 3 below compares the number of newborn, infant, and total U5 deaths in Rwanda between 1975 and 2000. Given the high rate of U5 mortality, it is not surprising that newborn deaths comprise less than one quarter of all deaths in U5 children. In the period 1975-2000, 26% of U5 mortality and 50% of infant mortality occurred to neonates (under one month old). In the period for which the most recent data is available (1996-2000), 22% of U5 mortality and 41% of infant mortality was due to death in the neonatal period.

Figure 3: Newborn, Infant and Child Mortality Trends in Rwanda
Geographic and Socioeconomic Disparities in Infant and Child Mortality

National mortality rates mask significant variations in mortality between provinces, districts and socioeconomic groups. As the following tables indicate, the difference in U5MR is nearly twofold between Kigali and Kibungo. Kibungo also has the highest IMR, while Kigali has the lowest. Table 7 below compares the U5MR and the infant mortality rate of Kigali, Gikongoro and Kibungo.

Table 7: Geographic Disparities in Infant and Child Mortality Rates

<table>
<thead>
<tr>
<th>U5MR (per 1000)</th>
<th>Kigali</th>
<th>Gikongoro</th>
<th>Kibungo</th>
</tr>
</thead>
<tbody>
<tr>
<td>IMR (per 1000)</td>
<td>79</td>
<td>120</td>
<td>142</td>
</tr>
</tbody>
</table>

Source: DHS 2000

According to the PRSP, poverty increased in the late 1980s and early 1990s in Rwanda, reaching its zenith in 1994 among both rural and urban populations. Although poverty has fallen annually since the war, it still exceeds levels predating 1994. Table 8 shows the distribution of poverty among rural and urban households from 1985 until 2000.

Table 8: Movements of Poverty Since 1985: Rwanda

<table>
<thead>
<tr>
<th>Year</th>
<th>Rural</th>
<th>Urban</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>1985</td>
<td>48.4</td>
<td>16.1</td>
<td>45.7</td>
</tr>
<tr>
<td>1990</td>
<td>50.3</td>
<td>16.8</td>
<td>47.5</td>
</tr>
<tr>
<td>1994</td>
<td>82.4</td>
<td>27.5</td>
<td>77.8</td>
</tr>
<tr>
<td>1995</td>
<td>76.6</td>
<td>25.5</td>
<td>72.4</td>
</tr>
<tr>
<td>1996</td>
<td>75.3</td>
<td>25.1</td>
<td>71.1</td>
</tr>
<tr>
<td>1997</td>
<td>74.1</td>
<td>24.7</td>
<td>70.0</td>
</tr>
<tr>
<td>1998</td>
<td>70.7</td>
<td>23.6</td>
<td>66.8</td>
</tr>
<tr>
<td>1999</td>
<td>69.3</td>
<td>23.1</td>
<td>65.4</td>
</tr>
<tr>
<td>2000 est.</td>
<td>67.9</td>
<td>22.6</td>
<td>64.1</td>
</tr>
</tbody>
</table>


At the national level, over 60% of Rwandans live below the poverty line (2000 data). However, in rural areas, where the majority of the population lives, almost 68% live below the poverty line. A myriad of factors contribute to this situation. A strong statistical association exists between household size and poverty. Only 15% of households with one family member are below the poverty line. In contrast, 48% of all households with seven or more members live below the poverty line. Female-headed households are also more likely to be poor than male-headed ones. Table 9 on the following page reveals that children born into the poorest quintile of society in Rwanda are nearly twice as likely to die before their 5th birthday as those born into the wealthiest quintile.
While poverty is experienced throughout the country, it is most acute in Gikongoro, Kigali-Ngali, Butare and Ruhengeri (Table 10). There is an extremely wide gap in household income between urban Kigali and the other provinces. Indeed, 75% of residents in the capital city are in the top expenditure quintile for the country, even when adjusted for regional costs of living. In the provinces of Butare, Kibuye, Kigali-Ngali and Ruhengeri more than 70% of the residents are below the poverty line, a figure disproportionately comprised of women-headed households.9

### Table 10: Poverty Quintiles by Province

<table>
<thead>
<tr>
<th>Province</th>
<th>Quintile 1 (lowest)</th>
<th>Quintile 2</th>
<th>Quintile 3</th>
<th>Quintile 4</th>
<th>Quintile 5 (highest)</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Butare</td>
<td>26.4</td>
<td>23.1</td>
<td>23.6</td>
<td>14.8</td>
<td>12.1</td>
<td>100</td>
</tr>
<tr>
<td>Byumba</td>
<td>23.1</td>
<td>20.0</td>
<td>22.2</td>
<td>15.5</td>
<td>19.3</td>
<td>100</td>
</tr>
<tr>
<td>Cyangugu</td>
<td>26.1</td>
<td>18.6</td>
<td>19.4</td>
<td>20.2</td>
<td>15.8</td>
<td>100</td>
</tr>
<tr>
<td>Gikongoro</td>
<td>32.0</td>
<td>23.2</td>
<td>21.9</td>
<td>15.7</td>
<td>7.2</td>
<td>100</td>
</tr>
<tr>
<td>Gisenyi</td>
<td>11.2</td>
<td>21.5</td>
<td>20.8</td>
<td>25.2</td>
<td>21.3</td>
<td>100</td>
</tr>
<tr>
<td>Gitarama</td>
<td>14.2</td>
<td>19.2</td>
<td>20.0</td>
<td>27.3</td>
<td>19.3</td>
<td>100</td>
</tr>
<tr>
<td>Kibungo</td>
<td>11.2</td>
<td>17.6</td>
<td>21.8</td>
<td>27.4</td>
<td>22.0</td>
<td>100</td>
</tr>
<tr>
<td>Kibuye</td>
<td>20.7</td>
<td>24.9</td>
<td>26.4</td>
<td>18.1</td>
<td>9.9</td>
<td>100</td>
</tr>
<tr>
<td>Kigali-Ngali</td>
<td>29.0</td>
<td>22.7</td>
<td>18.9</td>
<td>17.9</td>
<td>11.5</td>
<td>100</td>
</tr>
<tr>
<td>Kigali-urban</td>
<td>0.7</td>
<td>3.4</td>
<td>7.9</td>
<td>13.3</td>
<td>74.8</td>
<td>100</td>
</tr>
<tr>
<td>Ruhengeri</td>
<td>25.1</td>
<td>25.7</td>
<td>19.4</td>
<td>18.4</td>
<td>11.4</td>
<td>100</td>
</tr>
<tr>
<td>Umutara</td>
<td>16.8</td>
<td>15.4</td>
<td>18.0</td>
<td>26.4</td>
<td>23.4</td>
<td>100</td>
</tr>
</tbody>
</table>


### Special Studies and Community Data

Between March 2004 and February 2005, Save the Children UK carried out a follow-up Household Economic Assessment (HEA) in Gatonde health district in Ruhengeri province. The assessment aimed to update a previous HEA carried out by Save the Children in Ruhengeri.

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Children UK in 2002/2003, collate up-to-date costs of health services and mutuelle membership, and to produce a case study highlighting the relative costs for poorer households to obtain maternal and child health services. The following is a summary of the HEA.

The follow-up HEA found that prices of food and basic household items had increased by an average of 45% since the previous HEA. During the same period, the number of people classified as “poor” had increased and the size of the “very poor” group had decreased. With this apparent improvement, however, came an increase in the income gap between the “poor” and “middle” income groups. At the time of the 2002/2003 study, the middle group earned double that of the poor group, while during the 2004/2005 update the middle group earned three times as much as the poor.

With regards to health care, the most recent HEA found that the number of health episodes treated at a formal health facility had decreased among the poor and very poor groups. This is despite the fact that the quality of care at formal facilities had improved since the first HEA. Among the very poor 75-90% of cases were either treated by traditional means or left untreated. In the poor group 50-75% of cases were treated outside the formal health system or not treated at all. The middle-income group, however, sought formal health services almost 100% of the time. The primary deterrent for the poor and very poor from seeking formal health services was cost. Figure 4 below compares the potential and actual costs for the three income groups in accessing health services for common illness.

As seen in Figure 4, the potential costs for the very poor and poor groups are greater than for the middle income group. This is because, in large part, the poor and very poor are not receiving proper treatment for any episode of malaria. Without treatment, their chances of developing severe or complicated forms of the disease and suffering recurring episodes increase.

Similarly, the percentage of total household income each group has to expend to obtain formal healthcare varies dramatically among the groups. The HEA found that each group currently spends about four to eight percent of their total income on health care. However, for the very poor and poor groups to obtain services for each episode of illness
they experience in a year they would have to spend 52% and 30% respectively of their total income. Compared with 2002/2003 survey data, the follow-up HEA found that understanding and acceptance of mutuelles had increased among all three income groups. Membership is now between 30 and 45% among the two older schemes. Though most people in the middle-income group had joined mutuelles, the very poor and poor groups have more difficulty registering their entire families due to membership costs.

The 2004/2005 HEA found that Gatonde health district had improved the provision of preventive health care to all groups and also managed better quality of and access to available curative care. However, much work remains. The two main causes of mortality, malaria and diarrhea, are keeping infant mortality in the district at a high level and 55% of the population are still unable to access curative care services.

**Causes of Under Five Child Deaths**

**Malaria** is the leading cause of childhood mortality in Rwanda, accounting for nearly 37% of mortality in hospitals. In recent years, the endemicity of malaria has expanded to populations living in mountainous areas of the Great Lakes region where people have less immunity to the disease. Figure 5 shows that malaria accounts for 42% of all health facility consultations for U5 children. The second and third leading causes of health consultations are **acute respiratory infections** (ARI) and **diarrheal diseases**. As seen in Table 11 below, the main causes of pediatric hospital admissions and deaths are malaria, **anemia** and ARI which together account for nearly 66% of hospital deaths.

![Figure 5: Leading Health Consultations for U5 Children](source: Rwanda SIS 2004)

<table>
<thead>
<tr>
<th>Child Conditions</th>
<th>Conditions Treated in Hospitals</th>
<th>Under Five Deaths in Hospitals</th>
</tr>
</thead>
<tbody>
<tr>
<td>Malaria</td>
<td>59.8%</td>
<td>36.8%</td>
</tr>
<tr>
<td>Anemia</td>
<td>13.7%</td>
<td>18.7%</td>
</tr>
<tr>
<td>Acute Respiratory Infection</td>
<td>10.5%</td>
<td>10.3%</td>
</tr>
<tr>
<td>Diarrhea</td>
<td>4.8%</td>
<td>3.9%</td>
</tr>
<tr>
<td>Malnutrition</td>
<td>2.3%</td>
<td>5.2%</td>
</tr>
<tr>
<td>Neonatal Conditions</td>
<td>0.7%</td>
<td>5.4%</td>
</tr>
</tbody>
</table>

*Source: Rwanda SIS, 2004*
According to the Joint United Nations Program on HIV/AIDS (UNAIDS) 2004 Report, the HIV prevalence rate in Rwanda is estimated at 5.1%, and among young pregnant women age 15-24 living in Kigali, prevalence is estimated at 11.6.\(^\text{10}\)

**Common Causes of Childhood Morbidity**

In Rwanda, the main causes of child morbidity are malaria, anemia, acute respiratory infections, and diarrhea. There is also a significant urban/rural differential in incidence of these diseases and also in seeking treatment for them. **Malnutrition** (including anemia) remains the major underlying cause of morbidity and mortality. Malnutrition is a crucial problem that is endemically rife in Rwanda. The most recent multiple indicator cluster survey (MICS) available revealed that 43% of children under 5 years old are stunted, 29% are underweight and 7% have acute malnutrition (MICS 2000).

**Malaria** accounts for the largest percentage of child morbidity, as it is responsible for 59.8% of all visits to Rwandan hospitals for U5 children.\(^\text{11}\) In the 2000 DHS, more than one in four children had a fever in the past two weeks. Fevers are highest in children age 6-11 months.\(^\text{12}\) There is also an urban/rural disparity in fever incidence and also in treatment. In the 2000 DHS, 31% of children in rural areas were reported to have fever, the primary sign of malarial infection, in the past two weeks, as opposed to 19% of children in urban areas.\(^\text{12}\) Also, over half (55%) of children in rural areas do not receive any treatment for their fever, as opposed to only one-third (36%) of children with fever left untreated in urban areas.\(^\text{12}\) Anemia, defined by the SIS to include malaria-related as well as iron-deficiency anemia, is a distant second cause of hospital visits at 13.7% for U5 children.

**Acute respiratory infections** account for 10.7% of visits for U5 children to hospitals. In the 2000 DHS survey, 21% of U5 children showed symptoms of ARI and only 15% of those children were taken to health facilities. ARI is more prevalent in children age 6-11 months and in rural areas.\(^\text{12}\)

**Diarrhea** is the fourth leading cause of hospital visits for Rwandan U5 children at 4.8%.\(^\text{13}\) In the 2000 DHS, 17% of U5 children had diarrhea in the two weeks preceding the survey, and the prevalence of diarrhea is highest in children age 6-23 months and in rural areas.\(^\text{12}\)


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Status of Newborn and Child Survival in Rwanda

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The proportional morbidity attributed to HIV/AIDS is likely to be underestimated due to difficulties involved in the diagnosis of young children, the frequent co-morbidity with opportunistic infections and common childhood illnesses. According to the GOR’s AIDS Treatment and Research Center (TRAC) sentinel site survey reports of 2002, the median HIV prevalence rate in urban sites was 6.9% and 3.0% in rural sites. Also, the number of all cases of tuberculosis (TB) has risen in recent times to 220 cases per 100,000 as a result of the spread of HIV. This rise may also be attributable to an increase in facilities conducting microscopy for all cases of TB and, therefore, documenting cases previously undetected. Although these figures represent the general population, the rise in TB cases is significant for U5 children due to high transmission between parents and children.

Comparison with Regional and Global Trends in Newborn and Child Health Status

Three years ago, Rwanda’s U5MR was ranked 18th worst in the world; two years ago, it was 15th; and last year it slipped into 11th position.14 Among Rwanda’s Central, East and Southern African neighbors, Figure 6 displays Rwanda’s high U5MR ranking. With a rate of 203 deaths per 1,000 live births, Rwanda is second only to the Democratic Republic of Congo which has a U5MR of 205.

Limitations of Available Data

As noted in the Scope and Limitation of Document section of this report, the MNCHA utilized the most recent secondary data available. Another constraint in the data is a reliance on facility based health service statistics, which do not include an increasing amount of care delivered through community health workers or home based treatment. Future analyses will hopefully take advantage of community based surveillance systems for more accurate morbidity, mortality and service data.

V. Newborn and Child Health Interventions Proven to Save Lives

Preventable Child Deaths in Rwanda

According to the 2003 Lancet series on child survival, about 41% of all child deaths occur in sub-Saharan Africa. Results from 42 countries were summarized to estimate the total number of child deaths in 2000. According to these calculations Rwanda was ranked number 16 among 42 countries as having the highest U5 mortality rate. The estimated national total was 54,000 U5 child deaths that year.\textsuperscript{15}

Application of the Lancet analysis of global preventable U5 deaths to the Rwandan U5 mortality rate estimates that nearly two-thirds (34,480) of child deaths could be avoided using the twelve proven preventive and treatment interventions noted in Table 12 below. These twelve interventions are described in detail in the Lancet series on child survival.\textsuperscript{15} Table 12 shows the number of Rwandan U5 deaths that could be prevented by each of the twelve interventions if they reached 99% of the U5 child population. Also, the table indicates the increased coverage needed to reach 99% of the target population in Rwanda.

