

1 **Title**

2 **Inquiry in Ridding the Democratic Republic of**
3 **the Congo of sleeping sickness, a dream at our**
4 **fingertips: comparing to the Epidemiology of**
5 **human African trypanosomiasis in the**
6 **Democratic Republic of the Congo 2002-2003**

7
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16 Suddenly breaking of financial aid, African Human Trypanosomiasis, the Democratic Republic of
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25 **DATA AVAILABILITY STATEMENT:** Data underlying the findings described in the
26 manuscript are freely available to other researchers in the manuscript itself in 9 tables and in 15
27 tables in supportive information.

28 **Abstract**

29 **Background**

30 In the Democratic Republic of the Congo, the international support was suddenly withdrawn after
31 the massacre of students at the Lubumbashi University in May 1990. The interruption of the
32 international aid from 1990 to 1991 would undoubtedly have a long-lasting negative effect on case
33 load. So, the National Sleeping Sickness Control Programme—NSSCP (*Programme National de*
34 *Lutte contre la Trypanosomiase Humaine Africaine*) (PNLTHA) remains vulnerable without
35 international aid. Currently, the number of reported new cases decreased. These achievements
36 prove that the elimination of this neglected tropical disease is possible when there is a strong
37 commitment of public authorities accompanied by scientific research centers, civil society and the
38 private sector. Without international aid, sleeping sickness remains a formidable disease difficult
39 to cure because it is depending on continued financial support and drug availability.

40 **Objectives**

41 The objectives of this work were: 1. to profile the incidence of new cases of human African
42 trypanosomiasis in the Democratic Republic of the Congo from 2002 to 2003, depending on the
43 stage of disease progression (stages 1 and 2); 2. Compare the evolution of this profile from one
44 household to another; 3. Compare the rate of confirmed parasitological diagnosis with positive
45 CATT; 4. Calculate the discrepancy rate between CATT+ and parasitological diagnosis. All the
46 above objectives are aiming to sustain the efforts made for the adoption of the 2018 Francophonie
47 resolution on the ridding of human African trypanosomiasis that may renewed donor interest,
48 including the government of the Democratic Republic of the Congo because the control of HAT is
49 completely dependent on international aid.

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51 **Methods**

52 Research is necessary on how to rationalize control activities so that control programs can adopt
53 the most effective and efficient strategies. To assess it, we analyzed epidemiologic data collected
54 by PNLTHA from 2002 to 2003.

55 **Results**

56 In all endemic areas, 1,970,101 people were tested in 2002 and 2,311,507 people in 2003. The
57 national average coverage of the total population tested (TPT) represents 16.20% of the exposed
58 population among which 13,853 new cases were detected in 2002 and 11, 481 new cases detected
59 in 2003 with the national average coverage of the population tested that represents 19.10 %.

60 **Conclusion**

61 In short, we said that the number of people already infected is probably higher than the new cases
62 reported in 2003. We are still far from the situation of 1958/60 when there was 1 new case declared
63 by 10,000 people tested (i.e. 1,100 new cases out of 13,000,000 people screen). Therefore, the
64 Congolese government must make long-term financial commitments to ensure the continuity of
65 HAT control activities.

66 **Keywords**

67 Suddenly breaking of financial aid, African Human Trypanosomiasis, the Democratic Republic of
68 the Congo

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72 **Author summary**

73 For the past three decades, the frequency of sleeping sickness tends to become a large in the
74 Democratic Republic of the Congo. This paper reviews the status of sleeping sickness in DRC
75 between 2002 and 2003, with a focus on stage patterns. Epidemiological trends at the national and
76 provincial level are presented. Today, this deadly fly-borne disease threatens more than 65 million
77 people worldwide and most of the reported cases (more than 8 out of 10) are in the Democratic
78 Republic of the Congo. Fortunately, after decades of hard work, we have never been so close to
79 eradicating sleeping sickness in the Democratic Republic of the Congo. In 2009, the number of
80 reported cases fell below 10,000, the first in half a century. In 2015, only 2,804 cases had been
81 listed. The Democratic Republic of the Congo is determined to eradicate the disease by 2020,
82 paving the way for its global eradication. Thanks to these decades of work. I submit this inquiry to
83 recognize also the work that my last mentor coauthor of this search did, he hold his doctorate on
84 this disease. This submission is an **appropriate way I found to honor and keep the memory of**
85 **my supervisor who passed away!** In advance, many thanks for your best understanding of this
86 particular circumstance. From my last mentor work, we have never been so close to the definitive
87 elimination of sleeping sickness. The number of reported new cases decreased from 26,318 in 1998
88 to 11,481 in 2003 and later to 2,804 in 2015. These achievements prove that the elimination of
89 neglected tropical diseases is possible when there is a strong commitment of public authorities
90 accompanied by scientific research centers, civil society and the private sector.

91 **Figures**

92 None

93 **Introduction**

94 Trypanosomiasis is an endemo-epidemic disease caused for Africa by trypanosoma gambiense and
95 rhodesiense.

96 It is transmitted from a parasitized individual to a healthy individual by the bite of a specific vector
97 insect, the tsetse flies or tsetse fly.

98 The infection has a fatal evolution for lack of a specific treatment, it begins with the invasion of
99 the blood and the lymphatic ways by the parasite and continues after a variable delay by the attack
100 of the nerve centers of the encephalon [1].

101 Currently, sleeping sickness tends to become a great endemic by its frequency, it remains a
102 formidable disease difficult to cure.

103 Another important fact is the appearance in the cities of this disease, considered until now rural [2].

104 In the Democratic Republic of the Congo, the break-up of Belgian-Congolese cooperation in 1990
105 would undoubtedly have hindered the national program for the control of human African
106 trypanosomiasis (PNLTHA).

107 **Research objectives**

108 The objectives of this work were:

109 1) To profile the incidence of new cases of human African trypanosomiasis in the Democratic
110 Republic of the Congo from 2002 to 2003, depending on the stage of disease progression (stages 1
111 and 2)

112 2) Compare the evolution of this profile from one household to another

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113 3) Compare the rate of confirmed parasitological diagnosis with positive CATT

114 4) Calculate the discrepancy rate between CATT + and parasitological diagnosis

115 **Research hypothesis**

116 The characterization of this evolutionary profile will make it possible to evaluate the effectiveness
117 of the national program against trypanosomiasis (PNLTHA). In the case where this action is
118 effective, the rate of new cases (NC) in stage 2 must be able to decrease significantly.

119 **Material and methods**

120 **Material**

121 We used the database established by the National Program for the Control of Human African
122 Trypanosomiasis in the DRC (PNLTHA) of 2002 and 2003.

