



INTERNATIONAL CONGRESS

Surgery access in tropical areas
and Updates in Oncology



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MYIASIS IN FRENCH GUYANA TREATMENT AND PREVENTION

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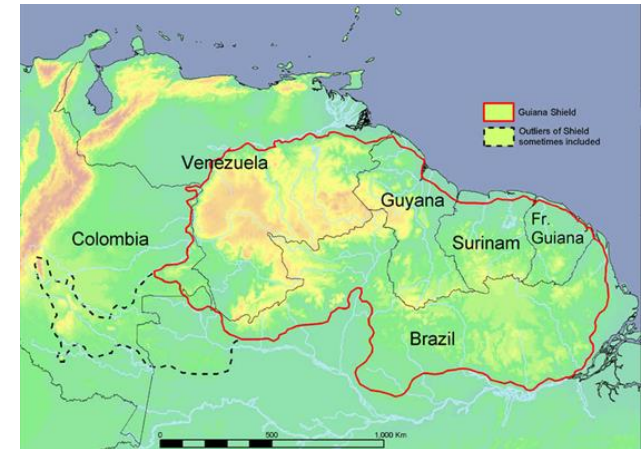
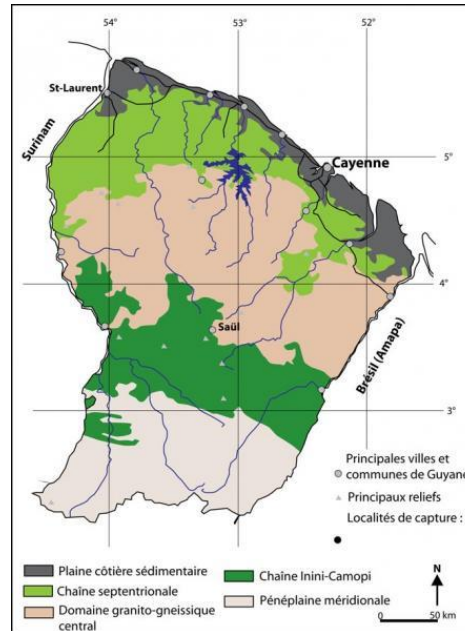
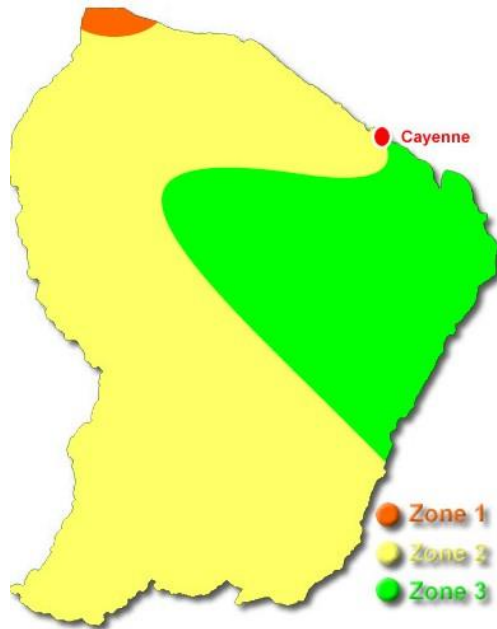
OBJECTIVES

- **Diagnose myiasis more easily in isolated health centers in French Guiana**
- **Improve the treatment of various myiasis, especially in children**
- **Respect hygiene advice and adapted prevention to the inhabitants with a humid forest biotope**
- **Emphasize the importance of tetanus vaccination in tropical regions**
- **Identify the socio-environmental problems favoring myiasis**
- **Improve prevention**

PRESENTATION PLAN

- **Introduction**
 - *Geographical and ecological situation*
 - *History of French Guyana*
 - *Structure of the population of French Guiana*
 - *Guyanese health system*
 - *Main human myiasis*
- **Material and methods**
- **Clinical case (1)**
- **Clinical case (2)**
- **Results and discussion**
- **Prevention**

GEOGRAPHY AND ECOLOGY



Guianese Shield

Zone 1 : 1700 - 2200 l/m² rain / year

Zone 2 : 2200 - 3500 l/m² rain / year

Zone 3 : 3500 - 5000 l/m² rain / year

Rainy season: mid-December - end of June

Dry season: July - December.