Table 12: Proven Interventions for the Prevention of U5 Deaths

<table>
<thead>
<tr>
<th>Child Survival Intervention</th>
<th>% Global Preventable U5 Deaths</th>
<th>Estimated Rwandan Preventable U5 Deaths</th>
<th>Estimated Coverage in Rwanda</th>
<th>Increase Needed to Reach 99% Target Coverage</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Oral Rehydration Therapy</td>
<td>15%</td>
<td>8,100</td>
<td>30.2%</td>
<td>68.8%</td>
</tr>
<tr>
<td>2. Exclusive Breastfeeding</td>
<td>13%</td>
<td>7,020</td>
<td>27.1% (MBB, WB, 2004)</td>
<td>83.5% (MBB, WB 2004)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>15.5% (DHS 2000)</td>
</tr>
<tr>
<td>3. Use of Insecticide-treated Bednets</td>
<td>7%</td>
<td>3,780</td>
<td>31%</td>
<td>68%</td>
</tr>
<tr>
<td>4. Appropriate Complementary Feeding</td>
<td>6%</td>
<td>3,240</td>
<td>43%</td>
<td>56%</td>
</tr>
<tr>
<td>5. Antibiotics for Pneumonia</td>
<td>6%</td>
<td>3,240</td>
<td>15.1%</td>
<td>83.9%</td>
</tr>
<tr>
<td>6. Antimarial Treatment</td>
<td>5%</td>
<td>2,700</td>
<td>31%</td>
<td>68%</td>
</tr>
<tr>
<td>7. Clean Delivery – Skilled Birth Attendant</td>
<td>4%</td>
<td>2,160</td>
<td>31.3%</td>
<td>67.7%</td>
</tr>
<tr>
<td>8. Antibiotics for Dysentery</td>
<td>3%</td>
<td>1,620</td>
<td></td>
<td></td>
</tr>
<tr>
<td>9. Newborn Temperature Management</td>
<td>2%</td>
<td>1,080</td>
<td></td>
<td></td>
</tr>
<tr>
<td>10. Measles Vaccination</td>
<td>1%</td>
<td>540</td>
<td>86.9%</td>
<td>12.1%</td>
</tr>
<tr>
<td>11. Vitamin A</td>
<td>&lt;1%</td>
<td>500</td>
<td>68.9%</td>
<td>30.1%</td>
</tr>
<tr>
<td>12. Antimalarial IPTi</td>
<td>&lt;1%</td>
<td>500</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>64%</strong></td>
<td><strong>34,480</strong></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: Lancet 2003; 362: 65-71 and Rwanda DHS 2000 (unless otherwise indicated)

\textsuperscript{15} Jones, G., Steketee, R.W., Black, R.E., Bhutta, Z.A., Morris, S.S., \textit{How many child deaths can we prevent this year?} Lancet 2003; 362: 65-71
Over one-third of U5 deaths could likely be prevented with an increase in coverage to 80% of four key preventive interventions: (1) oral rehydration therapy (ORT); (2) exclusive breast feeding (EBF); (3) use of insecticide treated nets (ITN); and (4) appropriate complementary feeding.

Increasing coverage rates entails strengthening programs responsible for the delivery of these twelve interventions. With the addition of safe newborn care (newborn temperature management and clean delivery), antimalarial IPT during pregnancy, maternal tetanus toxoid vaccination and nevirapine with replacement feeding interventions, further reduction in the U5MR is achievable in Rwanda.

**Scaling Up Coverage of Proven Interventions**

As indicated in Table 12 above, at least by some surveys, only three interventions (Measles Vaccination, Vitamin A, and EBF) appear to reach about 70% of the target population. Efforts should be directed at maintaining and increasing these interventions to reach a 99% universal coverage target in addition to focusing on the interventions with even lower coverage. Delivery should be focused on the provinces or districts with lowest coverage and higher U5 mortality, as well as children in the poorer, vulnerable families in the lowest socioeconomic quartile of the population. Currently, of the 12 proven interventions, the majority reach a third or less of Rwandan children.
VI. Overview of MNCH Services

Existing Maternal, Neonatal and Child Health Delivery System

Public Sector

Central MINISANTE, Provincial and District Level Health System

Please refer to the Prologue of this report for an updated description of the newly restructured MINISANTE. An organizational chart of MINISANTE can be found in Annex 10. Annex 4 contains updated provincial, district and sector maps reflecting recent restructuring.

Health Facilities and Providers

There are 385 health centers, 34 district hospitals and 4 national referral hospitals within the public and non-governmental sector. In recent years, the health sector has seen an expansion in the private sector as discussed later in this section.

Geographic access to health facilities is similar to other countries in the region, with almost 60% of the population living within 5 km of a health centre, and 85% of the population within 10 km. However, disparities in geographical access exist between districts, and there is a pressing need to improve access in several of them.

The lack of health professionals remains one of the greatest challenges facing the health sector. In 2003, there were 168 physicians and 2,157 nurses working in the public sector, representing an increase of ten percent and seven percent respectively over the previous year. The number of qualified doctors and nurses across the country is insufficient, and the problem is particularly acute in rural areas. In the public health system, there is a growing lack of motivation among health personnel, which may explain the shift of physicians to the private sector.

The number of inhabitants per nurse is 3,900 and the number of inhabitants per doctor is 50,000. The population to nurse ratio is within the WHO norm of 5,000, however the population to doctor ratio exceeds the WHO norm of 10,000 per physician by nearly five times. These figures, however, hide the large disparity in population to provider ratios among provinces and between rural and urban areas. Currently, 83% of health professionals are posted in urban areas, leaving only 17% in the rural parts of the country. Low basic salaries and the lack of an effective incentive structure to entice providers to serve rural areas can explain this phenomenon.

17 Calculated from the Health Personnel Management System
18 Government of Rwanda Ministry of Health, Human Resources for Health Policy (September 2005) pg.8
Health animateurs based at the community level and attached to health centers play an important role providing services for those with limited access to the health center. Some animateurs are paid, but many are incentive-based volunteers working to support programs of the Government of Rwanda, NGOs, and/or FBOs.

**Private Sector**

Since 1995, the private medical sector in Rwanda has grown considerably. The number of private pharmacies throughout the country increased from 300 in 1999 to 405 in 2001. In 1999, there were 329 private health facilities in Rwanda, with more than 50% located in or near Kigali. Among these facilities, 63 were headed by physicians, 242 by nurses and 14 by persons who were not medically trained. ¹⁹ Quite a few of these urban, private facilities have hospitalization capacity and some offer specialized services, such as gastroenterology, ophthalmology and physiotherapy.

Non-profit NGOs and religious institutions, collectively known as Agréé, also constitute an important part of the private sector delivery system. While they are private, they commonly work in close collaboration with MINISANTE and seek to strengthen the public sector delivery system, especially by reaching less accessible or vulnerable populations. In 2001, 40% of primary and secondary health facilities were in the category of conventional Non-Profit Sector. NGO representatives have a formal agreement to follow the policies defined by the MOH and they participate in the management of the district. NGO staff are eligible for MOH supported in service training.

There also appears to be a flourishing informal private sector consisting of traditional healers and unlicensed drug vendors. These informal providers have not yet been institutionalized by MINISANTE and therefore no regulations or licensing requirements exist at this time.

**MNCH Human Resources Overview**

**Basic Qualifications for Health Personnel**

Health personnel within the Rwandan health system include the following categories of clinical staff: generalist doctors, specialist doctors, medical assistants, nurses (A1, A2, A3), nurses aids, nutritionists (A1, A2, A3), nurse midwives (A1, A2), nurse midwife aids, nutritionist aides, social workers (A1, A2, A3), social worker aids, lab technicians (A1, A2, A3), pharmacists, dental surgeons, and dental technicians (A1).

Health personnel qualifications are based on the number of years and level of post-primary school education completed. At the lowest level of qualification (nurses aids), the individual has to complete primary school, which is six years in Rwanda. The next level of qualification is A3 which requires completion of primary school plus four years of technical secondary school. A student may opt to do a total of six years of technical education.

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¹⁹ Rwanda SPA survey 2001, MINISANTE/Rwanda
secondary school or standard secondary school to earn an A2 level degree. Hence, A2 level health care workers have completed six years of primary school plus six years of secondary school. For an A1 qualification an additional three years of specialty training is required. Doctors are qualified as A0 having completed six years of medical school. See Figure 7 at right for a flow chart of schooling and qualifications.

**Maternal and Child Health Providers**

Nurses are the main providers of child health services in Rwanda, both in health centers and in hospitals. The overwhelming majority have only a basic or elementary level of training: A2 and A3 Level Nurses provide the majority of maternal and child health services in health centers including ante-natal care (ANC), prevention of maternal to child transmission of HIV (PMTCT), maternity (delivery), immunization, curative care for sick children and laboratory exams. The assessment team’s review of staff qualification in the 4 health centers visited in Kabgayi and Gitwe Districts found that 85% of the professional staff were A2 and A3 Level Nurses.

The Service Provision Assessment survey conducted in 2001 found that 92% of facilities had at least one secondary-level qualified staff (Physician or Nurse A1 or A2). The Ministry of Health has defined minimum staffing norms at the health center and district hospital level, as shown in Table 13. At present, only 30% of health facilities are able to attain these minimum standards.

**Table 13: Ministry of Health Staffing Norms for Health Centers and District Hospitals**

<table>
<thead>
<tr>
<th></th>
<th>Health Center Norms</th>
<th>District Hospital Norms</th>
</tr>
</thead>
<tbody>
<tr>
<td>Doctor</td>
<td>N/A</td>
<td>4</td>
</tr>
<tr>
<td>Nurse A1</td>
<td>N/A</td>
<td>4</td>
</tr>
<tr>
<td>Nurse A2 / A3</td>
<td>4</td>
<td>15-20</td>
</tr>
<tr>
<td>Other (Nutritionist, Lab Tech, Social Assist, Admin) A2</td>
<td>4</td>
<td>8</td>
</tr>
</tbody>
</table>

*Source: Health Sector Strategic Plan 2005-2009, GOR*
Community Health Providers

Diverse community based providers exist, delivering various MNCH interventions from malaria treatment to nutrition counseling. Some NGOs are also training traditional birth attendants (TBA) to improve delivery and newborn care. Selection criteria, training, responsibilities, titles and remuneration/incentives are not standardized.

Some of the community based providers are also part of the network of community health promoters or animateurs that may be hired by communities/districts, NGOs or the MINISANTE. The public health system includes eleven thousand animateurs who operate at each level of the local government structure starting at the cell or Nyambacumi - the smallest administrative unit (10 households). The animateur role is to promote positive family health practices through group discussion and home visits. In some health districts, they are trained to distribute commodities such as ITNs. The national Malaria Control Program and some NGOs have built on the existing animateur structure to develop their capacity to distribute anti-malarial drugs in selected districts.

Each administrative district has a Council of Women representing social affairs. This network has been targeted to promote key family and community health messages on such topics as exclusive breastfeeding, appropriate complementary feeding, and ITN use. World Relief supports this community empowerment effort through the Care Group Model using an extensive network of 2864 volunteers to achieve coverage of all households in Kibogora health district (Cyangugu Province).

MNCH Service Provision

Availability of Child Health Services

The 2001 Service Provision Assessment Survey revealed that the majority of facilities do offer basic curative services for a sick child, as well as key preventive care such as immunizations and growth monitoring. But again, variation among provinces was noted, with Cyangugu providing significantly fewer child health services than the others. The following Table 14 shows the percentage of facilities offering selective services in different districts and on a national level.

Table 14: Percentage of Facilities Offering Child Health Services

<table>
<thead>
<tr>
<th>District</th>
<th>Outpatient curative care for child (%)</th>
<th>Growth Monitoring (%)</th>
<th>Childhood Immunization (%)</th>
<th>All three services (%)</th>
<th>Number of facilities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Public Facilities</td>
<td>94</td>
<td>79</td>
<td>90</td>
<td>77</td>
<td>144</td>
</tr>
<tr>
<td>GAHF</td>
<td>91</td>
<td>83</td>
<td>89</td>
<td>83</td>
<td>79</td>
</tr>
<tr>
<td>Cyangugu</td>
<td>79</td>
<td>56</td>
<td>72</td>
<td>56</td>
<td>14</td>
</tr>
<tr>
<td>Gitarama</td>
<td>96</td>
<td>93</td>
<td>93</td>
<td>93</td>
<td>27</td>
</tr>
<tr>
<td>Kigali Ville</td>
<td>94</td>
<td>87</td>
<td>94</td>
<td>81</td>
<td>17</td>
</tr>
<tr>
<td>Ruhengeri</td>
<td>95</td>
<td>83</td>
<td>95</td>
<td>83</td>
<td>19</td>
</tr>
<tr>
<td>National</td>
<td>93</td>
<td>80</td>
<td>89</td>
<td>79</td>
<td>223</td>
</tr>
</tbody>
</table>

Source: Rwanda SPA survey in 2001, MINISANTE/Rwanda
Utilization of Curative Consultation Child Health Services

In 1995, the utilization rate of primary care services was 0.6 new cases per person per year. At that time, the needs were great, the assistance was massive and the care was nearly free. The utilization rate declined to 0.3 in 1997 and remained the same until 2001.

The referral rate has increased from 1.4 in 1998 to 2.3 in 2001. The low rate of referral was attributed to the quality of referral care provided by the health workers, the lack of communication and transportation arrangements, as well as the refusal of referral by the patients who consider the cost of referral too high. The low percentage of return referral reflects the weak link between health centers and referral sites. (SPA Survey, 2001)

MNCH Intervention Packages and Programs

Life Cycle Continuum of Care

Table 15: Life Cycle Continuum of Care

<table>
<thead>
<tr>
<th>Continuum of Care</th>
<th>Life Cycle Phase</th>
<th>Before Pregnancy</th>
<th>Pregnancy</th>
<th>Childbirth</th>
<th>Neonatal</th>
<th>Infant</th>
<th>Young Child 1-5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intervention Packages</td>
<td></td>
<td>Family Planning</td>
<td>Birth Spacing</td>
<td>Antenatal Care</td>
<td>Safe Delivery (including nevirapine)</td>
<td>Postpartum and Neonatal Package, Family Planning</td>
<td>Infant and Young Child Package, Family Planning</td>
</tr>
</tbody>
</table>

The most cost effective way to deliver the proven child survival interventions is to integrate them into a full package of services that begins before pregnancy and continues throughout childhood. The package should be available at the health center and community level, to reach mothers and children with services that help to prevent maternal, infant and child mortality. Fostering a positive relationship between women and health center staff before pregnancy can help to ensure return visits while pregnant, for delivery and care of the infant and young child.

During pregnancy, antenatal care services include provision of iron and folate supplementation, tetanus toxoid immunizations, malaria prophylaxis, insecticide treated nets, and counseling on nutrition, HIV/AIDS/STI prevention during and after pregnancy, breastfeeding, birth preparedness, and PMTCT services.20

Safe delivery and newborn care includes clean delivery by a trained attendant, prevention of hypothermia in the newborn, immediate breastfeeding (with special counseling for HIV-positive mothers), preventive eye care, and PMTCT interventions when indicated.20

In the postpartum period, care for the mother and newborn includes exclusive breastfeeding, keeping the newborn warm, hygienic cord care, immunization, and counseling and services for nutrition, birth spacing, and PMTCT interventions when indicated.20

For infants and young children, services include immunization and prevention of routine illnesses, education and counseling for infant and young child feeding, warning signs for complications of common illnesses, and treatment as needed for childhood diarrheal diseases, malaria, and acute respiratory infections.