123 **Methods**

124 This work consisted in the counting of the reports of the national program against trypanosomiasis
125 (PNLTHA) of 2002-2003 concerning the provinces of the Democratic Republic of the Congo with
126 an accent for the provinces mentioned like centers of the development of *trypanosomiasis* notably
127 Equateur, Kasai, Bandundu, Bas -Congo, Maniema, Katanga while noting the following:

128 - The location (district or province) having a high incidence

129 - The years: 2002 and 2003

130 - The number of cases in stage 2

131 - The total number of cases (at stages 1 and 2)

132

133 **Results**

134 **Table 1. Profile of the incidence of new cases of Human African Trypanosomiasis (HAT) in**
 135 **DRC from 2002 to 2003 following the stage of disease progression**

136 **A. In 2002**

| ENDEMIC AREAS | TPE | ST1 | ST2 | IR-ST1 | IR-ST2 | DELTA |
|----------------------|----------------|------------|------------|--------------|--------------|---------------|
| BAS-CONGO | 146,158 | 183 | 94 | 0.125 | 0.064 | 0.061 |
| BANDUNDU | 587,268 | 2,612 | 1,104 | 0.445 | 0.188 | 0.257 |
| MANIEMA/KATANGA | 99,184 | 329 | 191 | 0.332 | 0.193 | 0.139 |
| KASAI | 179,199 | 704 | 500 | 0.393 | 0.279 | 0.114 |
| EQUATEUR NORD | 878,026 | 332 | 642 | 0.038 | 0.073 | -0.035 |
| EQUATEUR SUD | 80,266 | 27 | 19 | 0.034 | 0.024 | 0.010 |
| TOTAL | 1,970,101 | 4,187 | 2,550 | | | |

137 Legend: TPE: Total Population Examined; ST1 and ST2: stages 1 and 2; IR-ST1 and IR- ST2:
 138 Incidence Rate in stages 1 and 2; DELTA: difference of incidence between stages 1 and 2.

139 **B. In 2003**

| ENDEMIC AREAS | TPE | ST1 | ST2 | IR-ST1 | IR-ST2 | DELTA |
|-----------------|-----------|-------|-------|--------|--------|--------|
| BAS-CONGO | 180,080 | 162 | 106 | 0.090 | 0.059 | 0.031 |
| BANDUNDU | 758,600 | 2,046 | 1,059 | 0.270 | 0.140 | 0.130 |
| MANIEMA/KATANGA | 123,713 | 292 | 126 | 0.236 | 0.102 | 0.134 |
| KASAI | 205,256 | 561 | 368 | 0.273 | 0.179 | 0.094 |
| EQUATEUR NORD | 949,747 | 203 | 461 | 0.021 | 0.049 | -0.027 |
| EQUATEUR SUD | 94,111 | 18 | 20 | 0.019 | 0.021 | -0.002 |
| TOTAL | 2,311,507 | 3,282 | 2,140 | | | |

140 Legend: TPE: Total Population Examined; ST1 and ST2: stages 1 and 2; IR-ST1 and IR- ST2:
 141 Incidence Rate in stages 1 and 2; DELTA: difference of incidence between stages 1 and 2.

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142 **Table 2. Evolution from a household to another**

143 **A. In 2002**

| ENDEMIC AREAS | TPT | NC | IR | ENDEMICITY LEVEL |
|-----------------|----------------|--------------|-------------|------------------|
| BAS-CONGO | 146,158 | 760 | 0.52 | Middle |
| BANDUNDU | 587,268 | 6,277 | 1.07 | High |
| MANIEMA/KATANGA | 99,184 | 590 | 0.59 | Middle |
| KASAI | 179,199 | 3,173 | 1.77 | High |
| EQUATEUR NORD | 878,026 | 2,436 | 0.28 | Low |
| EQUATEUR SUD | 80,266 | 158 | 0.20 | Low |
| TOTAL | 1,970,101 | 13,394 | | |

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145 Legend:

146 TPT = Total Population Tested; NC = New cases; IR = Incidence Rate

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148 **B. In 2003**

| ENDEMIC AREAS | TPT | NC | IR | ENDEMICITY LEVEL |
|-----------------|----------------|--------------|-------------|------------------|
| BAS-CONGO | 180,080 | 522 | 0.29 | Middle |
| BANDUNDU | 758,600 | 5,384 | 0.71 | High |
| MANIEMA/KATANGA | 123,713 | 737 | 0.59 | Middle |
| KASAI | 205,256 | 2,606 | 1.27 | High |
| EQUATEUR NORD | 949,747 | 1,597 | 0.17 | Low |
| EQUATEUR SUD | 94,111 | 103 | 0.11 | Low |
| TOTAL | 2,311,507 | 10,949 | | |

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150 Legend:

151 TPT = Total Population Tested; NC = New cases; IR = Incidence Rate

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158 **Table 3. Rate of confirmed parasitological diagnosis compared with positive CATT**

159 **from one household to another**

160 **A. In 2002**

| ENDEMIC AREAS | TD+ | CATT + | % CATT+ confirmed |
|-----------------|-------|--------|-------------------|
| BAS-CONGO | 246 | 441 | 55 |
| BANDUNDU | 477 | 3,508 | 13 |
| MANIEMA/KATANGA | 158 | 168 | 94 |
| KASAI | 1,021 | 1,286 | 79 |
| EQUATEUR NORD | 1,066 | 2,816 | 37 |
| EQUATEUR SUD | 45 | 51 | 88 |

161

162 Legend:

163 TD+ = Thick Drop positive (Parasitological diagnosis); CATT+ = Card Agglutination

164 Trypanosomiasis Test positive

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166 **B. In 2003**

| ENDEMIC AREAS | TD+ | CATT + | % CATT+ confirmed |
|-----------------|-----|--------|-------------------|
| BAS-CONGO | 176 | 386 | 45 |
| BANDUNDU | 570 | 3,397 | 16 |
| MANIEMA/KATANGA | 363 | 286 | 126 |
| KASAI | 811 | 1,046 | 77 |
| EQUATEUR NORD | 647 | 1,089 | 59 |
| EQUATEUR SUD | 46 | 59 | 128 |

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168 Legend:

169 TD+ = Thick Drop positive (Parasitological diagnosis); CATT+ = Card Agglutination

170 Trypanosomiasis Test positive

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175 **Table 4. Discrepancy rate between parasitological diagnoses and positive CATT**

176 **from one household to another**

177 **A. In 2002**

| ENDEMIC AREAS | TD+ | CATT + | DISCORDANCE |
|-----------------|-------|--------|------------------|
| BAS-CONGO | 246 | 441 | 55 (discordance) |
| BANDUNDU | 477 | 3,508 | 13 (discordance) |
| MANIEMA/KATANGA | 158 | 168 | 94 (concordance) |
| KASAI | 1,021 | 1,286 | 79 (discordance) |
| EQUATEUR NORD | 1,066 | 2,816 | 37 (discordance) |
| EQUATEUR SUD | 45 | 51 | 88 (concordance) |

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179 Legend:

180 TD+ = Thick Drop positive (Parasitological diagnosis); CATT+ = Card Agglutination

181 Trypanosomiasis Test positive

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183 **B. In 2003**

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| ENDEMIC AREAS | TD+ | CATT + | DISCORDANCE |
|-----------------|-----|--------|-------------------|
| BAS-CONGO | 176 | 386 | 45 (discordance) |
| BANDUNDU | 570 | 3,397 | 16 (discordance) |
| MANIEMA/KATANGA | 363 | 286 | 126 (discordance) |
| KASAI | 811 | 1,046 | 77 (discordance) |
| EQUATEUR NORD | 647 | 1,089 | 59 (discordance) |
| EQUATEUR SUD | 46 | 59 | 128 (discordance) |

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186 Legend:

187 TD+ = Thick Drop positive (Parasitological diagnosis); CATT+ = Card Agglutination

188 Trypanosomiasis Test positive

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191 **Table 5. Percentage of stage 2 cases from one period to another**

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| ENDEMIC AREAS | 2002 | 2003 | DIFFERENCE |
|----------------------|--------------|--------------|-------------------|
| BAS-CONGO | 183 | 162 | 21 |
| BANDUNDU | 2,612 | 2,046 | 566 |
| MANIEMA/KATANGA | 329 | 292 | 37 |
| KASAI | 704 | 561 | 143 |
| EQUATEUR NORD | 332 | 203 | 129 |
| EQUATEUR SUD | 27 | 18 | 9 |
| TOTAL | 4,187 | 3,282 | 905 |

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195 **Discussion**

196 **Case discussion for the year 2002**

197 **Impact**

198 In all endemic areas, 1,970,101 people were tested. The national average coverage of the population
199 tested (TPT) represents 16.20% of the exposed population among which 13,853 new cases were
200 detected.

201 The coverage of the TPT varies from province to province between 4.74% for Maniema / Katanga
202 and 51.11% for Equateur Nord, the overall infection rate is 0.69%.

203 Compared with the year 2002, the IR decrease from 0.89% to 0.69% and Bandundu took the lead
204 with 46.31% of new cases from all over the country, followed by Kasai 23.41% and Equateur Nord
205 17.97% with 16.6% new cases. 4 new mobile units were installed in December 2002 including 2
206 in Bandundu, 2 in Kasai (**Supportive information 1**).

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207 Of the 13,853 patients reported in 2002, of which 5,636 in the first stage is 52.70% and 7,844 in
208 the 2nd stage is 47.30% with 2.74% unknown stage and the data of Maniema are partial. The
209 unknown or undetermined stage are related to the pregnant woman and the bleeding lumbar
210 puncture (LP) (**Supportive information 2**).

211 Serum screening or CATT on whole blood is a strategy that the PNLTHA advocates for
212 generalization (3 consecutive years) especially in a household with a high level of endemicity i.e.
213 IR > 1%.

214 For the year 2002: 1,815,022 people were seen with CATT on whole blood or 92% of the examined
215 population and 9,128 people were confirmed positive in this group is 67% of new cases; 148,019
216 or 8% of 1,815,022 people had a positive result at CATT (**Supportive information 3**). Cases
217 diagnosed by other methods in Maniema and Equateur Sud do not have a known method of
218 diagnosis.

219 PNLTHA recommends the use of Pentamidine and Bayer for the treatment of patients in the first
220 phase, Melarsoprol for the second phase while DFMO and LAMPIT are reserved as relay drugs
221 (**Supportive information 4**).

222 The lumbar puncture performed was 28,253 or 58.6% of the controls performed. PLC abnormal
223 7,187 is 25.4% i.e. the elements are not the normal limits i.e. <5 / mm³, this explains the difficulty
224 the PNLTHA have for the post-therapeutic follow-up. Most patients, once out, if they feel better
225 do not come back. An effort should be made to identify relapse cases (**Supportive information 8**).

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229 **Extent of the problem at the national level.**

230 The population at risk is estimated at 12,600,000 people representing more than 20% of the
231 population of the Democratic Republic of the Congo and 23% of the total population at risk of
232 Africa which is estimated by the WHO to 60 million.

233 To date, DRC continues to bear the heaviest burden of gambiense HAT, having reported 84 % of
234 all African cases in 2012 (i.e., 5,968/7,106). Therefore, achieving the international goal of
235 gambiense HAT elimination [3], will depend to a large extent on the progress that DRC will be
236 able to make [4] in ridding gambiense HAT following the Yerevan resolution on neglected tropical
237 diseases (https://www.who.int/neglected_diseases/news/OIF-commit-to-strengthening-the-fight-against-NTDs/en/).

239 The monthly average of new cases in the country was 1,154 in 2002, the at-risk population covered
240 by specialized services and primary health care in 2002 represents 16% of the total population at
241 risk, or 2,040,927 persons, of which 88% is 1,815,022 were tested with CATT, which represents
242 approximately 14.4% of the exposed population. Of these 88% came out 9,128 new cases. This
243 coverage varies from province to province. It ranges from 4.74% in Maniema to 51% in Equateur
244 Nord.

245 **Extent of the problem at the provincial level**

246 The following provinces reported 87% of new cases in 2002: 46.3% Bandundu; 23.4% in Kasai
247 and 17.9% in Equateur Nord.

248 **Case discussion for the year 2003**

249 **Impact**

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250 In all endemic areas, 2,405,991 people were examined. The national average coverage of the TPT
251 represents 19.10% of the exposed population. The number of new Human African Trypanosomiasis
252 (HAT) cases is 11,481 (**Supportive information 9**). Among the 11,481 new HAT patients
253 declared:

254 - 4,339 or 37.8% at the 1st stage (lymphatic-blood)

255 - 6,913 or 60.22% at the 2nd stage (meningoencephalopathic)

256 - 229 or about 1.98% whose stadium diagnosis was not made because of:

257 * refusal of the lumbar puncture or haemorrhagic not repeated

258 * The gravid status of the patient

259 - 5,786 new cases were detected by specialized units

260 - 5,695 new cases were detected by fixed structures (CDTC and health facilities) (**Supportive**
261 **information 10**).

262 For the year 2003; 2,166,835 people were seen with CATT test on whole blood or 94% of the
263 population examined (**Supportive information 11**).

264 Cases diagnosed by other methods in Maniema and Equateur Sud have no known diagnostic
265 method (**Supportive information 12**).

266 PNLTHA recommends the use of Pentamidine and Bayer for the treatment of patients in the first
267 phase, Melarsoprol for the second phase while the DFMO and Lampit are reserved as relay drugs.

268 Arsobal remains the most used drug (**Supportive information 13**).

269 **Extent of the problem at national level**

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270 The monthly average of new cases in Democratic Republic of the Congo was 957 in 2003.

271 **(Supportive information 14)**

272 TPE coverage varies from province to province the other between 8.17% for Equateur Sud and
273 52.69% for Equateur Nord.

274 The overall infection rate decreased from 0.89% to 0.48% in 2003. 4 new mobile units (MU) were
275 installed in December 2002, including 2 in Bandundu and contributed to the work during 2003.

276 Thanks to the funding of the WHO for the 3 MU and Belgian Technical Cooperation for 1 MU.

277 The eastern province provided after ISANGI survey 251 NC out of 4,140 people tested with a
278 detection rate of 6.06 highlighting the severity of the endemic and calling for an organization to
279 fight the Human African Trypanosomiasis in the Democratic Republic of the Congo following the
280 resolution of 2018 French Summit Committee in Yerevan (Armenia) on the Neglected Tropical
281 Diseases (https://www.who.int/neglected_diseases/news/OIF-commit-to-strengthening-the-fight-against-NTDs/en/).