<table>
<thead>
<tr>
<th>Interventions in MNCH Life Cycle Care Approach</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ANC</strong>: ITNs, IPT (intermittent presumptive treatment for malaria), PMTCT, and incentives for facility based delivery</td>
</tr>
<tr>
<td><strong>Safe Delivery and Newborn Care</strong>: Performance-based contracting to increase facility delivery; TBAs linked to the health center and referral for mothers who deliver at home within 24 hours</td>
</tr>
<tr>
<td><strong>Postnatal Care</strong>: A follow-up visit should be done within two days of birth to check for any postpartum complications; this may be achieved through BCG immunization sessions and outreach</td>
</tr>
<tr>
<td><strong>PMTCT</strong>: Expansion of PMTCT services at facility level; Community mobilization; Sensitization of men to attend antenatal care and be tested for HIV with their partners was requested; Use of local administrators to influence and advocate for male HIV testing</td>
</tr>
<tr>
<td><strong>IMCI</strong>: Facility level: Integrated Case Management of sick U5 children including counselling on how to administer drugs, feeding recommendations, how to recognize when sick children need care outside the home for malaria, diarrhea and pneumonia; Integrate HIV with IMCI; Community level: Promote and expand community based growth promotion; Promote case management of diarrhea and pneumonia using home based management of fever as an entry point</td>
</tr>
<tr>
<td><strong>Immunization</strong>: Integrated measles campaigns: integrate core child survival interventions (1-3) into immunization activities according to local resources and capacity; may include vitamin A, de-worming and ITN distribution</td>
</tr>
<tr>
<td><strong>Strengthening the health system</strong>: Monthly monitoring system: use of data for planning; integrated planning process at district level; integrated supervision; improving referral system at community and facility levels</td>
</tr>
</tbody>
</table>

As noted above, there is a large number of potential MNCH interventions that can be delivered, however, only a subset of them have proven effectiveness to prevent needless childhood deaths. As previously mentioned the Lancet articles recognize 12 critical interventions. Together these interventions should comprise a core Newborn/Child Health Essential Package. The following Section of the paper will describe existing MINISANTE Newborn and Child Health Programs, and which if any of the critical interventions are currently provided. Key Findings and Recommendations will be noted for each Program. Not all components of the intervention package will be delivered by any one program, nor will they all be managed only by the maternal and child health services of the MINISANTE. Those responsible for maternal and child health services should, however, oversee coordination and quality of each intervention.
Implementation Environment with Focus on MNCH

Rwandan Policy Commitment to MNCH

As outlined in the introduction, the GOR has demonstrated, both historically and through present actions, a strong policy commitment to the health of the Rwandan people and especially family planning, maternal, neonatal and child health. Rwanda supports the objectives of health for all and primary health care as outlined in the Alma Ata Accords of 1978 and has renewed that commitment in recent years through its agreement to the goals of the Abuja Summit on Malaria in 2000 and the Abuja Summit to Endorse African Development Forum (ADF) 2000 Consensus on Fighting HIV/AIDS in 2001. Since that time, the GOR has developed key policies including Vision 20/20 (2002), the Poverty Reduction Strategy Paper (PRSP), the Medium Term Expenditure Framework (MTEF) (2002), the National Decentralization Policy (2003), the National Reproductive Health Policy (2003), the National Health Sector Policy and Health Sector Strategy (2004), the National Health Sector Strategy for 2005-2009 (2004), the Health Sector Strategic Issues Paper (2005) and the National Family Planning Strategy (2005). The establishment of maternal and child health services within MINISANTE, recent incremental increases in percentage of government spending on health (with a goal of 15%), and the commissioning of this MNCHA all attest to the resource and managerial commitment of the GOR to fulfill these policy commitments.

Health and Economic Development

Central to policy commitments specific to maternal, neonatal and child health is the economic and development rational for health sector investments included in the PRSP and repeated in all subsequent policy documents. The economic and development rationale for investment in the health sector is well documented in the Report of the Commission on the Macroeconomics of Health, which articulates the primacy of health investment as an effective and efficient strategy for economic development.21

The Rwanda PRSP and all subsequent policy documents state that to achieve its mission of maintaining and improving the health status of the population, the GOR is to pursue the following objectives:

1. Improve the availability of human resources
2. Improve the availability of quality drugs, vaccines and consumables
3. Expand geographical access to health services
4. Improve financial access to health services

21 In brief, poor health is associated with enormous direct and indirect costs, such as the cost of treating illnesses that could have been easily prevented and lost productivity associated with morbidity and premature mortality. In addition poor health status and poorly controlled endemic and transmissible diseases impoverish families and communities, deter external investment and ultimately constrain economic growth. Malaria, for example, has been shown to reduce economic growth by as much as 1.3% annually. As a result, in terms of economic development, malaria endemic countries lag far behind countries that either have no malaria or have effectively controlled the disease. Estimates from the WHO indicate that malaria alone results in at least $12 billion in lost GDP per year in Africa.
5. Improve the quality of and demand for health services in the prevention and control of disease
6. Strengthen national referral hospitals and treatment and research centers
7. Strengthen the health sector’s institutional capacity

The pursuit of these objectives through the core programs outlined in the PRSP is intended to facilitate the goal of reversing current trends and decreasing the toll of maternal, neonatal and child morbidity and mortality, consequently enhancing the robustness of the Rwandan economy. Core programs of the PRSP that will significantly contribute to improved MNCH outcomes include: strengthening the prevention and treatment of HIV/AIDS and malaria, two of the most important causes of child mortality; and support for health **mutuelles** and community based **animateurs** which are strategies designed to reduce financial and geographic barriers to access of health services.

**Health Planning and Decentralization**

In the context of administrative and health district restructuring, the present transition provides a unique opportunity to address the observations and recommendations of the MNCHA on the topics of health planning and decentralization.

In Rwanda strategic planning for health occurs only at the national level, where a long-term vision of health development is articulated for the nation. Administrative districts seemed to have generally not been engaged directly in health planning and as a result resources that flow through administrative districts are seldom if ever used to support health activities that could contribute to improved MNCH. Health districts develop annual plans of action but do not have district health development plans, which would provide them with a longer-term vision and a better management tool. Annual plans of action tend to be non-strategic lists of activities and may not represent an effective use of resources for health priorities. In fact, the annual plans of action were found not to reflect the national level priority focus on MNCH except in the area of immunization.

The present and ongoing exercise of harmonizing health and administrative districts and the intention to decentralize many government processes, including planning, provide an opportunity to address both of these issues. This would require that the re-formed health and administrative districts perceived mid-to-long term health planning to be their joint responsibility.

A high quality district health plan is required to identify, prioritize, implement and evaluate health activities in general and child’s health activities in particular. The development of a district health plan requires a strong planning process based on local epidemiologic data and information on evidence-based cost effective interventions and packages to address priority health issues such as MNCH. The implementation of the health plan requires the capacity to monitor performance and effectively track resources. Unfortunately, from the perspective of information requirements, administrative and health districts appear to be poorly prepared to develop and implement district health plans.
VII. Assessment Findings and Recommendations

The present MNCHA is not an exhaustive inventory of existing programs, but rather a rapid assessment consisting of a desk review of current literature followed by key informant interviews, direct site/facility observations and inventories, and focus group discussions. The following findings and recommendations are drawn from these interviews and discussions and presented first according to MNCH program areas and then as they respond to the Health Sector Strategy.

MNCH Program Area Findings and Recommendations

The key findings and recommendations for MNCH priority areas include family planning/birth spacing, antenatal care, safe delivery and newborn care, PMTCT, pediatric HIV/AIDS care and ART, IMCI, EPI, infant and young child feeding, and malaria. MNCH programming is guided by the National Reproductive Health Policy which encompasses the following six priority areas: (1) safe motherhood and infant health; (2) family planning; (3) prevention and care of genital infections and HIV/AIDS/STI; (4) adolescent reproductive health; (5) prevention and care of sexual violence; and (6) social change for the empowerment of women.

Family Planning/Birth Spacing

Family Planning as a public health issue is considered among the highest priorities of MINISANTE. This is due in part to the high maternal and under-five mortality rates in Rwanda, coupled with very low contraceptive utilization rates (4.3% for women with one partner)\(^\text{22}\) despite high knowledge levels (95% of women are aware of at least one method of contraception). A reproductive health policy exists within the Policy and Capacity Building Unit of MINISANTE. Family planning and birth spacing interventions must be integrated within the delivery of other MCH programs, and not delivered as a vertical program, in order to reach more women of reproductive age. Even though the Lancet articles did not include birth spacing within the core set of proven interventions, other meta-analyses have shown that birth spacing is an effective CS intervention, decreasing mortality as well as low birth weight.\(^\text{23}\)

Selected Findings from Focus Groups and Interviews

- Desired fertility is high (five or six children), though some poorer women said they wanted only two children.
- “The purpose of marriage is for children.”
- The reasons for not using family planning methods appear more cultural than economic: “les enfants sont une source de richesse.” In the post-genocide period, people wanted larger families to replace people lost in the war.

\(^{22}\) Demographic Health Survey 2000, Ministry of Health
• Birth spacing is minimal. Menstrual irregularity is an issue due to nutritional effects; it is not uncommon for women to have amenorrhea, and hence, be unaware they are pregnant. Pregnancy is the expected state: “every woman is pregnant or has a newborn.” Women and men do not know the latest evidence regarding birth spacing as a key child survival intervention.

• Other barriers to family planning are religious beliefs and the side effects of contraceptives. Women in Cyangugu complained of bleeding and gaining weight from the use of Depo-Provera.

Recommendations
• Conduct IEC campaign targeting men with messages about the benefits of family planning for mothers and children
• Develop IEC messages/materials on the value of birth spacing as a child survival intervention and incorporate into onsite training of nurses doing MCH care
• Increase method choice and availability at health facility
• Provide outreach and community based distribution where centers do not provide FP onsite (e.g. mission health facilities)
• Engage local administration authorities (e.g. cell leaders) to take a leadership role in the promotion of FP within the context of optimum birth spacing
• Train health care providers to counsel women, including an explanation of the negative side effects of specific methods to prevent discontinuation of contraception

Antenatal Care

Maternal and newborn health services represent a wide range of interventions depending on whether the mother and the newborn are healthy or experiencing problems. Recognizing that all pregnant women are at risk of developing complications and that many of these complications are not predictable, it is important to ensure that all pregnant women have access to preventive interventions, early diagnosis and treatment in case of problems and emergency care when needed.

An assessment of ANC services was conducted in 2001 and results revealed some of the areas needing attention to improve availability, quality and demand for such services. Key findings from the 2001 assessment are listed below.

• While available at 90% of facilities, ANC services were only available 1-2 days per week. This creates missed opportunities not only for obtaining ANC, but also other services such as curative child health care, child immunizations or maternal tetanus toxoid vaccine.
• All conditions for a good quality physical examination were available in only 15% of facilities and only 41% of facilities had all the essential supplies for basic ANC. All items to support quality counseling were lacking in most of the facilities, particularly protocols and visual aids.
• Only six percent of women who received ANC recalled having been advised of the signs of complications of pregnancy (DHS 2000).
• Individual client cards are utilized by almost all facilities, but information on the card is not always used by the provider (SPA 2001).
• Regarding client satisfaction, 29% of clients felt that they did not receive sufficient information about their pregnancy during the ANC visit.

The 2000 DHS indicated that about 92% of pregnant women received antenatal care from trained health providers, and almost 80% reported having two or more antenatal visits. Of concern, however, is that two-thirds of all women delayed their first visit until the sixth month of pregnancy or later.

Selected Findings from Focus Groups and Interviews
Responses from community members across the 4 provinces visited confirmed the following limiting factors for early use of ANC services:
• Cultural beliefs that a woman should keep her pregnancy private until she is “showing.” Also, shame is sometimes associated with becoming pregnant, especially close to a previous birth, which sometimes discourages women from going for ANC.
• Many times women are not aware they are pregnant due to amenorrhea or irregularity, which means their delivery date is also uncertain.
• It was recognized that husbands had influence over decisions regarding ANC attendance, largely due to the male role in economic decisions. With mutuelles, the first ANC visit costs between 200-300 francs. Even if there is no fee for the visit, there are often costs associated with ANC such as ITNs, iron or vitamin supplements and transport. Some women apparently go late in their pregnancy for one antenatal visit so they will be eligible to deliver in the facility.

Recommendations
• Create a particular “service package” for each ANC visit corresponding with the course of pregnancy and including elements women/families value such as ITNs, IPT (intermittent presumptive treatment for malaria) and PMTCT
• Increase ANC visits earlier in pregnancy by offering incentives. One example is a “service package” and another is to provide a similar incentive to that found in Cyangugu where three ANC visits are rewarded with a free delivery at the facility
• Communicate benefits of ANC to the community with a focus on male decision-makers.

Safe Delivery and Newborn Care

Under the prior MINISANTE organizational structure, Maternal Health/Safe Motherhood was included within the Reproductive Health subunit within the Health Promotion Unit. The new structure brings Maternal Health, Family Planning, Nutrition, Community Health and the Control of Childhood Illnesses into the same unit, which should result in more coherent programming across the continuum of MCH care. However, the fact
remains that since most women deliver at home with minimally trained birth attendants, their own care is far from optimal, and newborn care is minimal. Even in facilities, proven interventions for newborn care are seldom performed at the time of delivery, or in the first few days after delivery. Standards of newborn and post-partum care of the newborn and mother are lacking at the point of use, or when available, not practiced.

The results from the 2000 DHS should influence program decisions and direction. They indicate a need to focus on home deliveries and increase facility based births, especially targeting rural, less educated mothers.

- Nearly three out of four births (73%) took place at home. Home deliveries were most common in rural areas (79%) particularly among women who have no education (86%) and those who had received no ANC (89%).
- Three out of ten births (31%) were attended by a health professional. Skilled attendance was associated with residing in urban areas, having 4 or more ANC visits and a high level of education.
- Nearly all women who delivered outside a health facility (HF) received no post-natal care. The lack of post-natal care was found more often among women 35 years of age or older (80%), those in rural areas (78%), and those without any formal education (84%).

**Recommendations**

- Ensure that when performance-based contracting is implemented it increases facility deliveries and improves delivery outcomes without creating adverse effects. For example, it’s not clear that negative reinforcement strategies are effective (one site in Cyangugu reportedly withholds birth certificates and vaccination rights from children born outside the clinic).
- Provide a follow-up visit, even through outreach, after birth to check for any postpartum complications; ideally within the first two days.
- Develop postpartum and newborn components of care – standards and an essential newborn package of care. Develop capacity and roles of providers to include post partum care for the mother and newborn.
- Build capacities for emergency obstetrical care.
- Eliminate or reduce financial barriers to delivering in facilities, especially where cesarean section is necessary.

**Prevention of Mother to Child Transmission**

A critical component of comprehensive maternal, neonatal and child health programming is the prevention of mother to child transmission (PMTCT) of HIV. A challenge to the integration of PMTCT into maternal and child health directives and programs is that PMTCT is located outside of the unit with primary MNCH responsibilities. The following provides a background on the PMTCT program in Rwanda, and examines the ramifications of vertical programming, including the impact that PMTCT and pediatric HIV/AIDS treatment programs have on the effective delivery of other critical MCH programs.
HIV in Rwanda is spread primarily through heterosexual contact (75%) and mother-to-child transmission (20%). Factors contributing to HIV prevalence include: low condom utilization rates; inadequate availability of HIV and STI testing in health facilities; inadequate access to and lack of awareness about PMTCT services; low access to and availability of treatment and care at the facility level, in the community and at home; and poor availability and quality of information regarding HIV/AIDS.

The PMTCT Program aims to reduce mother-to-child transmission of HIV using preventive and treatment interventions. By 2009, the MINISANTE aims to: (1) reduce the mother-to-child transmission of HIV rate by half, and (2) increase the percentage of health facilities offering PMTCT services from 12% to 80%.

There are four pillars to PMTCT programs: (1) primary prevention of HIV in adults who intend to have children; (2) prevention of unintended pregnancy through family planning; (3) prevention of mother-to-child transmission in late pregnancy, during labor and through breastfeeding; and (4) follow-up care and support for HIV positive parents and their children. Numbers 1 and 2 (primary prevention of HIV infection and prevention of unintended pregnancies) are key to reducing rates of mother-to-child transmission. However, as in many other countries, PMTCT services throughout Rwanda currently focus only on the third prong of the strategy rather than taking all four components of PMTCT into consideration.

**Current Policy and Guidelines**

Two major policy changes have been made to accelerate the reduction of mother-to-child transmission of HIV: (1) The program will replace nevirapine with other recommended regimens; and (2) HIV testing and PMTCT services will be merged to optimize efforts and make rational use of existing resources.

Operational implications of these policy changes include:
- Revision of training materials and treatment guidelines
- Improvement of health provider skills through training and supervision
- Improvement of drug management (provision, distribution, availability and use) at all service delivery points
- Improvement of treatment adherence through counselling, community support groups, treatment preparation, community education and BCC activities.

**Management and Coordination Structures**

TRAC is the Directorate of the MINISANTE where VCT and PMTCT are located. At the central level, a national Working Group (WG)/PMTCT was put in place to ensure coordination of interventions. The mission of the WG/PMTCT is to provide technical support in the development of policy and strategies, capacity development, orientation of partners, and management of health information. The Directorate of Health Care, the National AIDS Commission (CNLS), and the Bureau of the First Lady are all members...
of the national Working Group. The partners (UNICEF, WHO, UNAIDS) and NGOs are also part of this coordination structure. Coordination meetings are held monthly.

Because PMTCT planning occurs within TRAC which is located outside of the unit responsible for MCH, and coordination of interventions is the responsibility of the PMTCT Working Group, it is vital that the new MCH leadership take an active role in the WG/PMTCT. It is also important for MCH leaders to establish programmatic linkages between MCH programs (and Desk Heads) and TRAC.