283 **Extent of the problem at the provincial level**

284 Bandundu is in the lead with 47% of new cases from across the country, followed by Kasai 22.6%
285 and Equateur Nord 14.80%

286 **Case discussion for 2002 and 2003**

287 Table 1 shows that the infection rate decreased from 2002 to 2003 in all households except
288 Equateur Nord, while Table 2 reports the severity of sleeping sickness in the Bandundu provinces.
289 and from Kasai, Table 3 extended the discrepancy between the parasitological test (thick drop) and
290 the serological test and raised the problem of CATT sensitivity; finally, Table 4 showed that the
291 number of cases detected in stage 2 has decreased (4,187 cases detected in 2002 against 3,282 cases

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292 detected in 2003, a difference of 905 cases), hence we encourage the PNLTHA to continue in this
293 direction of the reduction of HAT-related morbidity.

294 The total number of new cases of Human African Trypanosomiasis (HAT) in the Democratic
295 Republic of the Congo declined sharply from 17,322 in 2001 to 13,853 in 2002, a decrease related
296 to the number of new cases in Equateur Nord. In the provinces of Bandundu and Kasai, however,
297 the problem of Human African Trypanosomiasis (HAT) remains important.

298 We see a growing evolution of the population examined from year to year. This would be even
299 higher if the wars had not caused the slowdown in active screening because of insecurity in the
300 combat zones. The new cases detected show the effort deployed by the heroes of the shadows, and
301 once the peace is restored, the work's breadth (**Supportive information 7 and 14**).

302 Serum screening or CATT on whole blood is a strategy that the PNLTHA advocates for
303 generalization (3 consecutive years) especially in a household with a high level of endemicity i.e.
304 IR > 1%.

305 **Conclusion**

306 In short, we say that the actual number of people already infected is probably higher than the new
307 cases reported. We are still far from the situation of 1958/60 when there was 1 new case declared
308 by 10,000 people examined (i.e. 1,100 new cases out of 13,000,000 people seen). Therefore, the
309 Congolese government must make long-term financial commitments to ensure the continuity of
310 HAT control activities.

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SUPPORTIVE INFORMATION

1. RESULTS OF HAT ACTIVITIES IN 2002 BY ENDEMIC ZONE

S 1: Distribution by Endemic Area of Total Registered Population (TRP), Total Enrolled Population (TEP) of New Cases (NC) and Infection Rate (IR) in 2002

| ENDEMIC AREAS | EXPOSED POP | Nbr HZ | HZ HAT | Nbr MU | | TPC | TPE | % cover | TP | NC | IR | Level of Endemicity |
|--------------------|-------------|--------|--------|-----------------------|-----------------------|-----------|-----------|--------------|--------|--------|------|---------------------|
| | | | | 1 st S e m | 2 nd S e m | | | | | | | |
| BAS-CONGO | 1,700,000 | 27 | 19 | 5 | 5 | 228,431 | 146,158 | 13.44 | 63.98 | 760 | 0.52 | Middle |
| BANDUNDU | 3,800,000 | 38 | 31 | 12 | 14 | 767,966 | 587,268 | 20.21 | 76.47 | 6,277 | 1.07 | Severe |
| MANIEMA /KATANGA | 1,200,000 | 81 | 16 | 4 | 4 | 81,994 | 99,184 | 6.83 | 120.96 | 590 | 0.59 | Middle |
| KASAI | 2,000,000 | 58 | 35 | 5 | 7 | 294,764 | 179,199 | 14.74 | 60.79 | 3,173 | 1.77 | Severe |
| EQUATEUR NORD | 2,000,000 | 20 | 15 | 9 | 9 | 1,022,219 | 878,026 | 51.11 | 85.89 | 2,436 | 0.28 | Low |
| EQUATEUR SUD | 1,000,000 | 13 | 6 | 2 | 2 | 77,743 | 80,266 | 7.77 | 103.25 | 158 | 0.20 | Middle |
| KINSHASA | 600,000 | 22 | 8 | 2 | 2 | 80,644 | 70,826 | 13.44 | 87.83 | 459 | 0.65 | Middle |
| PROVINCE ORIENTALE | 300,000 | 47 | 3 | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| TOTALS | 12,600,000 | 306 | 133 | 39 | 43 | 2,553,761 | 2,040,927 | 16.20 | 79.92 | 13,853 | 0.68 | Middle |

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Legend: HZ = Health Zone; HZ HAT = Health Zone at risk of trypanosomiasis; MU = Mobile Unit; TPC = Total Population Counted; NA=Not Available or missing data

PTE = Total Population Examined; NC = new cases; IR = Infection Rate

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358 **S2: Distribution by endemic area of new cases recorded according to the screening circumstances**
 359 **and stage of the disease in the DRC in 2002**

| Circumstances of screening | TPT | TPT AS | TPT PS | ACTIVE SCREENING | | | | PASSIVE SCREENING | | | | TOT NC | |
|----------------------------|-----------|-----------|---------|-----------------------|-----------------------|---------|-------|-----------------------|-----------------------|---------|-------|--------|--|
| | | | | 1 st stage | 2 nd stage | Unk own | Total | 1 st stage | 2 nd stage | Unk own | Total | | |
| Endemics areas | | | | | | | | | | | | | |
| BAS-CONGO | 146,158 | 142,321 | 3,837 | 183 | 94 | NA | 277 | 175 | 308 | NA | 483 | 760 | |
| BANDUNDU | 587,268 | 551,568 | 35,700 | 2,612 | 1,104 | 163 | 3,879 | 605 | 1,783 | 10 | 2,398 | 6,277 | |
| MANIEMA/KATANGA | 99,184 | 97,929 | 1,255 | 329 | 191 | 7 | 527 | 17 | 46 | NA | 63 | 590 | |
| KASAI | 179,199 | 165,532 | 13,667 | 704 | 500 | 88 | 1,292 | 251 | 1,615 | 15 | 1,881 | 3,173 | |
| EQUATEUR NORD | 878,026 | 822,283 | 55,743 | 332 | 642 | 50 | 1,024 | 211 | 1,190 | 11 | 1,412 | 2,436 | |
| EQUATEUR SUD | 80,266 | 79,213 | 1,053 | 27 | 19 | 1 | 47 | 11 | 100 | NA | 111 | 158 | |
| KINSHASA | 70,826 | 67,170 | 3,656 | 141 | 88 | 26 | 255 | 38 | 164 | 2 | 204 | 459 | |
| PROVINCE ORIENTALE | 0 | 0 | 0 | NA | NA | NA | 0 | NA | NA | NA | 0 | 0 | |
| TOTALS | 2,040,927 | 1,926,016 | 114,911 | 4,328 | 2,638 | 335 | 7,301 | 1,308 | 5,206 | 36 | 6,552 | 13,853 | |
| PERCENTAGE (%) | | | | | | | 52.70 | | | | 47.30 | | |

360 **Legend: TPT = Total Population Tested; TPT AS = Total Population Tested by Active Screening; TPT PS = total**
 361 **population tested by passive screening; NA=Not Available or missing data, NC = new case**

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S 3: CATT test results in relation to ganglia in 2002

| ENDEMIC AREAS | POSITIVE CATT | | | | | | | | | NEGATIVE CATT | | | | | | | | | TOTALS |
|--------------------|---------------|--------|--------|------------------|--------|--------|-------------------|---------|---------|---------------|--------|--------|------------------|-----------|-----------|------------------|-----------|-----------|-----------|
| | Ggl palpated | | | Ggl not palpated | | | Tot catt positive | | | Ggl palpated | | | Ggl not palpated | | | Tot negatif catt | | | |
| | Try p+ | Try p- | S/T OT | Try p+ | Try p- | S/T OT | Try p+ | Tryp - | S/T OT | Try p+ | Try p- | S/T ot | Try p+ | Tryp- | S/Tot | Try p+ | Tryp- | S/Tot | |
| BAS-CONGO | 238 | 757 | 995 | 203 | 4,707 | 4,910 | 441 | 5,464 | 5,905 | 8 | 6,231 | 6,239 | 28 | 106,225 | 106,253 | 36 | 112,456 | 112,492 | 118,397 |
| BANDUNDU | 1,947 | 8,947 | 10,894 | 1,561 | 17,491 | 19,052 | 3,508 | 26,438 | 29,946 | 212 | 21,403 | 21,615 | 143 | 441,108 | 441,251 | 355 | 462,511 | 462,866 | 492,812 |
| MANIEMA/KATANGA | NA | NA | 0 | NA | NA | 0 | 168 | 778 | 946 | NA | NA | 0 | NA | NA | 0 | 1 | 0 | 1 | 24,494 |
| KASAI | 848 | 1,315 | 2,163 | 438 | 5,800 | 6,238 | 1,286 | 7,415 | 8,401 | 11 | 8,096 | 8,107 | 2 | 148,639 | 148,641 | 13 | 156,735 | 156,748 | 165,149 |
| EQUATEUR NORD | 825 | 2,436 | 3,261 | 1,056 | 45,047 | 46,103 | 2,816 | 86,856 | 89,672 | 4 | 7,885 | 7,889 | 18 | 785,691 | 785,709 | 22 | 793,576 | 793,598 | 883,270 |
| EQUATEUR SUD | 12 | 257 | 269 | 39 | 3,873 | 3,912 | 51 | 4,130 | 4,181 | NA | 1,979 | 1,979 | NA | 93,188 | 93,188 | 0 | 95,167 | 95,167 | 99,348 |
| KINSHASA | 201 | 299 | 500 | 230 | 8,238 | 8,468 | 431 | 8,537 | 8,968 | NA | 1,640 | 1,640 | NA | 20,944 | 20,944 | 0 | 22,584 | 22,584 | 31,552 |
| PROVINCE ORIENTALE | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 0 |
| TOTALS | 4,071 | 14,011 | 18,082 | 3,527 | 85,156 | 88,683 | 8,701 | 139,318 | 148,019 | 235 | 47,234 | 47,469 | 191 | 1,595,795 | 1,595,795 | 427 | 1,643,029 | 1,643,456 | 1,815,022 |
| PERCENTAGE (%) | 22.51 | 77.49 | NA | 3.98 | 96.02 | NA | 5.88 | 94.12 | NA | 0.50 | 99.50 | NA | 0.01 | 99.99 | | 0.03 | 99.97 | NA | |

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Legend: Tryp + = presence of anti-trypanosome antibodies; Tryp = absence of anti-trypanosome antibodies Ggl = ganglia; CATT = card agglutination test trypanosome; NA=Not Available or missing data

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387 **S4: Distribution by endemic area of new cases detected according to the mode of diagnosis**
 388 **in the DRC in 2002**

| Diagnosis mode | GP | FB | TD | TBC | CSF | CLIN | OTHERS WOO + DC LC | TOTAL |
|-----------------------|-------|-------|-------|------|-------|------|-----------------------|--------|
| Endemic areas | | | | | | | | |
| BAS-CONGO | 419 | 51 | 246 | NA | 1 | NA | 43 | 760 |
| BANDUNDU | 3,158 | 2,018 | 477 | 23 | 553 | 1 | 47 | 6,277 |
| MANIEMA/KATANGA | 235 | 153 | 158 | NA | 23 | 21 | 0 | 590 |
| KASAI | 1,782 | 54 | 1,021 | 2 | 291 | 17 | 6 | 3,173 |
| EQUATEUR NORD | 875 | 174 | 1,066 | NA | 267 | 48 | 6 | 2,436 |
| EQUATEUR SUD | 27 | 21 | 45 | 1 | 11 | NA | 53 | 158 |
| KINSHASA | 176 | 21 | 174 | 6 | 61 | 1 | 20 | 459 |
| PROVINCE ORIENTALE | NA | NA | NA | NA | NA | NA | NA | 0 |
| TOTALS | 6,672 | 2,492 | 3,187 | 32 | 1,207 | 88 | 175 | 13,853 |
| DETECTION RATE | 48.16 | 17.99 | 23.01 | 0.23 | 8.71 | 0.64 | 1.26 | |

389 **Legend: GP = ganglionic puncture; FB = fresh blood; TD = thick drop (parasitology diagnosis);**
 390 **TBC = triple blood centrifugation; CSF = cerebrospinal fluid, NA=Not Available or missing data**

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403 **S5: distribution by endemic area of patients treated according to the therapeutic regime in**
 404 **2002**