At the district level, the Health Management Team is taking the lead in coordinating PMTCT activities and integrating PMTCT with MCH programs at the district and facility levels. It is the district’s responsibility to identify, plan and implement activities according to needs. The role of the central level TRAC is to provide technical support for planning, training and supervision as needed at the district level. The role of NGOs is to support districts in the implementation of the merged VCT/PMTCT program as planned.

**Availability of Human Resources**

At the central level, TRAC is coordinated by four qualified staff providing the following services for VCT and for PMTCT programs:

1. revision of documents including training, supervision and monitoring;
2. training of trainers and training of health workers (HW);
3. supervision; and
4. management of information.

At the district level, two members (two supervisors A0 or A1 with basic health training) of the DHMT are responsible for supervision and one is responsible for training health providers. The two district supervisors organize facility visits once a month.

The average number of health facilities per district is estimated at 10-15 and there are approximately three functioning PMTCT sites in each district. At the health facility level, all categories of personnel are targeted for the training. In the functioning PMTCT sites an average of five HW have been trained in VCT/PMTCT to ensure availability of VCT/PMTCT services and continuity of care.

Given the high visibility, pressure to reach targets, reporting requirements, and substantial funding of PMTCT programs, there is a risk that these programs will draw on the energy, time and commitment of already overloaded staff. This has the potential effect of decreasing their ability to meet MCH demands. In some cases, this has been alleviated by hiring new staff or reallocating roles and responsibilities. However, given the overall shortage of human resources in Rwanda, available human resources for other MNCH services will likely be limited.
Coverage of PMTCT Services

Despite a significant investment of resources and commitment, PMTCT coverage is still low. According to the latest available data, it appears that about 10% of HF (hospitals and health centers) are prepared to deliver PMTCT services. Less than 15% of all HF are supplied with ARVs and fewer than half of the eligible health workers are trained in PMTCT. When most of the functioning sites are in district hospitals, access is often limited for the most vulnerable, less educated and poorest rural women. Table 16 provides data on current PMTCT coverage in Rwanda.

Table 16: PMTCT Coverage

<table>
<thead>
<tr>
<th>Current Number</th>
<th>Total Coverage</th>
<th>Percentage of Total Coverage</th>
</tr>
</thead>
<tbody>
<tr>
<td>District with at least 1 functioning site</td>
<td>40</td>
<td>40</td>
</tr>
<tr>
<td>Trainers at district level</td>
<td>40</td>
<td>120</td>
</tr>
<tr>
<td>Supervisors at district level</td>
<td>80</td>
<td>120</td>
</tr>
<tr>
<td>HF with at least one HW trained</td>
<td>150</td>
<td>400</td>
</tr>
<tr>
<td>HF with ARV drugs</td>
<td>50</td>
<td>400</td>
</tr>
<tr>
<td>HW trained (global estimation)</td>
<td>750</td>
<td>2000</td>
</tr>
</tbody>
</table>

Source: PMTCT program coordination, MOH

Quality of PMTCT Services

MINISANTE/TRAC’s findings from routine monitoring data of PMTCT services identified the following problems:
- Limited compliance to treatment
- Low rate of HIV screening at routine antenatal care services
- Lack of clarity about options for appropriate feeding in the context of HIV by providers and clients alike

The results of a knowledge, attitudes and practices (KAP) survey in four PMTCT pilot districts (May 2004) indicate 52.4% of women who delivered during the previous 12 months had heard about PMTCT, but only 19.7% of them were tested for HIV. The major reasons for low uptake of testing were: unavailability of VCT service (53.8%) and low client knowledge of the importance of the test (18.3%). However, 71.8% of the mothers interviewed stated they would be tested, if given the opportunity.

Discussions with TRAC staff as well as facility providers indicated that the “C” in PMTCT has received very little attention. Since home delivery by minimally trained attendants is the norm, and post-natal newborn care almost nonexistent, the exposed infant is not likely to receive Nevirapine appropriately, much less ongoing care such as prophylaxis for opportunistic infections. Health facility staff have been charged with following up infants enrolled in PMTCT programs, but methods and materials to operationalize such follow up had not been routinely implemented at the time of this evaluation.

Assessment Findings and Recommendations 38
Selected Findings from Focus Groups and Interviews

1. HIV testing as part of ANC/PMTCT
   - The assessment team found a high acceptance of HIV testing by women, but men commonly expressed resistance to ANC HIV testing. Resistance by women was linked to fear of abandonment by men, or because men viewed test results as a surrogate for their own. The concept of discordant couples is not well understood. Infant testing remains problematic, as does testing for children including those beyond the age of one year. One facility included mandatory spousal testing before a woman could receive ANC services, a practice that clearly negates ANC promotion.

2. Stigma
   - Both health center staff and community members perceived stigma as a non-issue. Nonetheless, stories of stigma emerged in several communities.
     - In Kigali-Ngali, an HIV positive relative was abandoned at a health facility and a self-identified HIV positive woman was shunned by her community.
     - In Karambi, community members may assume that women who seek testing are prostitutes.
   - Groups felt that HIV positive children were not stigmatized, but instead were recognized to require special care, e.g., special feeding and rapid referral to facilities for assessment and care when sick.
   - One facility indicated they would not do Polymerase Chain Reaction (PCR) testing in the first six weeks of life because “we want to give people hope that the baby is HIV-negative and that what the health facility offers works.”

3. Role of men
   - In most of the communities visited by the assessment team, people said that urgent action is required to sensitize men to be tested for HIV with their wives. Furthermore, communities believed local administrators should use their power to encourage men to be tested with their wives.

Recommendations

- Establish programmatic linkages between MCH programs and TRAC/CNLS
- Explore and then implement approaches to ensure that PMTCT/VCT services do not undermine the delivery of routine MCH services
  - Perform a systematic analysis of activities, roles and responsibilities of PMTCT/VCT providers at the district and facility level
  - Design a new mechanism of more efficient delivery of integrated PMTCT/ART with routine MCH services
  - Reallocate staff and ensure division of responsibilities per site to ensure that essential MCH services are adequately addressed
- Integrate HIV into Newborn/IMCI algorithms to expand early case finding, management and referral of infants and children needing HIV treatment, care and support
- Develop follow-up systems for infants born to HIV positive mothers including a mechanism (e.g., drug supply management and counseling) to assure compliance to treatment for the newborn according to Rwanda national policy
• Maximize use of resources from global programs like the Global Fund for HIV/AIDS, TB, and Malaria to address maternal, neonatal and child health, especially for HIV positive children and OVCs. Develop specific operational plans and program linkages and budgets to facilitate synergistic use of such funds, and advance beyond rhetoric to functional programming
• Include pediatric HIV component within the community based child health treatment programs (e.g., home based management of malaria)
• Target men through PMTCT BCC/IEC activities

Recommendations from the national Coordinator of the PMTCT program also endorsed by the Assessment Team:
• Continue to increase PMTCT coverage while ensuring quality
• Increase access to ART (currently only 77 sites) for HIV positive mothers who need it
• Promote skilled attendance at delivery as a critical aspect of VCT/PMTCT intervention for mothers and newborns
• Improve infant and young child feeding in the context of HIV

Pediatric HIV Care and ART

With an increase in the diagnosis and reporting of pediatric HIV/AIDS over the past two years, more infants and young children are receiving care and treatment. In 2005, TRAC reported that of the 77 functioning ART sites, 60 are treating children. The total number of children (under the age of 15) receiving ART is 1,265, approximately 15% of those in need. These ART sites serving children are funded and operated by several partners including Global Fund, Médecins Sans Frontières, World Bank (MAP), Family Health International (IMPACT), CDC/Columbia University (MCAP), Catholic Relief Services and Partners in Health.

The recent availability of Dry Blood Spot PCR (DBS PCR) testing in Rwanda is of great benefit to pediatric HIV diagnosis, making it possible to test infants as early as six weeks of age by transporting specimens from peripheral sites to a lab with PCR capability. A DBS PCR testing algorithm has not yet been developed and disseminated, and there is need for a scale-up plan to ensure that lab capacity can keep up with demand for DBS PCR. In 2005, TRAC, Laboratoire Nationale de Reference (LNR), CDC and Columbia University launched a laboratory DBS PCR training for nurses and technicians.

TRAC and MCAP are collaborating to provide an HIV/AIDS Care and Treatment training of trainers. Additionally, TRAC has begun offering a ten-day HIV/AIDS training every two months for nurses, physicians, pharmacists and social workers. This training now includes two days focusing uniquely on pediatric HIV/AIDS. A training impact analysis has not yet been carried out; the number of health workers trained is unknown.

The identification and operationalization of ART entry points for HIV positive children is a critical aspect of pediatric HIV/AIDS that demands further attention. Since we know
that HIV disease is more aggressive in children – 30% mortality at one year, 50% by two years of age and 60% by the time a child is five – it is critical that infants and children are identified as early as possible so they can get care and treatment services.

TRAC is in the process of writing guidelines regarding entry points to care. Increasing the identification and care and treatment of HIV exposed and infected children will require collaboration between TRAC, CNLS and all task forces, or sections, of the Policy and Capacity Building Unit. Joint programming will ensure integration of HIV/AIDS care and support with core child health services and increase access to ART through multiple entry points. For example, as a leading cause of mortality among U5 children in Rwanda, it is essential to integrate HIV/AIDS into the IMCI algorithm.

A recent situational analysis undertaken by CNLS/TRAC has identified the following gaps in Rwanda’s HIV/AIDS program policies, strategies and activities aimed at children exposed to or infected with HIV/AIDS. The following findings were presented at a conference on pediatric HIV care held in Kigali in June 2005.

**Selected Findings from Focus Groups and Interviews**

1. **Policy and strategy issues**
   - Policies need to emphasize the needs of HIV infected school children and the overall needs of HIV affected and infected infants and children
   - HIV infected children have been left in the background as HIV programs have focused on reaching adults with treatment and care services
   - There is insufficient information sharing and there is no common database on existing policies, strategies and interventions related to pediatric HIV/AIDS

2. **Implementation issues**
   - HIV infected mothers who participate in PMTCT programs are lost to follow-up after delivery, which means the infants are also not seen for assessment, care and treatment
   - A large number of infected mothers breastfeed infants beyond the age of six months
   - CNLS and TRAC have not strongly reinforced monitoring and evaluation of pediatric HIV/AIDS programs and some partners do not comply with reporting requirements
   - There is inadequate support being given to affected families, including an insufficient number of home visits
   - Children do not have advocates for their HIV-related needs and PLWHA associations have not put children on their agendas
   - Only a small number of infants and children are tested, often too late, and very few have access to ARV treatment

**Recommendations**

- Conduct an in depth baseline study to identify needs and establish detailed mapping of existing interventions and distribution of resources for treatment, care and support of infected and affected children in the country
• Support CNLS and TRAC in the coordination of all partners and monitoring and evaluation of pediatric HIV/AIDS interventions
• Reinforce the link between PMTCT and Care and Treatment Technical Groups, with emphasis on pediatric care and referral systems
• Advocate for more resource mobilization for infected and affected children
• Build capacity of institutions and organizations providing care and support of infected and affected children
  ➢ Increase availability of pediatric ARV formulations
  ➢ Increase use of prevention care package including cotrimoxazole
  ➢ Improve skills of providers in pediatric HIV care and treatment
• Heighten mobilization efforts to eradicate HIV-related stigma and discrimination towards and within affected families
• Encourage intra-family support through home visits
• Expand support for income generating activities in affected households
• Identify and operationalize other entry points for ART and care of HIV infected children, e.g. referral by home based care providers, OVC programs

Integrated Management of Childhood Illness

Integrated Management of Childhood Illnesses aims to prevent, detect early and treat the leading causes of child mortality. As a holistic approach, the strategy focuses on not only the treatment of childhood illnesses, but also includes prevention of illness through education on the importance of immunization, micronutrient supplementation, improved feeding and care seeking behaviors. The algorithm is an evidence based standard of care, and as such can form the foundation for the practice of evidence based medicine in Rwanda.

As described in Section IV of this report, the main causes of U5 mortality in Rwanda are malaria, anemia, acute respiratory infections, diarrhea, malnutrition, neonatal conditions and HIV/AIDS. IMCI directly addresses all of these common causes of child mortality and morbidity, through: (1) the improvement of health workers’ skills to manage and treat common childhood illnesses within health facilities; (2) strengthening the health system to support availability of drugs and equipment, supervision, referral care and (3) the improvement of family and community practices through communication for behavior change and service delivery mechanisms. More recently, the community based treatment of malaria, pneumonia and diarrhea has been incorporated within the community component of C-IMCI. Another improvement in IMCI has been the inclusion of care of the well and sick newborn. The IMCI algorithm thus incorporates most of the proven interventions described in Section IV, especially if the algorithm is adapted to include HIV and newborn care. Furthermore, scaling up the delivery of the essential package of interventions becomes feasible through linked delivery of IMCI in facilities and through community based and home based care for the least accessible households. These are the very households most at risk for U5 deaths, given their low socioeconomic status and limited access to services. During the last several years, case management
guidelines for children with serious infections and severe malnutrition (the hospital component of IMCI) have become available and could be applied in Rwanda.

In Rwanda, the IMCI strategy was officially adopted by MINISANTE in 2000 as a priority intervention to reduce child mortality. Four districts were selected for the early implementation phase (Nyanza, Muhororo, Kabaya and Bugesera). The adaptation of training materials was supported by WHO and UNICEF. However, the IMCI Working Group was not well established, and implementation lagged for several years; apparently there was no focal champion in MINISANTE to sustain the momentum. Undoubtedly, the lack of structured and focused MCH program within the MINISANTE contributed to this situation. During that period, health centers continued to use their outdated, vertical treatment algorithms for diarrhea, pneumonia and malaria. Some NGOs, with UNICEF support, began to introduce elements of C-IMCI, including the home based treatment of malaria and community based treatment of pneumonia.

This assessment and the restructuring of the MINISANTE to include MCH services stimulated interest in IMCI. As a result, a consensus building workshop to agree upon key adaptation points in the clinical guidelines was held in August 2005. The inclusion of HIV and Newborn Care will be considered.

Additionally, based on the success of several C-IMCI pilot projects, the community component of IMCI is under development as part of a national strategy with inputs from NGOs, implementing partners and other sectors involved in community child health interventions. In 2004, a situational analysis was conducted in the four UNICEF supported C-IMCI districts in order to provide the basis for district health plans. Both UNICEF and WHO have support for the introduction of IMCI in their 2005 work plans. For WHO, the major activities in 2005 include the finalization of IMCI training materials, the first national TOT and the Training of National Facilitators. The USAID bilateral project, Twubakane, will also support the introduction of facility based IMCI in one third of the country, and NGOS will continue to support C-IMCI in six districts (though the number may change with impending district reform). The Capacity Project will address the inclusion of IMCI in pre-service nursing curricula.

**Selected Findings from Focus Groups and Interviews**

1. **Health workers’ performance**
   - The integrated approach is not used by health workers; a limited proportion of sick children were checked for presence of cough, diarrhea and fever

2. **Health system support**
   - Health system performance needs improvement particularly for essential equipment and services required for common childhood disease assessment and preventive interventions, including vaccination services
   - Good performance was seen on availability of drugs, particularly oral medications for the treatment of malaria, diarrhea and pneumonia. Table 17 on the following page describes the current capacity of facilities to provide integrated case management of sick children

3. **Community and family practices**
The results from KAP studies conducted in the four IMCI pilot districts indicate the need to improve household and community practices in the areas of home care, care seeking, growth promotion and disease prevention.

- Home Care for diarrhea: only 40.3% of respondents increase feeding, and about half of the respondents actually decrease fluids and feeding during the diarrhea episode.
- Infant and Young Child Feeding: Exclusive breastfeeding was reported for 43.9% of infants. Common reasons for early weaning included children’s incessant cries (36.8%), insufficient breast milk (23.5%) and occurrence of a new pregnancy.
- Disease Prevention: 82.6% of children were fully vaccinated in households reporting to own a mosquito net (43.9%), the net was commonly used by all family members and in 26% of these households, it was used only by the two parents. U5 children were present in only 5.2% of the surveyed households.

Table 17: Facility Capacity to Provide Integrated Case Management of Sick Children

<table>
<thead>
<tr>
<th>Recommendations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Twelve percent of facilities had all items for assessment and preventive interventions (functioning cold chain, weighing scale, thermometer, timer, and ORT materials)</td>
</tr>
<tr>
<td>Eighty-five percent of facilities had all essential oral medications for treating malaria, diarrhea and pneumonia</td>
</tr>
<tr>
<td>Sixty-seven percent of facilities had all pre-referral drugs</td>
</tr>
<tr>
<td>Ninety-two percent of facilities had an up-to-date register</td>
</tr>
<tr>
<td>Nineteen percent of facilities offered vaccination services on the day of the survey; the majority of facilities offer vaccination services three days per week or less</td>
</tr>
<tr>
<td>Nineteen percent of facilities had all items to support quality of services (soap and water, child health cards, treatment protocols, and visual aids for health education)</td>
</tr>
</tbody>
</table>

Source: SPA, 2001

The Expanded Program on Immunization

The Expanded Program on Immunization is a cost-effective way of improving child health and ensuring prevention against the eight vaccine preventable diseases. Rwanda’s EPI is one of the most successful in Africa. In 2003, full vaccine coverage for children under one was over 80%, with little significant variation among provinces. However, more recent studies identified some health districts with lower coverage. The quality of immunization services can also be improved, for example the epidemiological surveillance system for vaccine-preventable diseases needs strengthening.
Since the EPI is located within the Epidemiology Unit, the new MINISANTE structure will need to develop mechanisms to assure linkages with maternal and child health services for program planning, monitoring and quality assurance. Given the success of this program, the maternal and child health services will be asked to consider how the EPI can be used to piggy-back the delivery of other proven interventions.

The EPI is implementing most of the Reaching Every District (RED) approach components including:

- Monthly monitoring of key indicators
- Formative supervision
- Annual micro-planning at district level
- Coordination to ensure information sharing and community participation in decision-making (monthly meetings with community leaders, with community promoters, and two meetings per month with the District Health Medical Team)

To reduce the drop out rate, EPI is using health *animateurs* to identify drop out cases. For each U5 child identified in need of immunization, the *animateur* receives 500 RWF. This performance-based approach is being expanded, incorporated into district activity plans and has also received GAVI funds to cover local costs.

For the last two years, countrywide Vitamin A distribution has occurred twice a year (first dose April-May and the second dose in Oct-Nov). Such biannual Vitamin A distribution has been incorporated into district plans. New district level staff have been recruited to ensure better follow-up. Most importantly, distribution guidelines have been developed, and EPI tally sheets revised to incorporate Vitamin A distribution. The program was ready to start expansion in 2005. The next measles campaign (August 2006) will be used to increase access and availability of Mebendazole, Vitamin A and ITNs.

New activities are considered by the EPI as essential to increase coverage. These include the strengthening of human resources and the development of a community based information system. Health *animateurs* working at the smallest administrative unit (*Nyumbacumi* = 10 households) will receive registers and report immunization activities and disease surveillance to the health center.

**Selected Findings from Focus Groups and Interviews**

The assessment team found that most children were checked for immunization status either during a health encounter or during outreach sessions. However, missed opportunities for vaccination might occur when a vaccination is deferred because the facility lacks vaccination cards, or when facilities choose to provide immunizations only on select days.

Focus group respondents indicated that the responsibility for child immunization was shared by the parents: in some families, the mother takes the child for care, but in others the father makes the decision because he is literate and can read the vaccination cards. He then reminds the mother, and might even take mother and child to the clinic on his bicycle.
Recommendations

- Assess costs and benefits of building on EPI platform to expand access to other pediatric services and implement solutions based on findings
- Develop concrete mechanisms to integrate EPI within other MCH programs, including the community based child health program, and to assure coordinated planning between EPI and MCH programs.

Infant and Young Child Feeding / Nutrition

Malnutrition is not only a major direct cause of death, particularly among children and women, but also a common underlying cause of death and morbidity in U5 children in Rwanda. Malnutrition manifests itself in a number of ways, namely stunting (chronic malnutrition), emaciation (acute malnutrition), underweight, and micronutrient deficiencies. Underweight (weight for age) is widespread throughout the country, observed in 24% of children under five. Malnutrition rates increase considerably in infants 4 to 6 months of age due to the introduction of foods other than breastfeeding.

Currently, there is no national Infant and Young Child Feeding policy. The Baby-Friendly Hospital approach is supported by UNICEF, but a strong policy stance about infant feeding has not been taken.

In the context of HIV, infant feeding becomes much more complex. The HIV Program has identified infant feeding options and counseling as an area for marked improvement. Likewise, HIV-infected children are at special risk for nutritional deficiencies. There is need for the nutrition program to collaborate with TRAC+ and CNLS.

Micronutrients

Vitamin A deficiency can cause nutritional blindness, and increases a child’s susceptibility to infectious diseases, such as chronic diarrhea and measles. As noted earlier, biannual distribution of Vitamin A began in 2004. Iron and iodine protect against infections and are critical for cognitive development. Zinc has proven effective in the treatment of diarrhea (shortens duration and severity, while also conferring protection against recurrence in immediate period following episode).

Selected Findings from Focus Groups and Interviews

- Both good and bad feeding practices were identified, e.g., withholding food from a sick child, and increasing feeding during sickness. The practice of increasing feeding following sickness was not identified.
- Little variation in diet was observed, families eat what is available (as witnessed in Ruhengeri, even when diverse foods are available they may be saved for selling thus resulting in high rates of malnutrition)

24 Demographic Health Survey 2000, Ministry of Health
• One health center was monitoring protein-energy malnutrition (PEM) through monthly child weighing, but routine nutritional assessments do not appear to be the norm during sickness encounters
• Understanding of exclusive breastfeeding seems good, even for HIV+ women, but women may be reporting exclusive breastfeeding and not practicing
• Some women report that they cannot exclusively breastfeed and attribute this to malnutrition
• Women may say they are “exclusively breastfeeding” but actually may be doing mixed feeding or giving water
• Salt is purchased and iodine deficiency is not perceived as a problem; goiter statistics may be outdated
• Most HIV+ women exclusively breastfeed; there is no HF support for abrupt weaning at 6 months
• Some HIV+ mothers receive rations including powdered milk from an NGO based in Kigali/Ngali

Recommendations
• Develop infant and young child feeding (including for HIV) policy, strategy and norms/standards
• Draft feeding recommendations for well and sick children as part of the IMCI adaptation process
• Document and scale up a community based approach to promote appropriate maternal and child feeding (supplemental practices for HIV positive and negative mothers)

Malaria

Malaria is the first cause of death and the first cause of consultation for both adults and U5 children. The Malaria Program Strategic Plan for 2006-2010 has nine major components including:
• Prompt treatment of fever within 24 hours after the onset of illness.
• Malaria prevention through ITN distribution (600 RWF for families and 200 RWF for pregnant women attending ANC services) and IPT (Sulfadoxine-Pyrimethamine (SP)) for pregnant women; the latter service was planned to start in August 2005. According to the national policy, HIV+ women will receive at least three doses and HIV negative women will receive at least two doses.
• Community based interventions: Home Based Management of Malaria (HMM) has been implemented in six pilot health districts, with the designated target group of children six months to five years. Trained distributors (three for an administrative cell covering 50-100 households) are able to classify, treat and refer children with fever. Distributors are supervised every two weeks by a person recruited and paid by the project who in turn reports to the local health center. The treatment guidelines are now introducing Artemisinin-based Combination Therapy (ACT) only in HFs and HMM will continue using Amodiaquine/Sulfadoxine-Pyrimethamine (AQ/SP). Due to AQ/SP drug
resistance estimated at 25%, a policy change is planned to shift to ACT use in HMM.

- There is a mechanism to motivate community distributors through micro credit for income generation.
- HMM is an entry point for ORT and oral contraceptives.
- The EPI is perceived as a good vehicle for scaling up ITN distribution: in 2006, 1,301,600 ITNs will be distributed through the measles/Vitamin A/ITN/Mebendazole campaign aiming to reach 90% of the target groups.

There is potential for considerable synergy between the Malaria Control Program, and the Control of Childhood Illnesses Program. Clinical and Community IMCI are key mechanisms for delivering the effective malaria prevention and treatment measures. The success of the HMM can be used to spur broader and more extensive home and community based care, especially in communities lacking access to facility care (e.g., family planning commodities).

**Selected Findings from Focus Groups and Interviews**

- Responses indicated there was a problem with ITN stock outs due to delayed delivery of pending orders (through international tender) for long-lasting nets. Since only two companies produce them worldwide, delays are a constant problem.
- Communities are willing to pay 300-500 RWF for a net, and through the Global Fund for AIDS, Tuberculosis and Malaria (GFATM), ITNs will be offered for 200 RWF.
- Some reasons for not using bed nets include: being hot, perceived difficulty breathing or allergy to the insecticide treated material, and a fatalistic attitude that you will get malaria despite precautions.
- ITN coverage is high in districts with strong NGO support, such as Cyangugu which has support from Cordaid (Dutch assistance group with contractual approach) and World Relief. ITN distribution and use targets U5 children and pregnant women.
- Re-impregnation of nets has lapsed; there is apparently no strategy or active campaigns to stimulate re-impregnation efforts, though re-impregnation kits are available as a commodity (50 RWF). Re-impregnation will be required until the majority of households have LLINs.
- There is a wide variation in the price of bed nets ranging from 200 RWF for a subsidized net to 1500 RWF in a pharmacy (average price is 500-800 RWF); respondents reported that 300-500 RWF is an ideal price.
- Although malaria treatment algorithms were available in health centers, they are out of date and do not appear to be regularly used; anemia is not regularly assessed.
- Recognition of danger signs and referral of seriously ill children with fever is not consistent and has need for improvement.
Recommendations

- Subsidize ITNs not only for expectant mothers but also for households with U5 children.
- Document and support the scaling up of home based management of fever; use it as a platform to introduce other home based management of childhood illnesses e.g. diarrhea.
- Support research to better identify role of private pharmacies and drug vendors as first line treatment for fever.
- Introduce case management for severe fever and malaria to improve first referral care.
- Operationalize policy to make rectal artesunate available at lower level health facilities to be administered in cases of severe malaria currently referred to a higher level health facility.
- Support operational research to identify programmatic changes required for the transition to ACTs, including the role of rapid diagnostics.
- Develop/evaluate community based surveillance and data systems that can be integrated with national SIS and used for local decision-making and accountability.

Community Based Services

Facility based IMCI is organized at the central level with the support of WHO and UNICEF; however, promising experiences of community based interventions in malaria and nutrition have been initiated by some NGOs (World Relief, Concern Worldwide, IRC) in collaboration with DHMTs in select health districts.

The MINISANTE has developed programs to improve the network and skills of TBAs to improve the quality of home deliveries and maternal care. A program started in four pilot districts (Byumba, Cyangugu, Gikongoro and Gitarama) trained 1,200 TBAs. The role of TBAs was to encourage pregnant women to seek services for ANC, vaccination, and family planning, and also to improve their recognition of risk factors for which they should be referred to a facility. TBAs were also trained in better delivery practices, especially in clean delivery when a woman cannot deliver in a facility. The trained TBAs received basic equipment and supervision. This program has expanded to other districts since the end of 2001.

Home based care to promote the rapid identification and treatment of malaria relies on community based health volunteers or animateurs as noted previously under the Malaria Program description. NGOs have been in the vanguard of this and other community based treatment program trials.
The Positive Deviance Hearth Model\textsuperscript{25} implemented by NGOs to improve U5 nutrition, also uses a cadre of community based nutrition workers. The Hearth Model was initiated in pilot districts in collaboration with World Relief, IRC, and the Concern Project to enable poor communities to independently address the immediate problem of malnutrition. The model focuses on three categories of behaviors similar to those promoted in IMCI at the community level:

1. Feeding behaviors: nutrition, quality of food, food frequency, and quantity of food
2. Caring behaviors: family member and caregiver interaction, hygiene, and stimulation
3. Health-promoting behaviors: home case management, referrals, and preventive health practices

The Hearth Model works in conjunction with a national community based nutrition program, currently implemented in 18 districts. UNICEF supports nine districts and USAID provides technical assistance through NGOs in six to seven districts. The evaluation of the pilot phase is scheduled for the end of 2005 to guide the planning of the expansion phase.

Recommendations have been included previously under specific program descriptions.

\textsuperscript{25} Positive deviance is a development approach that is based on the premise that solutions to community problems already exist within the community. The positive deviance approach thus differs from traditional "needs based" or problem-solving approaches in that it does not focus primarily on identification of needs and the external inputs necessary to meet those needs or solve problems. Instead it seeks to identify and optimize existing resources and solutions within the community to solve community problems.
Implications of MNCH Findings for the Health Sector Strategy

Availability of Human Resources

In the Strategic Issues Paper 2005, a lack of well trained, highly motivated health professionals in the health system was identified as one of the core problems for the sector. The number of qualified doctors across the country is insufficient, and the problem is particularly acute in rural areas. In the public health system, insufficient incentives lead to a shift of physicians to the private sector. The strategic issues paper noted that the number of inhabitants per nurse is 1 : 3900 and the number of inhabitants per doctor is 1 : 50,000. The nurse to population ratio is within the WHO norm of 1 : 5,000; however the doctor to population ratio is almost five times under the WHO norm of 1 : 10,000 (see table 18 below). Furthermore the present distribution of health professionals is hugely biased towards the richer urban areas, in particular Kigali City, where eighty percent of all doctors and over fifty percent of nurses practice to the detriment of other provinces.

Table 18: Doctor and Nurse to Population Ratios

<table>
<thead>
<tr>
<th></th>
<th>Rwanda Ratio</th>
<th>WHO Recommended Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>Doctors</td>
<td>1 : 50,000</td>
<td>1 : 10,000</td>
</tr>
<tr>
<td>Nurses</td>
<td>1 : 3,900</td>
<td>1 : 5,000</td>
</tr>
</tbody>
</table>

Source: Rwanda Strategic Issues Paper, 2005

The GOR’s Health Sector Policy objective for human resources is to improve the availability of well qualified health professionals throughout the country, particularly in rural and other under-served areas. In pursuit of the above policy objective, the GOR has decided to develop a human resource development plan which includes strengthening basic training of medical and paramedical personnel and providing in-service training of personnel during employment. The Government will also develop incentive structures to encourage working health professionals to further their qualifications to ensure there is an equitable distribution of qualified personnel across the country. Finally, there are plans to ensure the certification of personnel and encourage the expansion of professional councils or associations.

The assessment team noted that the human resources policy is not yet fully implemented and the stresses on the existing resource base are increasing. Demand for both new and basic services is increasing yet staffing levels have not changed significantly. Staff time is stretched to provide new HIV/AIDS related services such as PMTCT, VCT and ARV treatment while increased participation in mutuelles is resulting in increased utilization of basic preventive and curative services. In addition, it was reported to the team that clinical health center staff members spend a disproportionate amount of their time on administrative duties and centrally funded initiatives. The assessment team also heard that as a result morale suffers and over-extended staff may ‘cut corners’ to save time. This has a particularly negative impact on the quality of services for mothers, infants and young children.
Anecdotal information further suggests that public sector health care workers are leaving civil service and migrating to the private and NGO sectors because of added workload and the absence of adequate incentives and recognition. Even though a retention plan has been developed as part of the human resources strategy and there has been mention of increasing salaries for people working in rural areas, this has apparently not been communicated to staff or made operational at the district level.

Districts are coping with the human resource issue in different ways, often but not always using locally generated revenues to support staff costs and to increase the number of staff. For example, in Cyangugu a significant proportion of staff has been hired on a contractual basis and is supported by revenues generated from co-payments and fees-for-service; whereas in Ruhengeri 70% of the provincial health budget goes to staffing. Also in Ruhengeri, central programs funded supplemental staffing for specific programs, such as HIV/AIDS. The assessment team was not able to determine how common or consistent this practice is across districts. In general, staff recruitment is done locally for contractual staff and centrally for civil service.