| Drugs | PEN T | B A Y E R 2 0 5 | P E N T + B A Y | ARSOBAL | | | | DFMO | | | | LAMPIT | | | | OTHERS (ARS+LAMPIT) | | | | TOTAL | | | | | | | | | | | | | | | | | | |
|---------------------|-----------|--------------------------------------|--------------------------------------|---------|---------------|---------|----|-----------|----|---------|----|---------|----|---------|----|------------------------|---------|---------|---------|-------|---------------|---------------|---------|---|---|---|---|---|---|---|---|---|---|---|---|---|------------|-----------|
| | | | | N | A | B | TO | N | A | B | TO | N | A | B | TO | N | A | B | TO | N | A | B | TO | | | | | | | | | | | | | | | |
| Endemic areas | N | C | N | C | N | C | N | C | N | C | N | C | N | C | N | C | N | C | N | C | N | C | N | C | N | C | N | C | N | C | N | C | N | C | N | C | | |
| BAS-CONGO | 194 | | 13 5 | 6 | 34 | 3 | 9 | 406 | 7 | 8 | NA | 15 | NA | NA | NA | 0 | NA | NA | NA | 0 | 73 6 | 11 | 9 | | | | | | | | | | | | | | | 756 |
| BANDUNDU | 2, 806 | | 22 7 | 2 | 3, 12 7 | 19 | 4 | 3, 150 | 1 | 2 | 2 | 5 | NA | NA | 1 | 1 | 5 | 2 | 1 | 8 | 6, 16 8 | 23 | 8 | | | | | | | | | | | | | | | 6, 199 |
| MANIEMA/KATA NGA | 121 | | 17 | 0 | 23 5 | 7 | 0 | 242 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 37 3 | 46 | 0 | | | | | | | | | | | | | | 419 | |
| KASAI | 849 | | 18 | NA | 1, 89 8 | 60 | 25 | 1, 983 | NA | 62 | 24 | 86 | NA | 8 | 79 | 87 | 23 7 | 24 4 | 10 5 | 586 | 3, 00 2 | 37 4 | 23 3 | | | | | | | | | | | | | | 3, 609 | |
| EQUATEUR NORD | 215 | | 32 1 | 1 | 1, 89 4 | 43 7 | 43 | 2, 374 | 2 | 16 7 | | 16 9 | 1 | 16 2 | 11 | 174 | | 11 2 | 3 | 115 | 2, 43 4 | 87 8 | 57 | | | | | | | | | | | | | | 3, 369 | |
| EQUATEUR SUD | 32 | | 0 | 0 | 13 9 | 5 | 0 | 144 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 14 | 1 | 15 | 17 1 | 19 | 1 | | | | | | | | | | | | | | 191 | |
| KINSHASA | 155 | | 0 | 0 | 30 9 | 15 | 0 | 324 | 1 | 25 | 0 | 0 | 0 | 0 | 0 | 0 | 28 | 2 | 0 | 30 | 49 8 | 42 | 0 | | | | | | | | | | | | | | 535 | |
| PROV. ORIENT | NA | | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 0 | 0 | 0 | | | | | | | | | | | | | | 0 | |
| TOTALS | 4, 372 | | 71 8 | 9 | 7, 99 6 | 54 6 | 81 | 8, 623 | 11 | 26 4 | 26 | 27 5 | 1 | 17 0 | 91 | 262 | 27 0 | 37 4 | 11 0 | 754 | 1, 37 7 | 1, 39 3 | 30 8 | | | | | | | | | | | | | | 15, 078 | |

405 **Legend: PENT = Pentamidine; DFMO = Difluoro-methyl-ornithin; ARS = Arsobal ; BAY = Bayer; BT = put**
 406 **back into treatment for treatment failure; NA=Not Available or missing data**

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S6: Distribution of the cases following the control structures in 2002

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| Endemic areas | BAS-CONGO | BANDUNDU | MANIEMA/KATANGA | KASAI | EQUATEUR NORD | EQUATEUR SUD | KINSHASA | PROVINCE ORIENTALE | TOTALS |
|--------------------|-----------|----------|-----------------|-------|---------------|--------------|----------|--------------------|--------|
| Control Structures | | | | | | | | | |
| MU | 316 | 3,936 | 463 | 1,267 | 1,024 | 54 | 257 | 0 | 7,317 |
| CDTC | 374 | 978 | 109 | 951 | 1,402 | 183 | 191 | 0 | 4,108 |
| FS | 70 | 1,363 | 18 | 955 | 10 | 1 | 11 | 0 | 2,428 |
| TOTAL | 760 | 6,277 | 590 | 3,173 | 2,436 | 158 | 459 | 0 | 13,853 |

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Legend: MU= Mobile Unit

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S 7: Evolution of HAT in the last six years in the DRC; TPE / INC report and monthly average of NC by year

| YEAR | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 |
|---------------------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| DATA COLLECTED | | | | | | | |
| TPT | 1,297,778 | 1,168,404 | 1,472,674 | 1,298,933 | 1,605,816 | 2,028,238 | 2,040,927 |
| NC | 19,485 | 25,094 | 26,318 | 18,684 | 16,975 | 17,322 | 13,853 |
| Infection rate | 1.50 | 2.15 | 1.79 | 1.44 | 1.06 | 0.85 | 0.68 |
| Monthly average New cases | 1,624 | 2,091 | 2,193 | 1,557 | 1,415 | 1,444 | 1,154 |

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Legend: TPT = Total Population Tested; NC = new cases; IR=Infection Rate

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S 8: Lumbar punctures for diagnosis and control in 2002

| LP | 2002 | | | | | | | |
|--------------------|---------|---------|-----------|--------------------|---------|--------|--------|-------|
| | NC 2000 | NC 2001 | NC 2002 | Prevision LPC 2002 | PLDA-DB | TLPC | TPLCN | TLPAC |
| BAS-CONGO | 816 | 736 | 760 | 2312 | 760 | 1,926 | 1,664 | 262 |
| BANDUNDU | 5,588 | 7,190 | 6,277 | 19,055 | 6,104 | 5,289 | 5,232 | 57 |
| MANIEMA/KATANGA | 323 | 711 | 590 | 1,624 | 286 | NA | NA | 0 |
| KASAI | 2,810 | 2,905 | 3,173 | 8,888 | 3,070 | 3,854 | 1,697 | 2,157 |
| EQUATEUR NORD | 6,673 | 4,990 | 2,436 | 14,099 | 2,375 | 15,988 | 11,769 | 4,219 |
| EQUATEUR SUD | 139 | 106 | 158 | 403 | 157 | 565 | 173 | 3,992 |
| KINSHASA | NA | NA | NA | NA | NA | NA | NA | NA |
| PROVINCE ORIENTALE | 16,975 | 17,319 | 1,385,553 | 48,147 | 13,183 | 28,253 | 21,066 | 7,187 |
| TOTALS | | | | | | | | |

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Legend: LP = lumbar puncture; NC = new case; PLC LPC= lumbar puncture control; TLPC = Total Lumbar Puncture Control; TLPNC = total lumbar puncture normal control; TLPAC= total lumbar puncture of abnormal control, NA=Not Available or missing data

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2. RESULTS OF 2003 THA CONTROL ACTIVITIES BY ENDEMIC ZONE

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S 9: Distribution by Endemic Area of Total Registered Population (TRP), Total Enrolled

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Population (TEP) of New Cases (NC) and Infection Rate (IR) in 2003

| ENDEMIC AREAS | EXPOSED POPULATIONS | Nbr HZ | HZ THA | Nbre MU | TPC | TPT | % covert | TP | NC | IR | Endemicity level |
|--------------------|---------------------|--------|--------|---------|-----------|-----------|----------|--------|--------|------|------------------|
| BAS-CONGO | 1,700,000 | 27 | 19 | | 236,469 | 180,808 | 13.91 | 76.46 | 522 | 0.29 | Middle |
| BANDUNDU | 3,800,000 | 38 | 31 | | 926,675 | 758,600 | 24.39 | 81.86 | 5,384 | 0.71 | Severe |
| MANIEMA/KATANGA | 1,200,000 | 81 | 16 | | 130,124 | 123,713 | 10.84 | 95.07 | 737 | 0.59 | Middle |
| KASAI | 2,000,000 | 58 | 35 | | 286,365 | 205,256 | 14.32 | 71.68 | 2,606 | 1.27 | Severe |
| EQUATEUR NORD | 2,000,000 | 20 | 15 | | 1,053,798 | 949,747 | 52.69 | 90.13 | 1,597 | 0.17 | Middle |
| EQUATEUR SUD | 1,000,000 | 13 | 6 | | 81,726 | 94,111 | 8.17 | 115.15 | 103 | 0.11 | Low |
| KINSHASA | 600,000 | 22 | 8 | | 63,060 | 89,619 | 10.51 | 142.11 | 286 | 0.32 | Middle |
| PROVINCE ORIENTALE | 300,000 | 47 | 3 | | 0 | 4,140 | 0.00 | NA | 251 | 6.06 | Very severe |
| TOTALS | 12,600,000 | 306 | 133 | | 2,778,167 | 2,405,991 | 19.10 | 86,60 | 11,481 | 0.40 | Middle |