Another potential method of addressing the human resource issues and improving maternal, neonatal and child health is to expand successful community based approaches. For example, the home based management of fever, which is being successfully implemented under the stewardship of the national malaria control program, could reduce the number of facility visits for uncomplicated malaria, which presently account for a significant proportion of all consultations. The expansion of this program geographically, using it as a basis for introducing other interventions such as community management of pneumonia, and ultimately the introduction of community IMCI could rationalize the demand for facility based services. The conundrum is that successful community based services require a significant amount of support from facility based staff in the form of training, supervision and quality assurance, such that even if the facility caseload is reduced, staff will need to dedicate some time to support community based efforts.

In the short, medium and long term, training is an important part of the solution to the human resources problem. In the short to medium term, training can enhance the skills of health workers and improve the quality of the services they provide. In the longer term training could increase the number of health care and management professionals in all categories.

The assessment team noted that at present there is little well organized in-service training in MNCH, particularly for the auxiliary and elementary level nurses who provide the majority of care at health centers and health posts. The in-service training that is provided tends to be disease or program specific and the organization of this training is vertical. This could potentially be addressed through the roll out of IMCI training, development of job aids and increased supportive supervision.

To increase the number of health professionals, including those who specialize in the care of women, newborns and children it is important to address challenges associated with pre-service training. This will require collaboration between MINISANTE and
MINEDUC to review and revise pre-service training curricula so that there is an adequate focus on MNCH and associated strategies such as IMCI.

Resolution of the issue of incompatible policy objectives in MINISANTE and MINEDUC will require high-level dialogue within the Government of Rwanda. The Ministry of Education is placing its emphasis on primary education and is seeking to increase the proportion of the budget going to primary education and decrease support to tertiary education where the training for health professionals and managers occurs. MINISANTE, not surprisingly, wishes to increase the number of qualified health professionals, which means enrollment in training programs. One potential solution to this problem is an overall increase in the budget for MINEDUC so that investment in primary and tertiary education can increase. This solution will necessarily involve not only the highest levels of government but also the donor community.

Selected Findings
- Increased participation in *mutuelles* brings increased demand for services, but no new staff compensate for the lack of staff at the central, district and health center levels.
- Poor geographic distribution of qualified practitioners
- The mix of civil service and contractual staff differs across districts
- There is little incentive for providers to perform duties such as follow-up for mothers, infants and children through outreach visits
- The MINISANTE retention plan is not well understood, particularly by the health districts
- Clinical health center staff spend disproportionate amounts of time on administrative duties and centrally funded programs
- There is little MNCH in-service training, especially on evidence based MNCH
- Some in-service training for management or supervision has been given but it has not focused on child health

Recommendations
- Increase the number of staff prepared to provide MNCH services
  - Mobilize financial resources to support training of child health clinical and managerial specialists
  - Develop incentives for working in rural areas and communicate MINISANTE retention plan
- Increase pre-service and in-service training in MNCH services
- Complete IMCI adaptation
- Expand the home based management of fever and explore the integration of other community based treatment services for children
- Reconcile MINISANTE and MINEDUC policies on investment in primary and tertiary education
Availability of Quality Drugs, Vaccines and Consumables

In assessing the availability and quality of MNCH commodities, it is important to understand where people seek care and where commodities are available. Focus groups and key informant interviews were fairly consistent in describing incremental care seeking behavior and the infrequent use of the health care facility as the first place they took a sick child. For common childhood illnesses, caregivers will often try home remedies, “left over” drugs from a previous episode of illness, or simply prayer. If the condition does not improve, the next step may be purchasing drugs directly from a pharmacy or drug vendor in the informal sector, consulting a traditional healer or going to a formal health care facility.

In this assessment the team attempted to gather information on the availability and quality of drugs that are needed to implement the twelve proven interventions for the prevention of U5 deaths discussed in section V of this report. These drugs include antimalarials and antibiotics, drugs to reduce mother to child transmission of HIV, namely Nevirapine, vaccines against childhood illnesses, family planning commodities and insecticide treated nets.

Information was obtained regarding MNCH commodities in the formal public sector, but little was gathered about commodities (primarily drugs) attained in the informal and private sectors. It was found that generic drugs for childhood illnesses are generally available in public sector facilities from CAMERWA and to private not-for-profit facilities from BUFMAR. The procurement, supply chain management and quality assurance standards of these suppliers are considered sufficient to ensure that the quality of drugs is adequate. Key informants and focus groups indicated that drug stock-outs are rare, and it was suggested that this may be related to the fact that since the sale of drugs is an important source of revenue for health facilities, care is taken to ensure adequate supplies. As stated earlier, little is known about the quality of drugs available through the private and informal sectors, which may represent an important proportion of treatments. The team strongly recommends that MINISANTE assess the extent to which drugs are obtained in these sectors as well as the quality of those drugs.

In the case of antimalarial drugs, there is an effort underway to increase the provision of quality treatment to children with febrile illness through community based distribution. This program is considered to be reasonably successful and illustrates that, in addition to availability and quality, the issue of access often needs to be addressed e.g. ensuring that a quality product is available where people seek care, often in the home and community. There have also been some suggestions that the community based management of fever be expanded geographically and possibly to include community based management of pneumonia.

Also on the topic of antimalarials, the national treatment policy has been amended to introduce artemisinin-based combination therapy, initially through facilities and possibly at a later stage through community based programs. As this new class of drugs is introduced, provisions for pharmacovigilance/post-marketing surveillance will need to be made.

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Key informant interviews indicated a problem with the consistent availability of insecticide treated nets. This is in part attributed to two factors: the relatively low demand for ITNs; and delays in international procurement associated with limited global production capacity, particularly for long lasting insecticide treated nets (LLITN). In the near term, it will be necessary to increase and stabilize the supply of quality ITNs and LLITNs and to promote increased demand for and use of these commodities. This could be done through a combination of campaigns, targeted subsidies (for pregnant women, children under five and persons living with HIV infection), social marketing and commercial market development. For ITNs, there must also be an adequate supply of re-impregnation kits and a system to promote routine re-impregnation of nets.

For the prevention of mother to child transmission of HIV, access appears to be a more important obstacle to safeguarding maternal, neonatal and child health than availability or quality. Improving access to commodities is an important function of VCT and PMTCT programs, and access is expanding. One key area requiring greater attention is the provision of nevirapine to HIV positive mothers and their newborns when childbirth takes place at home. In addition to promoting delivery in facilities, it was suggested to the team that efforts are made to insure that newborns delivered at home are brought to a health facility to receive nevirapine within 72 hours of birth.

Childhood vaccines are provided through the national immunization program that has strict standards for vaccine quality assurance from procurement to point of delivery. The supply of other relevant commodities, such as family planning commodities and insecticide treated nets is less secure. For family planning commodities, the fact that they are provided free of charge and, therefore, do not represent a source of revenue for facilities was cited as one possible explanation for more frequent stock-outs. Access is again a key issue. Many faith-based organizations do not provide family planning commodities at health facilities, but those interviewed indicated that some of them do provide family planning commodities during community outreach activities. For further information, readers are referred to the assessment of family planning services conducted just prior to the MNCHA.

Selected Findings from Interviews and Focus Groups
- First care seeking for sick children includes home remedies, prayer, and direct purchases from pharmacies and informal drug vendors
- Drugs for treating sick children are available from health facilities, the private sector and household “reserves”
- Stock-outs of essential drugs are not common
- ITN stock-outs observed appear to be due to delays in international tender
- ITN coverage is high when cost is subsidized and NGOs assist with promotion
- Re-impregnation of nets seems passive but strategy exists for an active campaign

Recommendations
- Increase procurement of generics for the essential child survival medications
- Strengthen and standardize the use of drug consumption checklists for essential child survival drugs
• Improve early care seeking for common childhood illnesses at formal health care facilities or through community based treatment in low access areas
• Expand/scale up the community management of fever to other districts
• Develop policy and strategy to ensure that mothers who deliver at home receive nevirapine during labor
• Provide nevirapine for newborns of HIV infected mothers within 72 hours for home deliveries
• Subsidize ITNs for U5 children and pregnant women
• Conduct re-impregnation campaigns following the introduction of LLITNs

Geographical Access to Health Services

Distributional Inequity of Facilities/Providers

Geographic access is frequently cited as a barrier to seeking and receiving health care services in Rwanda. In fact, geographic access to health facilities is similar to other countries in the region, with almost 60 percent of the population living within 5 km of a health centre, and 85 percent of the population within 10 km.  

Not surprisingly, there are disparities in geographical access between and within provinces. There is a pressing need to improve access in particular health districts and rural areas, which are dually burdened by the inequitable distribution of facilities, and the even more inequitable distribution of trained health professionals. See maps in Annex 4 for the distribution of health facilities by district and sector.

Lack of Emergency Transport and Communications

For routine and non-emergency care, most people walk to facilities. This may take several hours depending on distance, weather and terrain. Financial barriers often further compound poor geographic access, particularly when emergency transport or referral to a higher-level facility is required. If emergency transport to the nearest local facility is needed, individuals are often carried on stretchers by community members, who by custom expect to be repaid with food and drinks, especially beer. Poor people who cannot afford to provide this repayment often do not ask for transport, or do so at advanced stages of their condition which can have serious consequences for a fragile sick infant or child.

The lack of an adequate emergency transport system and a poor communications infrastructure combine to further exacerbate the problem of geographic access. Costs for transport mount steeply if individuals have to be referred from the health center to a higher level health facility. Health centers often do not have radios to call for an ambulance, so individuals seeking care are expected to borrow a cell phone, pay for the call, and then pay the ambulance when it arrives. With average ambulance costs cited at 1000 RWF, individuals are reluctant to accept referrals or seek care at a facility for fear of additional costs for referral. Further, for some households the lack of clean or new

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26 Household Living Conditions Survey 2000, Ministry of Finance and Economic Planning
clothes to take to the hospital keeps them from seeking delivery in the hospital or care for a sick newborn or child.

The effect of insufficient emergency transport systems is evident in the high maternal mortality rate, which is partly due to a lack of reliable transport for women in labor to facilities capable of emergency obstetric care, including cesarian section.

**Outreach Services and Community Based Approaches**

For areas where individuals have trouble accessing services, outreach and community based services can be strengthened. However, the same geographic barriers that make it difficult for people to access health facilities make it difficult for facility staff to reach communities. Health facilities have periodic outreach days, where health workers may travel up to 3 hours on foot one way to deliver services to rural communities. Outreach services can introduce needed services into areas that otherwise would not receive them, and build relationships with community members. However, it is difficult to augment successful outreach services, like those for immunizations or malaria control, without increasing transportation for the health workers to increase coverage areas and reduce the burden of carrying additional supplies.

Health facilities can also partner with community organizations to identify individuals best positioned to receive additional training and serve as health *animateurs* in their communities. Health facilities may partner with a range of community groups, such as local administration, churches, business owners, and especially area Councils of Women, since they are present in many districts and have access to mothers of young children in their communities.

One of the most important roles for *animateurs* with regards to child health would be strengthening home based management of fever, since malaria is the leading cause of morbidity and mortality for U5 children. Systematic home based management of fever could serve as a platform for other interventions.

Private sector providers, including medicine sellers and traditional healers have served successfully as community agents for the promotion of child health in other settings. In Rwanda, at present, little is known about these providers and the roles they do or could play in the community.

To decrease maternal, infant and child mortality due to geographic (and geographic/financial) barriers, district plans need to address developing emergency transport and communications systems for health facilities, which may include purchasing radios for health facilities to call for ambulances, and increasing ambulance patrols in rural areas to reduce response time. District plans might also address increasing outreach and community based services with a special focus on MNCH services for underserved communities.
Selected Findings
- Overall access (< 10 km) is good, but underserved communities exist and need to be mapped and prioritized
- Lack of transport and communication are barriers to care seeking and hospital transfers especially for sick children
- Extensive linkages exist between MINISANTE, faith-based and informal providers
- Care is commonly sought from private sector and informal providers as first line of care for sick children
- Child health and mortality differences exist within and between provinces (Table 19 below)

Table 19: Mortality Across Provinces

<table>
<thead>
<tr>
<th></th>
<th>Kigali</th>
<th>Gikongoro</th>
<th>Kibungo</th>
</tr>
</thead>
<tbody>
<tr>
<td>Under 5 Mortality Rate (per 1,000)</td>
<td>140</td>
<td>204</td>
<td>268</td>
</tr>
<tr>
<td>Infant Mortality Rate (per 1,000)</td>
<td>79</td>
<td>120</td>
<td>142</td>
</tr>
</tbody>
</table>

Recommendations
- Develop district plans to expand outreach to underserved communities
- Develop emergency transport and communication systems, prioritizing underserved communities
- Increase the use of animateurs and community groups to scale up the home based management of fever
- Assess the potential of the private sector to contribute to child survival outcomes
- Develop district and health center plans and interventions based on local epidemiology for MNCH

Financial Access to Health Services

Financial barriers to access are largely responsible for low utilization of health services among the poor and especially the rural poor of Rwanda, the same groups that bear the highest burden of preventable maternal, neonatal and child mortality. Some of these financial barriers are direct such as lack of money to pay for service fees, insurance co-payments or drugs. Several others are more indirect, including the need of indigent members of mutual health insurance schemes (whose enrollment fees are paid by the community) to: pay for ID photographs; provide meals to hospitalized family members; pay for emergency transport; and buy clothing for babies born in facilities (a cultural “requirement”).

Direct Payment and Community Health Insurance

Data from the HIS demonstrate that the health service utilization in Rwanda has declined since the re-introduction of the direct payment system in 1996.
The direct payment system was introduced to mobilize domestic (household) resources to improve the financial viability of health facilities. Doing so, however, threatened to greatly increase inequity of access to services. Mutual health insurance schemes (mutuelles) were established in 1999 to generate community resources to subsidize the least enfranchised. Risk pooling was introduced to complement other insurance schemes available to higher income and urban populations.

**Mutuelles** in Rwanda are operated by autonomous organizations and administered freely by their members. These associations determine their benefit packages, annual premiums and periodicity of the subscriptions; they establish conventions on care and health services, service providers and reimbursement modalities according to the terms of the contract. They also sensitize the population to ensure recruitment as well as development of customer loyalty among members, and collect membership contributions. **Mutuelles** ensure the day-to-day management, transparency and traceability of the resources collected.

Participation in **mutuelles** has increased significantly since their introduction. However subscriptions rates are still low, with an average of only 27% of the target population enrolled. Table 20 on the following page provides enrollment rates for 2004 by province.

"One of the major problems facing the health system in Rwanda is how to reconcile, within a context of poverty, the objective of improving financial accessibility to health care and equity in the health system on the one hand, and the need to mobilize domestic resources for improving the financial viability of health services on the other hand.

Alternative mechanisms for community funding based on anticipated payment and risk pooling, such as mutual health insurance initiated in Rwanda in 1999, have demonstrated their considerable potential to reconcile the two objectives.

The present policy for developing mutual health insurance was elaborated by the Government of Rwanda with a view to centralizing the potential and especially meeting the increasing social demand for the extension of mutual health insurance.

In fact, establishing mutual health insurance across the country will ensure that the population of Rwanda, particularly those in rural communities and the informal sector have equitable access to quality services. Mutual health insurance is therefore intended to complete existing social and private health systems."

Dr Jean Damasène NTAWUKULIRYAYO
Table 20: Coverage Rates by Province

<table>
<thead>
<tr>
<th>PROVINCE</th>
<th>Number of Mutual Health Insurance (Per Sphere of Influence of Health Centres)</th>
<th>Target Population</th>
<th>Beneficiaries</th>
<th>Rate of Subscription</th>
</tr>
</thead>
<tbody>
<tr>
<td>BUTARE</td>
<td>30</td>
<td>689,618</td>
<td>172,404</td>
<td>25%</td>
</tr>
<tr>
<td>BYUMBA</td>
<td>27</td>
<td>672,396</td>
<td>188,270</td>
<td>28%</td>
</tr>
<tr>
<td>CYANGUGU</td>
<td>7</td>
<td>577,120</td>
<td>92,339</td>
<td>16%</td>
</tr>
<tr>
<td>GIKONGORO</td>
<td>3</td>
<td>465,242</td>
<td>41,871</td>
<td>9%</td>
</tr>
<tr>
<td>GISENYI</td>
<td>11</td>
<td>821,158</td>
<td>270,982</td>
<td>33%</td>
</tr>
<tr>
<td>GITARAMA</td>
<td>36</td>
<td>849,847</td>
<td>382,431</td>
<td>45%</td>
</tr>
<tr>
<td>KIBUNGO</td>
<td>33</td>
<td>667,135</td>
<td>306,882</td>
<td>46%</td>
</tr>
<tr>
<td>KIBUYE</td>
<td>5</td>
<td>445,565</td>
<td>71,300</td>
<td>16%</td>
</tr>
<tr>
<td>KIGALI NGALI</td>
<td>37</td>
<td>749,863</td>
<td>202,463</td>
<td>27%</td>
</tr>
<tr>
<td>KIGALI CITY</td>
<td>18</td>
<td>572,896</td>
<td>120,308</td>
<td>21%</td>
</tr>
<tr>
<td>UMUTARA</td>
<td>8</td>
<td>400,541</td>
<td>40,054</td>
<td>10%</td>
</tr>
<tr>
<td>RUHENGERI</td>
<td>11</td>
<td>810,745</td>
<td>202,686</td>
<td>25%</td>
</tr>
<tr>
<td>TOTAL</td>
<td>226</td>
<td>7,722,126</td>
<td>2,091,990</td>
<td>25%</td>
</tr>
</tbody>
</table>

Source: Mutuelle Health Insurance Policy in Rwanda, GOR Document, MINISANTE 2005

Information from key informant and focus group interviews suggested a number of reasons for non-enrollment in mutuelles as well as weaknesses in the mutuelle system. These interviews also provided an elaboration of financial barriers that inhibit utilization of health services even by members of mutuelles.

Overall, community interviews suggest that there is high knowledge of benefits of mutuelle membership and this is cited as one of the reasons for increasing enrollment. However, some community members find it difficult to accept the basic principles of mutuelles and did not perceive any benefit of planning ahead for service use by paying enrollment fees and premiums. This “lack of a spirit for planning ahead” was described as common, particularly among rural men, whose wives and children are the most vulnerable if uninsured.

Some community members also commented that practices to increase enrollment in mutuelles could be coercive (threats of repercussions, such as having identity papers withheld) rather than incentive-driven or information based methods. More acceptable practices included the subsidization of enrollment for the very poor by the community and community use of micro-finance mechanisms to ensure the enrollment of all community members. Concerns raised by these practices included the possibility that even with subsidization for the very poor, who still must pay for ID photos, drugs and co-payments, there may still be community members who cannot afford the costs of mutuelle insurance.

Many mutuelle members, though cognizant and appreciative of benefits, were quick to point out that enrollment in a mutuelle lessened but did not remove the financial barriers to access for health care. They noted that the cost of drugs, co-payments (e.g. 20% of
service fees at district/referral hospitals) and the cost of transport still represent significant financial barriers to access and utilization. The assessment team also found that *mutuelle* benefits and fee structures were not standardized across *mutuelles*. Membership is generally restricted to a specific facility and benefits are not transferable resulting in the need to pay full fees-for-service if care is sought in another facility. This is a problem primarily affecting individuals or families who travel outside of their home villages for family or economic reasons.

Cost associated with birth and delivery complications can be devastating for non-members of *mutuelles*. If emergency transport and cesarean section is required, non-members will need to pay as much as 3,000 RWF for transport and anywhere from 10,000 to 35,000 RWF for the cesarean delivery. Cost may become one of the principle drivers of the high maternal mortality rate. Even for uncomplicated delivery, costs (transport, fees/co-payments, food and clothing for the baby) are often cited as key factors in the decision to deliver at home rather than in a health facility.

Another example of cost as a barrier is seen in malaria prevention. Even though ITNs are considered a very effective tool in reducing all cause U5 mortality in malaria endemic areas, the team heard that the cost of ITNs sometimes impedes uptake and utilization. This technology is especially unaffordable for the rural poor who are most likely to benefit from routine ITN use. At present, ITNs cost 1,000 RWF in a health facility and 1,500 RWF in a pharmacy or shop. In the future, using a grant from the GFATM, ITNs will be made available for 200 RWF. Even with this important decrease in cost, it may still be necessary to subsidize or deliver nets free to the most vulnerable populations, which include young children and pregnant women in poor and rural households.

**Selected Findings**

- Cost is a major barrier to access of health services
  - Mutual health insurance subscription rates are low
  - Hospital or clinic care is often a last resort for those seeking care
  - ITNs cost 1,000 RWF in a health facility and 1,500 RWF in a pharmacy or shop and have low uptake due to high cost
- Men typically play a major role in decision making regarding health expenditure
- Reasons for not joining a *mutuelle*
  - Pre-payment concept under appreciated, especially by men
  - Perceived coercion to join
  - Eligibility criteria not standardized
  - Lack of transferability; only local health center covered
- Percent of GOR budget currently allocated for the health sector: 6.1%
  - Targets: 12% by 2010 (MTEF), 15% by 2015 (Abuja Declaration)
- Overall GOR health budget ~ 32 Million USD; difficult to track child health expenditures
- External donor support for MNCH comes primarily from two to three donors; non-diversified support is vulnerable and inadequate to meet needs in Rwanda
Recommendations

- **Mutuelles**
  - Reinforce standardization of fee structures and benefit packages
  - Network *mutuelles* to insure transferability of benefits for people who are away from home
- Develop a strategy to reduce exclusion of the poorest quartile of the population from the health system, by increasing *mutuelle* membership and utilizing health *animateurs*, churches and community meetings.
- Develop and disseminate IEC materials for ANC targeting the financial decision makers of households.
- MINISANTE and MINECOFIN put together a plan by which the GOR can attain its stated objective of 15% of national spending for the health sector by the year 2015. Assurances should be made that this plan is consistent with the epidemiological and social needs of the country and includes a focus on neonatal and child health.
- Donor partners and GOR jointly extend an invitation to the Partnership for Maternal, Newborn and Child Health to assist in preparing a long term strategy for reaching objectives in the GOR health strategic plan
- Advocate for the donor community to ensure diversified financial and technical support for child survival in Rwanda through an array of strategies including sector wide strategies and basket funds for particular child health initiatives. Currently few donors are directly investing in MNCH

**Quality of and Demand for Health Services in the Prevention and Control of Disease**

In 1994, the MINISANTE created a division responsible for the promotion of quality care to improve the impact of its interventions. The division is responsible for developing and disseminating standards of care as well as monitoring and evaluating the quality of care throughout the country. Quality assurance approaches and tools were initiated in select provinces and pilot districts.

**Monitoring the Quality of Care**

At district and facility levels, quality of care is tracked through the use of ordinograms/algorithms and protocols for specific symptoms and supervisory visits to health facilities. The child health algorithms currently used by health workers were developed in 1997 and need to be updated. It should also be noted that standards of quality and protocols do not exist to assist health providers and supervisors in assuring the quality of newborn care and post partum consultation.

A top-down supervisory system was installed in 1995. Each level of the structure is charged with the supervision of the level below it. Supervision is carried out by the district management team, which includes two supervisors who are rarely physicians, and seldom have specific experience in child health.
In 2001, there was an assessment of supportive management practices (SPA, 2001). Good supportive management practices were defined as: health committee meetings in the previous six months, external supervision in the previous six months, at least 50% of staff supervised in the previous six months, and at least 50% of staff receiving in-service training in the 12 previous months. The SPA results showed that only 23% of facilities had benefited from all of the aforementioned supportive management practices in the preceding year: 86% of facilities received an external supervision visit during the previous six months, about 40% of facilities had at least 50% of staff supervised in the previous six months, and slightly more than 50% of staff received in-service training in the previous 12 months.

The MNCHA found minimal quality monitoring of newborn and child health service delivery (with the exception of EPI) as explained below.

1. District level supervision is not always regular or systematic. Overall, supervisory visits are delayed or do not occur due to staff reductions at the central and provincial level. Technical expertise for supervision is another contributing factor to irregular supervision; supervisors may be A2 nurses without the technical expertise necessary to conduct adequate supervisory visits, especially in newborn and child health.

2. At the community level, routine supervision of health animateurs is rare and described in one district as “simply not possible.” Instead key informants stated that quality is promoted and reinforced by motivation of individual animateurs through incentives such as training (offered every three months by topic area in a three-day workshop with per-diem). Attention to the quality of newborn and child health promotion has been limited.

3. *Technical focus of supervision:* usually, supervision is more focused on the implementation of vertical programs, such as immunization, rather than overall service delivery for common childhood health conditions. When specific central-level vertical programs conduct supervisory visits at facilities, often during the 2nd and 3rd quarters of the year when the national health program has funding to support these visits, routine service provision and implementation of other vertical programs are often disrupted. This occurs because health center staff are expected to focus almost exclusively on the particular vertical program in question during the visit. Since child health is not a vertical program, little technical supervision has occurred. District health plans do not specifically focus on newborn and child health (with the exception of EPI), and therefore the district level monitoring pays minimal attention to newborn and child health.

**Innovation and Best Practices**

Despite the prevailing weaknesses, the MNCHA found examples of good quality assurance and supervisory practice. For example, in Cyangugu the Kibogora Health Center has established several quality assurance mechanisms including a health committee managed by the Titulaire. Health committee members are drawn from the
community and meet regularly to sign off on budget decisions and develop mechanisms to capture feedback on community perceptions of service quality. Such mechanisms include suggestion boxes and reports by community based health animateurs that provide feedback to the facility on community sentiment. In the province, there is also an innovative practice through which quality of care is assessed at health centers by a provincial committee with four physicians and four supervisory nurses. There is potential to enhance this practice if the committee were able to provide formative as well as or instead of checklist supervision. However, again separate attention needs to be focused on MNCH issues.

Quality of Services as Perceived by the Community

From focus group interviews conducted in the four provinces visited during the MNCHA, community members consistently indicated that they felt a quality health care facility is one that 1) makes them feel welcome 2) provides drugs 3) has providers who are perceived to be skilled and 4) provide a diagnosis for an ailment, especially through positive lab tests. It was interesting to note that sometimes negative lab tests were either not believed, or indicated that the illness was not a medical problem and a traditional healer should be consulted. Communities also noted that if a facility is “good,” the child will get better after a visit. Ironically, a “good” facility visit may lead to a decrease in care seeking behavior; when a child has been diagnosed and successfully treated at a facility, the next time symptoms recur people may choose to go directly to a pharmacy for treatment (considering what they learned worked).

Recommendations

- Create and roll out a system for identifying, documenting and sharing best practices to increase quality of care, with a special focus on child health services
- A national information system should track relevant information on child health and manage data at the district and facility levels (beyond immunization data)
- Develop strategies to increase the number of births assisted by qualified health professionals
- Accelerate IMCI to ensure quality care for common childhood conditions at the facility and community levels
- Integrate HIV into IMCI for earlier identification of HIV positive infants and children
- Develop integrated supervision materials for child health including self-monitoring of performance at the health facility level
- Strengthen ANC services including the development of service packages for each visit
- Update standards of care for newborn and child health (incorporate newborns into IMCI)
- Develop mechanisms to expand community based data collection, analysis and reporting for child health
National Referral Hospitals and Research Centers

National referral hospitals and research centers are beyond the scope of current assessment. However, the assessment team did find that referral hospital case management of children with severe malnutrition and serious infections is not according to current guidelines. Also, access to referral facilities is limited due to communication gaps.

Institutional Capacity of the Health Sector

Institutional capacity of the health sector needs improvement in several interrelated areas including planning, development of performance indicators, health information systems and in public-private partnerships. Capacity to manage, coordinate and supervise, particularly at decentralized levels, has been identified as a key constraint by the Ministry of Health strategic issues paper.

Planning Processes and Data Use

A high quality health plan is required to manage, to coordinate and to supervise health activities in general and child's health activities in particular. To this end, the persons in charge of child health must have a strong planning process. Performance indicators must be identified in order to assess results in child's health and an efficient health information system must be able to provide the necessary data for informed planning and assessments of newborn and child health service delivery.

Regarding health planning, in the districts the assessment included, the team found no district level “health” development plans and therefore no development plans for initiatives specific to child health. There are broader development plans, but if they include health it is usually in terms of facility construction and do not include services or quality of care for children. The apparent inexistence of a district health development plans prevents medium and long-term vision within the sector, and contributes to short-term planning of activities (that do not take medium and long-term goals into consideration).

Annual action plans are actively developed and used at the district level, however these plans are very generic and comprised merely of a list of disparate activities. While this list is useful for daily management, they seem to lack strategic focus and do not set priorities. Furthermore, with the exception of the immunization program child health is not specifically addressed in the annual action plans. District plans do not reflect national priority and strategic focus on child health. Additionally, district annual plans do not appear to take into account epidemiological data collected on children’s health needs. While this data is collected at the district level, it is not used to inform planning.

Performance Indicators

Across the national, provincial and district levels, the assessment team found no performance indicators to track the progression of child health activities in any of the age
categories with the exception of EPI. The epidemiological data on child health collected does not appear to be linked with administrative, financial and human resources data, and it is therefore not possible to assess the efficiency of interventions. To determine levels of performance and efficiency there should be a multifactor analysis of resource consumption with incidence rates for diarrhea, pneumonia, malaria, HIV, moderate and severe malnutrition, injury and antenatal care visits. The GOR needs to develop appropriate and sufficient tools to track child health-specific resources at the national, provincial and district levels.

Once performance indicators are developed, performance-based contracting can work to improve health service delivery. One example of this is found at the hospital level in Ruhengeri where staff receive performance-based incentives to increase hospital delivery rates. If a staff member’s delivery performance is from 90-100%, they earn the entire incentive. Sixty to 90% earns half of the incentive, and performance that is less than 60% does not earn any incentive. At the health center level, one clinic in Cyangugu is supported by an NGO which provides the clinic with 2000 RWF for every facility delivery. To increase deliveries, TBAs are now paid 1000 RWF for bringing women to this clinic. Also, the clinic made it mandatory to deliver in a facility, stating that children born outside of the clinic would not be vaccinated there or receive birth certificates. While this practice may encourage facility deliveries, it risks discouraging vaccination and vital registration.

**Health Information Systems**

There are two main health information systems that routinely collect data: the epidemiological data system and the SIS. The operation and uses of these two health information networks are unique with epidemiological data collected weekly at the hospital level and SIS data collected monthly through district reports.

The epidemiological data network is limited in its scope of data collected but functions well with data analysis and provision of direct feedback to the health centers. The SIS collects a broader scope of data and is therefore larger and more prone to complications. One major problem common to both data networks is a lack of data flow between the hospital, district and national levels. Data collected through the epidemiological data system at the hospital level is not effectively transferred to the district and national levels and therefore not picked up by the SIS. A major gap in both systems is the lack of focus on children, and more specifically on U5 children. Another problem with the health information systems is due to incomplete vital registration. Apparently not all districts receive birth/death information from the cell and sector levels.

The computerized SIS system was developed between 1996 and 1997 and is therefore outdated. Additionally, it is weakened by information gaps because national programs and donor projects frequently use their own information system instead of reinforcing the existing national system. Multiple forms and systems exist for different programs and donors.
The epidemiological data are collected regularly, however this system of data collection is problematic for multiple reasons including: 1) only absolute numbers are recorded; and 2) health centers are applying denominator data only for EPI and births.

The assessment team noted that some partial analyses of data were done in the field. Monthly meetings were held at the district level with all health center directors to discuss monthly reports, and to give feedback. However, monthly meeting discussions on data are more about the quality and reliability of the data than about their use. Data do not appear to be used, including for decision making. Systematic use of data should be encouraged at all levels, including the district and community levels.

Regarding SIS data dissemination, no mechanism is in place for central level data to reach the district level. Epidemiological data are communicated via weekly bulletin. However, SIS data are not disseminating.

At the community level, data coming from the community and the feedback given to the community are limited. There are, however, several sources of data available within the community: health animators, Red Cross volunteers, and local administrators for every ten households referred to as *nyumbakumi*. Data collected by these community members and volunteers could be submitted to the health center adding to overall data collection. Some health animators are already working with registers to collect data, and this arrangement appears to be successful.

**Role of Public Sector Vis-à-Vis Private Sector**

Collaboration between the Ministry of Health and the private sector is based on an increasing role of the private sector in the provision of services across the entire population, improved supervision of the health sector particularly in terms of health information, and a reinforcement of the unit in charge within the Ministry. A formal agreement detailing the nature of cooperation between the Ministry of Health and the private sector has been established.