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Legend: HZ = Health Zone; HZ HAT = Health Zone at risk of trypanosomiasis; MU = Mobile Unit; TPC = Total Population Counted; TPT = Total Population Tested; NC = new cases; IR = Infection Rate

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S 10: Distribution by endemic area of new cases recorded according to the screening circumstances and stage of the disease in the DRC in 2002

| Circumstances of screening | ACTIVE SCREENING | | | | PASSIVE SCREENING | | | | TOT NC |
|----------------------------|--------------------------|--------------------------|--------|-------|--------------------------|--------------------------|--------|-------|-----------|
| | 1 st stage | 2 nd stage | Unkown | Total | 1 st stage | 2 nd stage | Unkown | Total | |
| Endemics Areas | | | | | | | | | |
| BAS-CONGO | 162 | 106 | 2 | 270 | 67 | 185 | 0 | 252 | 522 |
| BANDUNDU | 2,046 | 1,059 | 77 | 3,182 | 547 | 1,646 | 9 | 2,202 | 5,384 |
| MANIEMA/KATANGA | 292 | 126 | 25 | 443 | 58 | 231 | 0 | 289 | 732 |
| KASAI | 561 | 368 | 41 | 970 | 157 | 1465 | 14 | 1,636 | 2,606 |
| EQUATEUR NORD | 203 | 461 | 16 | 680 | 75 | 835 | 7 | 917 | 1,597 |
| EQUATEUR SUD | 18 | 20 | 2 | 40 | 12 | 50 | 1 | 63 | 103 |
| KINSHASA | 43 | 40 | 22 | 105 | 18 | 163 | 0 | 181 | 286 |
| PROVINCE ORIENTALE | 34 | 54 | 8 | 96 | 46 | 104 | 5 | 155 | 251 |
| TOTALS | 3,359 | 2,234 | 193 | 5,786 | 980 | 4,679 | 36 | 5,695 | 11,481 |
| PERCENTAGE (%) | | | | 50.40 | | | | 49.60 | |

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Legend: NC = new cases

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S 11: CATT test results for ganglia in 2003

| ENDEMIC AREAS | POSITIVE CATT | | | | | | | | | NEGATIVE CATT | | | | | | | | | TOT |
|--------------------|---------------|--------|--------|------------------|--------|--------|-------------------|--------|--------|---------------|--------|--------|------------------|---------|-----------|-------------------|-----------|-----------|-----------|
| | Ggl palpated | | | Ggl not palpated | | | Tot positive catt | | | Ggl palpated | | | Ggl not palpated | | | Tot negative catt | | | |
| | Try p+ | Try p- | S/T OT | Try p+ | Try p- | S/T OT | Try p+ | Try p- | S/T OT | Try p+ | Try p- | S/T OT | Try p+ | Tryp - | S/Tot | Try p+ | Tryp- | S/Tot | |
| BAS-CONGO | 232 | 547 | 779 | 154 | 5,943 | 6,097 | 386 | 6,490 | 6,876 | 0 | 4,003 | 4,003 | 2 | 137,257 | 137,259 | 2 | 141,260 | 141,262 | 148,138 |
| BANDUNDU | 1,823 | 5,333 | 7,156 | 1,574 | 14,879 | 16,453 | 3,397 | 20,212 | 23,609 | 114 | 35,577 | 35,681 | 52 | 650,289 | 650,341 | 166 | 685,866 | 686,032 | 709,641 |
| MANIEMA/KATANGA | 164 | 470 | 634 | 122 | 1,847 | 1,969 | 286 | 2,317 | 2,603 | 11 | 5,525 | 5,536 | 2 | 65,953 | 65,955 | 13 | 71,478 | 71,491 | 74,094 |
| KASAI | 641 | 943 | 1,584 | 405 | 5,467 | 5,872 | 1,046 | 6,410 | 7,456 | 11 | 8,096 | 8,107 | 2 | 148,639 | 148,641 | 13 | 156,735 | 156,798 | 164,204 |
| EQUATEUR NORD | 487 | 1,660 | 2,147 | 602 | 35,532 | 36,134 | 1,089 | 37,192 | 38,281 | 6 | 5,284 | 5,290 | 26 | 779,921 | 779,941 | 32 | 785,205 | 785,137 | 823,518 |
| EQUATEUR SUD | 19 | 103 | 122 | 40 | 1,118 | 1,158 | 59 | 1,221 | 1,280 | 0 | 1,068 | 1,068 | 0 | 71,847 | 71,847 | 0 | 72,915 | 72,915 | 74,195 |
| KINSHASA | 151 | 270 | 521 | 210 | 3,020 | 3,230 | 461 | 3,290 | 3,751 | 1 | 737 | 738 | 2 | 114,577 | 114,579 | 3 | 115,314 | 115,317 | 119,068 |
| PROVINCE ORIENTALE | 209 | 0 | 209 | 0 | 0 | 0 | 209 | 0 | 209 | 0 | 431 | 431 | 0 | 3,337 | 3,337 | 0 | 3,768 | 3,768 | 3,977 |
| TOTALS | 3,826 | 9,326 | 13,152 | 3,107 | 67,806 | 70,913 | 6,933 | 77,132 | 84,065 | 143 | 60,864 | 60,864 | 86 | 971,820 | 1,971,906 | 229 | 2,032,541 | 2,032,770 | 2,116,835 |
| PERCENTAGE (%) | 29.09 | 70.91 | | 4.38 | 95.62 | | 8.25 | 91.75 | | 0.23 | 99.77 | | 0.00 | 100.00 | | 0.01 | 99.99 | | |

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Legend: Tryp + = presence of anti-trypanosome antibodies; Tryp - = absence of anti-trypanosome antibodies; Ggl = ganglia; CATT = card agglutination test trypanosome