The assessment team learned that where child health is concerned, the role of the public sector vis-à-vis the private sector could involve advocacy, information systems, program planning and technical support. For example, the public sector might encourage private partners to develop their activities to include a child health component. For private partners who already work in child health, the public sector could encourage engagement with the most cost-effective neonatal and child health interventions.

The standardization of information systems is the responsibility of the public sector. As previously mentioned, a diversity of information systems exist due to private sector health programs that develop their own information systems that function parallel to the existing national system. The current public sector efforts to standardize and integrate the information systems are not perceived to be aggressive enough. Currently, it is difficult if

*For the purposes of the MNCHA, the private sector includes commercial health facilities, non-governmental organizations, informal drug vendors and traditional practitioners.*
not impossible to get a more accurate and complete picture of the nation’s child health status and services because of the multiple information systems.

As previously noted, the health planning process needs improvement at the district level especially for child health. In this area, the public sector might collaborate with the private sector to develop integrated plans that include all public and private sector child health interventions.

Finally, the public sector could take on an important role in providing technical support to the private sector, specifically developing the private sector’s technical capacity in child health initiatives.

As was mentioned on page nine of this report, the team felt that an assessment of the private sector would be useful, especially focused on the informal sector of traditional practitioners and local drug vendors. Such an assessment could better define their current role and practices in treating sick infants and children.

**Decentralization**

The Rwandan Government commits itself to implement measures of budget devolution to the peripheral services starting in 2000. Thus, credits for services are managed by the Province; the Province assures the correct use of credits in collaboration with persons responsible for the peripheral services of MINISANTE.

The decentralization of the health system is in harmony with administrative decentralization; health districts are now merged with administrative district in the local government system (see Table 21 below).

<table>
<thead>
<tr>
<th>Table 21: Administrative Structures in Rwanda</th>
<th>Aug 2005</th>
<th>February 2006</th>
</tr>
</thead>
<tbody>
<tr>
<td>Provinces</td>
<td>12 and Kigali City</td>
<td>4 and Kigali City</td>
</tr>
<tr>
<td>Districts</td>
<td>106</td>
<td>30</td>
</tr>
<tr>
<td>Sectors</td>
<td>1,545</td>
<td>450</td>
</tr>
<tr>
<td>Cells</td>
<td>9,165</td>
<td>9,165</td>
</tr>
</tbody>
</table>

The assessment team found that public opinions on decentralization varied considerably. For some, decentralization is positive because facilities support themselves. In the opinion of others, the contractual approach is a form of decentralization. Opinions on the implementation of decentralization and its benefits also vary. Some believe decentralization is “only on paper” and others feel that decentralization has created a worse bureaucracy.

**MCH Division and Linkages with other MINISANTE Units**

The government has recently placed IMCI, maternal health, reproductive health and nutrition policies within the Policy and Capacity Building Unit of MINISANTE (see Annex 10 for an organogram of the new MINISANTE). This is a signal that the Rwandan government is placing importance on maternal and child health.
The most important thing for these MCH services will be their leadership. The introduction and rollout of MCH policies is critical for the development of MCH programs in Rwanda. The role of MCH services is especially important for the direction of child health activities at the district and health center levels. MCH services should assure accountability for child health program development and implementation, particularly for IMCI. The links between MCH interventions provided through programs within and outside of the Policy and Capacity Building Unit will be critical. The director of these services will have to provide strong leadership for MCH activities and should also be able to vigorously defend child health matters vis-à-vis other MINISANTE Units, other ministers, development partners and the private sector.

Maternal and child health services will cover IMCI, Nutrition, FP and Maternal/Reproductive Health. IMCI as a whole has not yet been implemented, however the malaria and nutrition components have recently been rolled out at the community level. No part of the IMCI strategy has begun at the first referral level i.e. health centers with beds or district hospitals, and considerable work remains in this domain. For example, case management for diarrhea and ARI is based on old standards (1997) in need of updates; health providers have not received updates or in-service trainings on ARI or childhood diarrheal diseases (CDD) in recent years; and ORT stations are not common in health centers. Maternal and child health services must also create a service package for ANC visits, develop postpartum and newborn care standards and develop other essential care packages. Refer to “MNCH Intervention Packages and Programs” in section VI of this report for details on the essential care packages associated with the life cycle continuum of care.

**MCH and MINISANTE Linkages with other Ministries**

Child health outcomes are not only the result of activities implemented under the MINISANTE, they are also influenced by other sectors. The Ministry of Education, for example, has a fundamental role to play in the improvement of child health. The MINISANTE should be careful to develop links and joint synergistic work plans for MCH with all other ministries that may potentially benefit child health initiatives.

**Capacity Building, Incentives and Recognition for Performance in MNCH**

Central to improving maternal, neonatal and child health care in Rwanda is the recruitment, capacity building, and retention of qualified and motivated health workers. As previously mentioned, there is a shortage of human resources throughout the health system including doctors, nurses, technicians, public health and health service managers among others. Additionally, there is unequal distribution of health professionals between urban and rural areas around the country resulting in only 17% posted in rural areas.27 These issues underscore the importance of health sector capacity building, the development of incentive strategies, and performance monitoring mechanisms for the sake of recognizing and promoting current health professionals as well as enticing others into the health sector. As previously noted, pre-service education on MNCH must be strengthened.

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27 Human Resources for Health Policy, September 2005, Ministry of Health
Capacity building among health professionals begins with adequate basic training and continues through post-basic, post-graduate and in-service training. Please refer to the earlier piece in section VIII entitled “Availability of Human Resources” for more detail on improving and expanding training opportunities, especially for MNCH.

Monitoring and evaluation of health worker performance in MNCH not only provide supervisors with the information necessary to recognize and reward achievement, it also enables managers to identify needs and reduce work related hardships. Providing both positive and constructive feedback to health workers in addition to listening and responding to their needs is critical to foster high morale and motivation within the workplace. A quality assurance system is needed to ensure that proven neonatal and child health interventions are delivered according to evidence based standards and hence effective. It might be useful to develop or adopt a set of performance indicators specific to job functions that will facilitate the evaluation process and enable systematic data collection that can inform community, district and central level decision makers. The team recommends that particular attention be given to job functions in the areas of MCH.

Shortages of qualified workers in rural areas can partly be addressed through the use of recruitment and retention incentives. An incentive package may include housing accommodations, higher than average salaries, improved means and/or allowances for transportation and communication, and opportunities for continuing education and career development. One might examine the role of advanced learning and certification in MNCH as one incentive. Performing a survey of contributing factors to job satisfaction and dissatisfaction among health sector employees could be considered to best determine the most appropriate and effective incentives for health professionals in different locations and at different levels. Another approach to the recruitment of staff in rural areas is to require two years of rural service for recipients of government scholarships.28

Selected Findings

1. Performance Indicators
   - Annual district health plans do not reflect national priority and strategic focus on child health (except for immunization)
   - Annual district health plans do actively engage local government but again lack focus on child health (except for immunization)
   - Annual district health plans tend to be generic with almost no performance indicators for neonatal and child health
   - District administrative activities are not clearly defined for health; funds have not been utilized for improving the quality of neonatal and child health services (although some may have been used for hospital equipment and construction)
   - Performance-based contracting may increase facility delivery results

2. Health Information System
   - Multiple reporting forms and systems exist for different programs and donors

28 Rwanda National Human Resource Strategic Plan 2005-2009 (Draft), Ministry of Health
- Health information is collected regularly with some analysis and feed back to health centers, but vital registration is incomplete
- Mechanism for information dissemination from central to district level appears weak

3. Decentralization
   - Opinions on decentralization varied considerably
   - The recent harmonization of health and administrative districts grants greater opportunity for health officials to work with district administrators to increase health services funding, especially for neonatal and child health

4. Maternal and child health services
   - Development and staffing of MCH services within MINISANTE is critical for leadership and direction
   - MCH programs will include Family Planning, Maternal and Reproductive Health, IMCI and Nutrition
   - MCH leaders will need to plan with other task force and unit leaders to assure that the 12 proven newborn and child health interventions are delivered effectively and across the continuum of care from antenatal through child health services
VIII. Priority and Longer Term Recommendations

Efforts should be directed at scaling up the 12 proven neonatal and child health interventions for decreasing U5 mortality to reach a 99% coverage target. Delivery should be focused on the provinces or districts with lowest coverage and higher U5 mortality, as well as children in the poorer, vulnerable families in the lowest socioeconomic quartile of the population.

The most cost effective way to deliver these child survival interventions is to integrate them into an essential package of MCH services that begin before pregnancy and continue throughout childhood, available at the health center and community level, to reach mothers and children with services that help to prevent maternal, infant and child mortality. Fostering a positive relationship between women and health centers before pregnancy can help to ensure return visits while pregnant, safe delivery and care for the infant and young child.

Recommendations by Program Area
Priority (first six months) and Longer Term (six months to three years)

Crosscutting Initiatives

Priority Recommendations
- Establish structure, function, staffing and technical assistance needs for all MCH programs within the Policy and Capacity Building Unit of MINISANTE
- Advocate for the donor community to ensure diversified financial and technical support for child survival in Rwanda through an array of strategies including sector wide strategies and basket funds for particular initiatives. Interest new donors to directly invest in MCH
- Develop a mechanism to identify and share best practices in newborn and child health at all levels of the health system
- Support and engage networks of Councils of Women in child health initiatives
- Develop a plan for standardization of *mutuelles* with a focus on fee structure, transferability and equity, to increase access to essential MCH services

Longer Term Recommendations
- Update and integrate the epidemiological health information system with the SIS to pilot a community based child health information system
- Strengthen outreach and community based child health services especially in areas where individuals have trouble accessing services
- Identify motivated individuals to receive additional training and serve as health *animateurs* or community health workers specifically for newborn and child health in their communities
- Develop emergency transport and communication systems for health facilities to provide stabilization and effective referral for seriously ill infants and children
Family Planning/Birth Spacing

Priority Recommendations
- Develop IEC messages/materials on the value of birth spacing as a child survival intervention and incorporate into onsite training of nurses doing MCH care and IMCI

Longer Term Recommendations
- Conduct IEC campaign targeting men with messages about the benefits of family planning for mothers and children
- Increase method choice and availability at health facilities
- Provide outreach and community based distribution where centers do not provide FP onsite (e.g. mission health facilities)
- Engage local administration authorities (e.g. cell leaders) to take a leadership role in the promotion of FP within the context of optimum birth spacing
- Train health care providers to counsel women, including an explanation of the negative side effects of specific methods to prevent discontinuation of contraception

Antenatal Care

Priority Recommendations
- Create a particular “service package” for each ANC visit corresponding with the course of pregnancy and including elements women/families value such as ITNs, IPT (intermittent presumptive treatment for malaria) and PMTCT

Longer Term Recommendations
- Increase ANC visits earlier in pregnancy by offering incentives. One example is a “service package” and another is to provide a similar incentive to that found in Cyangugu where 3 ANC visits is rewarded with a free delivery at the facility
- Communicate benefits of ANC to the community with a focus on male decision-makers

Safe Delivery and Newborn Care

Priority Recommendations
- Introduce improvements identified by communities to enhance facility deliveries, including delivery position choice, improved privacy and courtesy
- Develop postpartum and newborn components of care – standards and an essential newborn package of care. Develop capacity and roles of providers to include post partum care for the mother and newborn
- Ensure that when performance-based contracting is implemented it increases facility deliveries and improves delivery outcomes without creating adverse effects.
Longer Term Recommendations

- Build capacities for emergency obstetrical care
- Provide a follow-up visit, even through outreach, after birth to check for any postpartum and/or postnatal complications; ideally within the first two days. Increase capacity and develop roles of providers to include postpartum and postnatal follow up care of the mother and newborn
- Eliminate or reduce financial barriers to delivering in facilities, especially where cesarean section is necessary

Priority Recommendations

- Establish programmatic linkages between MCH programs and TRAC/CNLS
- Explore and then implement approaches to ensure that PMTCT/VCT services do not undermine the delivery of routine MCH services
  - Perform a systematic analysis of activities, roles and responsibilities of PMTCT/VCT at the district and facility level and how these added responsibilities impact the routine workload of facility providers
  - Design a new mechanism for more efficient delivery of integrated PMTCT/ART with routine MCH services
  - Reallocate staff and ensure division of responsibilities per site to ensure that essential MCH services are adequately addressed
- Integrate HIV into Newborn/IMCI algorithms to expand early case finding, management and referral of infants and children needing HIV treatment, care and support

Longer Term Recommendations

- Develop follow-up systems for infants born to HIV positive mothers including a mechanism (e.g., drug supply management and counseling) to assure compliance to treatment for the newborn according to Rwanda national policy
- Maximize use of resources from global programs like the Global Fund for HIV/AIDS, TB, and Malaria to address child health. Develop specific operational plans and program linkages and budgets to facilitate synergistic use of such funds, and advance beyond rhetoric to functional programming
- Include pediatric HIV component within the community based child health treatment programs (e.g., home based management of malaria)
- Target men through PMTCT BCC/IEC activities

Recommendations from the national Coordinator of PMTCT programs:

- Continue to increase PMTCT coverage while ensuring quality
- Increase access to ART (currently only 77 sites) for HIV positive mothers who need it
- Promote skilled attendance at delivery as a critical aspect of VCT/PMTCT intervention for mothers and newborns
- Improve infant and young child feeding in the context of HIV
Priority Recommendations

- Conduct an in-depth baseline study to identify needs and establish detailed mapping of existing interventions and distribution of resources for treatment, care and support of infected and affected children in the country

Longer Term Recommendations

- Support CNLS and TRAC in the coordination of all partners and monitoring and evaluation of pediatric HIV/AIDS interventions
- Reinforce the link between PMTCT and Care and Treatment Technical Groups, with emphasis on pediatric care and referral systems
- Advocate for more resource mobilization for infected and affected children
- Build capacity of institutions and organizations providing care and support of infected and affected children
  - Increase availability of pediatric ARV formulations
  - Increase use of prevention care package including cotrimoxazole
  - Improve skills of providers in pediatric HIV care and treatment
- Heighten mobilization efforts to eradicate HIV-related stigma and discrimination of and within affected families
- Encourage intra-familial support through home visits
- Expand support for income generating activities in HIV affected households
- Identify and operationalize other entry points for ART and care of HIV infected children, e.g. referral by home based care providers, OVC programs

Integrated Management of Childhood Illnesses

Priority Recommendations

- Finalize and validate the IMCI training materials in the context of Rwanda
- Accelerate the development and implementation of IMCI expansion plans for known interventions for major causes of mortality
- Harmonize the IMCI expansion plans of GOR, donors and NGOs to assure maximal coverage

Longer Term Recommendations

- Establish and meet minimum staffing requirements for each program and assure accountability for program development and quality implementation, particularly for IMCI
- Conduct ethnographic studies that investigate use and impact of traditional healers’ childhood illness treatment practices
- Promote IMCI key family practices (see Annex 12)
Priority and Long Term Recommendations

**Priority Recommendations**
- Assess costs and benefits of building on EPI platform to expand access to other pediatric services and implement solutions based on findings

**Longer Term Recommendations**
- Develop concrete mechanisms to integrate EPI within other MCH programs, including the community based child health program, and to assure coordinated planning between EPI and MCH programs.
- Consider GAVI application for introduction of new vaccines

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**Expanded Program on Immunization**

**Priority Recommendations**
- Develop infant and young child feeding (including for HIV) policy, strategy and norms/standards

**Longer Term Recommendations**
- Draft feeding recommendations for well and sick children as part of the IMCI adaptation process
- Document and scale up a community based approach to promote appropriate maternal and child feeding (supplemental practices for HIV positive and negative mothers)

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**Infant and Young Child Feeding / Nutrition**

**Priority Recommendations**
- Subsidize ITNs not only for expectant mothers but also for households with U5 children
- Document and support the scaling up of home based management of fever; use it as a platform to introduce other home based management of childhood illnesses, e.g., diarrhea

**Longer Term Recommendations**
- Support research to better identify role of private pharmacies in first line treatment of fever
- Introduce case management for severe fever and malaria to improve first referral care
- Operationalize policy to make rectal artesunate available at lower level health facilities to be administered in cases of severe malaria currently referred to a higher level health facility
• Support operational research to identify programmatic changes required for the transition to ACTs, including the role of rapid diagnostics
• Develop/evaluate community based surveillance and data systems that can be integrated with national SIS and used for local decision-making and accountability