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S 12: Distribution by endemic area of new cases detected according to the diagnostic method in the DRC in 2003

| Diagnosis mode | GP | FB | TD | TBC | CSF | CLIN | OTHERS WOO + DC LC | TOTAL |
|--------------------|-------|-------|-------|------|------|------|--------------------|--------|
| Endemic areas | | | | | | | | |
| BAS-CONGO | 276 | 26 | 176 | 0 | 44 | 0 | 0 | 522 |
| BANDUNDU | 2,679 | 1,455 | 570 | 519 | 21 | 0 | 140 | 5,384 |
| MANIEMA/KATANGA | 240 | 63 | 363 | 65 | 0 | 1 | 0 | 732 |
| KASAI | 1,317 | 38 | 811 | 0 | 393 | 18 | 29 | 2,606 |
| EQUATEUR NORD | 586 | 94 | 647 | 0 | 208 | 55 | 7 | 1,595 |
| EQUATEUR SUD | 36 | 7 | 46 | 0 | 14 | 0 | 0 | 103 |
| KINSHASA | 114 | 13 | 65 | 5 | 43 | 0 | 46 | 286 |
| PROVINCE ORIENTALE | 125 | 3 | 100 | 0 | 21 | 0 | 2 | 251 |
| TOTALS | 5,373 | 1,699 | 2,778 | 589 | 744 | 74 | 224 | 11,881 |
| DETECTION RATE | 46.80 | 14.80 | 24.20 | 5.13 | 6.48 | 0.64 | 1.95 | |

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Legend: GP = ganglionic puncture; FB = fresh blood; TD = thick drop; TBC = triple blood centrifugation; CSF = cerebrospinal fluid

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552 **S 13: distribution by endemic area of patients treated according to the therapeutic regime**
 553 **in 2003**

| Drugs | P E N T | B A Y E R 2 0 5 | P E N T + B A Y | ARSOBAL | | | | DFMO | | | | LAMPIT | | | | OTHERS (ARS+LAMPIT) | | | | TOTAL | | | |
|-----------------------|-------------------|--------------------------------------|--------------------------------------|-------------------|---------|--------|-------------------|--------|---------|--------|-------------|--------|---------|--------|-------------|------------------------|---------|---------|-------------|-------------------|---------------|--------|--------|
| | | | | N C | A C | R T | T O T | N C | A C | R T | T O T | N C | A C | R T | T O T | N C | A C | R T | T O T | N C | A C | B T | |
| BAS-CONGO | 2 0 8 | 1 7 | 1 | 2 8 2 | 3 | 1 3 | 2 9 8 | 5 | 9 | 5 | 19 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 1 3 | 1 2 | 1 8 |
| BANDUNDU | 1, 8 4 3 | 4 5 6 | 3 | 2, 9 1 4 | 12 | 6 | 2, 9 3 2 | 4 | 5 | 5 | 14 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 6 | 5, 2 2 0 | 17 | NA | |
| MANIEMA/KATAN GA | 3 30 | 0 | 0 | 34 4 | 55 | 1 | 40 0 | 0 | 28 | 0 | 28 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 67 4 | 83 | 1 | |
| KASAI | 71 4 | 3 | 0 | 1, 68 5 | 28 | 35 | 1, 74 8 | 0 | 17 8 | 4 | 18 2 | 0 | 0 | 0 | 0 | 0 | 18 6 | 80 | 26 6 | 2, 40 2 | 39 2 | NA | |
| EQUATEUR NORD | 14 8 | 12 8 | 0 | 1, 30 8 | 18 6 | 20 | 1, 51 4 | 0 | 14 0 | 4 | 14 4 | 6 | 25 3 | 4 | 26 3 | 2 | 23 7 | 22 | 26 1 | 1, 59 2 | 81 6 | NA | |
| EQUATEUR SUD | 30 | 0 | 0 | 71 | 3 | 1 | 75 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 4 | 1 | 5 | 10 1 | NA | | |
| KINSHASA | 12 4 | 0 | 0 | 33 5 | 9 | 6 | 35 0 | 10 | 23 | 5 | 38 | 0 | 0 | 0 | 0 | 16 | 0 | 0 | 0 | 48 5 | 32 | NA | |
| PROVINCE ORIENTALE | 80 | 0 | 0 | 15 5 | 0 | 0 | 15 5 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 23 6 | 0 | NA | |
| TOTALS | 3, 47 7 | 60 4 | 4 | 7, 09 4 | 29 6 | 82 | 7, 47 2 | 20 | 38 4 | 23 | 42 7 | 6 | 25 3 | 4 | 26 3 | 18 | 42 7 | 10 9 | 53 8 | 11, 22 3 | 1, 36 0 | NA | |
| PERCENTAGE | 27. 16 | 4. 72 | 0. 03 | 55. 42 | | | 58 .37 | | | | 3. 34 | | | | 2. 05 | | | | 4. 20 | | | | |

554 Legend: PENT = pentamidine; DFMO = Difluoromethylornithine; ARS = Arsobal; BT=Back to Treatment; NA=Not
 555 Available or missing data

Trypanosomiasis Control, Democratic Republic of the Congo, Suddenly Breaking International aid

556 **S 14: Evolution of HAT in the last eight years in the DRC; PTE / NC ratio and monthly**
557 **average of NC by year**

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| YEAR | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 |
|----------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| DATA COLLECTED | | | | | | | | |
| TPT | 1,297,778 | 1,168,404 | 1,472,674 | 1,298,933 | 1,605,816 | 2,028,238 | 1,973,885 | 2,400,673 |
| NC | 19,485 | 25,094 | 26,318 | 18,684 | 16,975 | 17,322 | 13,553 | 11,481 |
| IR | 1.50 | 2.15 | 1.79 | 1.44 | 1.06 | 0.85 | 0.69 | 0.48 |
| MANC | 1,624 | 2,091 | 2,193 | 1,557 | 1,415 | 1,444 | 1,129 | 957 |

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560 **Legend: TPT = Total Population Tested; NC = New Case; IR= Infection Rate; MANC= Monthly**
561 **average New cases**

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S15: The lumbar punctures of diagnosis and control carried out in 2003

| LP Endemics areas | NC 2001 | NC 2002 | NC 2003 | Prevision LPC 2003 | 2003 | | | |
|--------------------------|------------|---------|---------|-----------------------|--------|--------|--------|-------|
| | | | | | TLPNC | TLPC | TLPNC | TLPAC |
| BAS-CONGO | 736 | 760 | 522 | 2,018 | 520 | 746 | 685 | 61 |
| BANDUNDU | 7,190 | 6,277 | 5,384 | 18,851 | 5,299 | 5,289 | 5,232 | 57 |
| MANIEMA/KATANGA | 711 | 290 | 732 | 1,733 | 705 | 628 | 490 | 138 |
| KASAI | 2,905 | 3,171 | 2,606 | 8,684 | 3,070 | 3,854 | 1,697 | 2,157 |
| EQUATEUR NORD | 4,990 | 2,436 | 1,597 | 9,023 | 1,574 | 11,651 | 8,178 | 3,473 |
| EQUATEUR SUD | 106 | 158 | 103 | 367 | 118 | 565 | 173 | 392 |
| KINSHASA | 681 | 459 | 286 | 1426 | 431 | 631 | 531 | 100 |
| PROVINCE ORIENTALE | NA | NA | 251 | 251 | 78 | 0 | 0 | 0 |
| TOTALS | 17,319 | 13,553 | 11,481 | 42,353 | 11,795 | 23,364 | 16,986 | 6,378 |

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Legend: LP = lumbar puncture; NC = new case; PLC LPC= lumbar puncture control; TLPC = Total Lumbar Puncture Control; TLPNC = total lumbar puncture normal control; TLPAC= total lumbar puncture of abnormal control, NA=Not Available

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