50% humidity, August to November: ++ dry

Temperature: on average 27 ° C

Area:

84,000 km²

Official population:

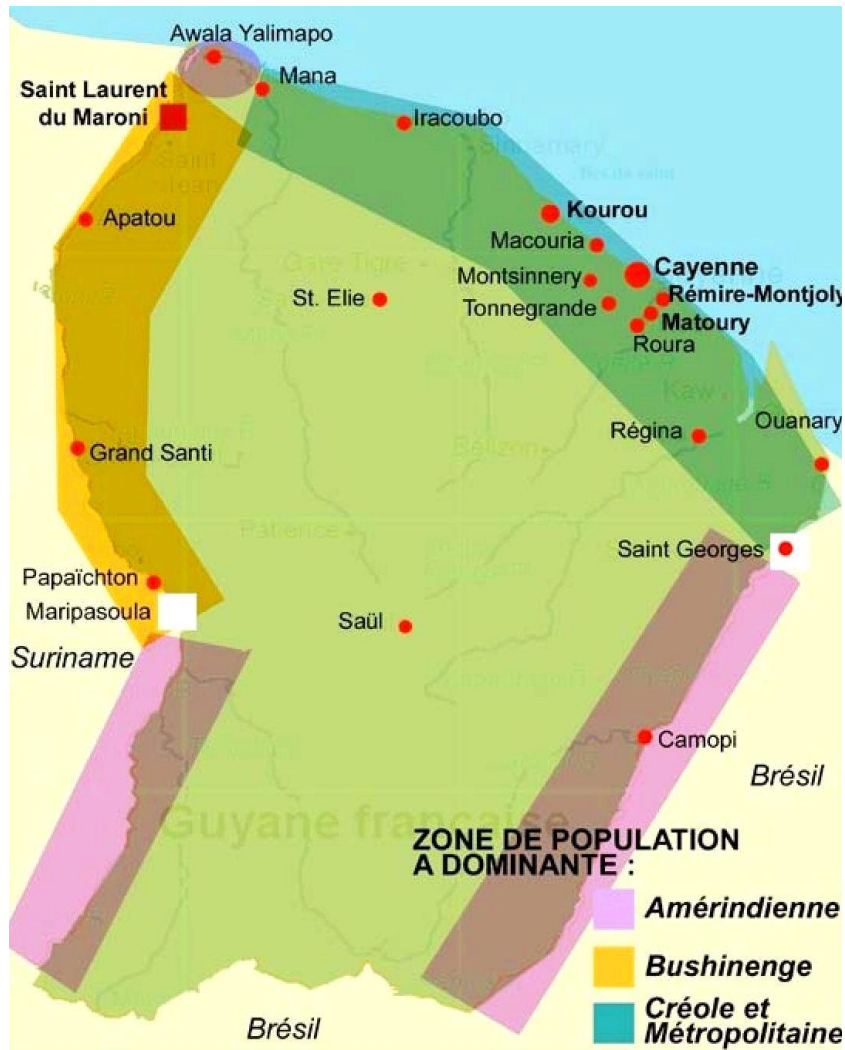
in 2017: 286,000

Forests: cover nearly 8 million *ha* (about 96% of the territory)

HISTORY OF FRENCH GUYANA

- **Around 6000 BC, first traces of American Indians tribes**
- **The coast of French Guyana is recognized by Christopher Columbus in 1498**
- **In 1638, Cardinal Richelieu colonized the territories of Guyana**
- **In 1643, Bretigny introduces slavery**
- **From 1854, with the law of the transport, Napoleon II makes build the famous prisons of Cayenne**
- **In 1946, Guyana becomes French department**

STRUCTURE OF THE POPULATION OF FENCH GUYANA



Population distribution

American Indians, six ethnic groups:

- Kalinas (Saint-Laurent du Maroni, on the coast);
- Lokonos (Saint-Laurent du Maroni, on the coast);
- Palikurs (Saint-Georges of Oyapock, on the coast);
- Emerillons, Wayanas and Wayampis (south of Guyana).

Blacks-Browns:

- Creoles (descendants of black Guianese, West Indies, Surinamese, Haitian slaves)

French of metropolis

Hmongs, Brazilians, Chinese, Lebanese, etc.

GUYANAIS SANITARY SYSTEM



There are three hospitals:

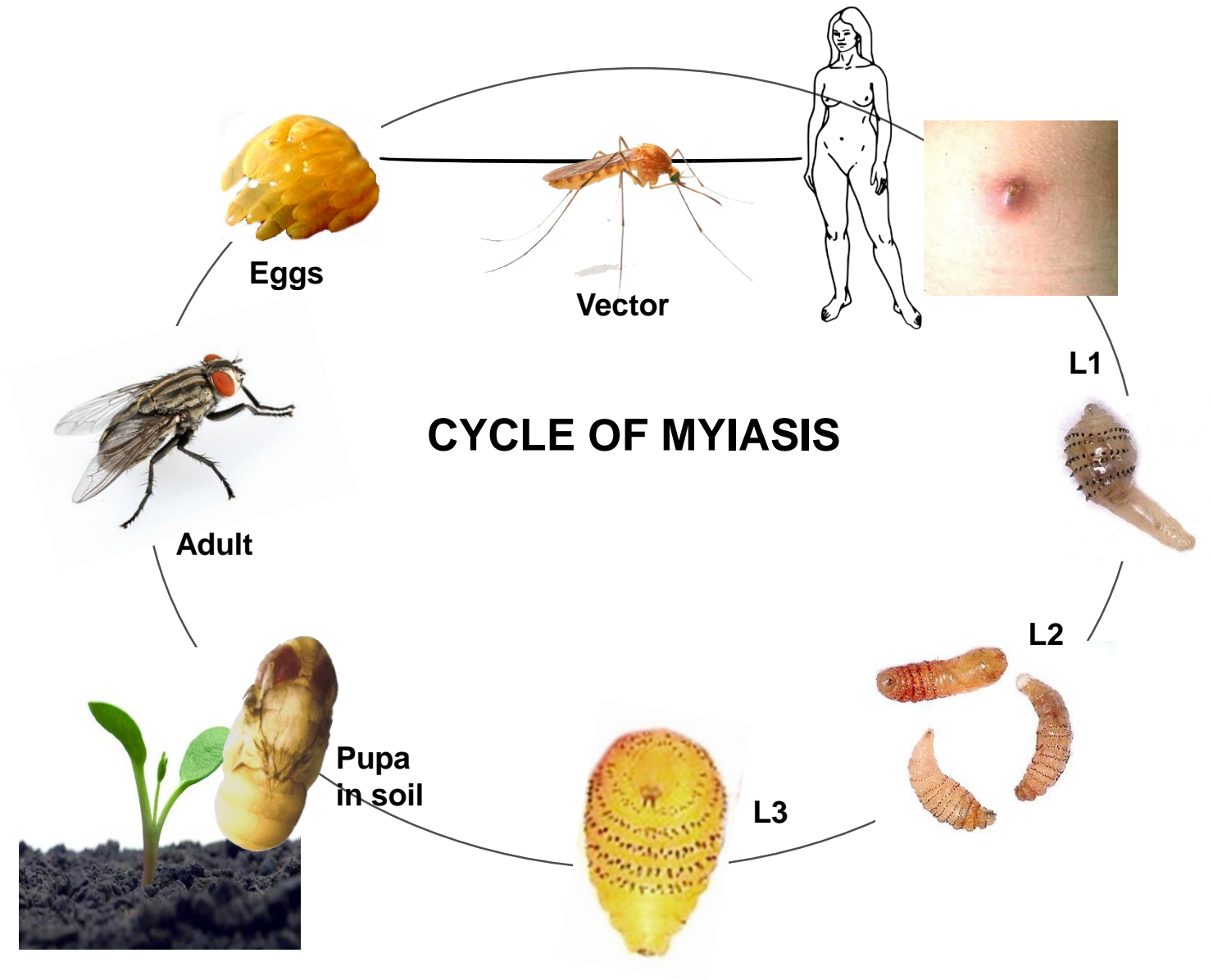
1 - Kourou Medical and Surgical Center

2 - Cayenne Andrée Rosemon Hospital Center

3 - West Guiana Hospital Center (Saint Laurent du Maroni)

The medical presence is permanent in 12 health centers and in 6 health posts, there is only a nurse.

MYIASIS: PARASITISM OF THE FLY INSTAR LARVAE



MAJOR HUMAN MYIASIS

Distribution		Species	Type of myiasis
Cosmopolitan		<i>Eristalis tenax</i> <i>Fannia</i> spp.	Rectal and intestinal
		<i>Lucilia</i> spp. <i>Calliphora</i> spp. <i>Musca</i> spp.	Wounds and cavities: vaginal, auricular,.....
European		<i>Wohlfahrtia magnifica</i>	Wounds
		<i>Hypoderma bovis</i>	Furunculoid Intraocular and visceral
		<i>Oestrus ovis</i>	Conjunctival, nasal
		<i>Gasterophilus</i> spp.	Creeping subcutaneous
tropical	Africa	<i>Oestrus</i> spp. <i>Rhinoestrus</i> spp.	Nasal, sinus, conjunctival
		<i>Auchemeromyia senegalensis</i>	Epicutaneous
		<i>Cordylobia anthropophage</i>	Furunculoid
	America	<i>Dermatobia hominis</i>	Furunculoid
		<i>Cochliomyia hominivorax</i>	Wounds

MATERIAL AND METHODS

- Retrospective, descriptive, multicenter survey: observations and examinations of patients from 12 health centers and 6 posts**
- Quantitative descriptive analysis: clinical, paraclinical, evolutionary aspects**
- Approaches and observations: social and cultural anthropology for a descriptive analysis**
- Entomological investigations,**
- Environmental and ecological survey**
- Analysis of observed elements for prevention**

Inclusion criteria: Patient with myiasis 2010-2016

Exclusion criteria: Misdiagnosis

CLINICAL CASE (1a)

12 year old girl

Origin: Trois Sauts village, South Guyana

Consult for:

Headache, her mother indicates that her daughter has trouble sleeping.

Medical history:

Dog bite in his left foot a month ago that became severely infected and required antibiotic and analgesic treatment.

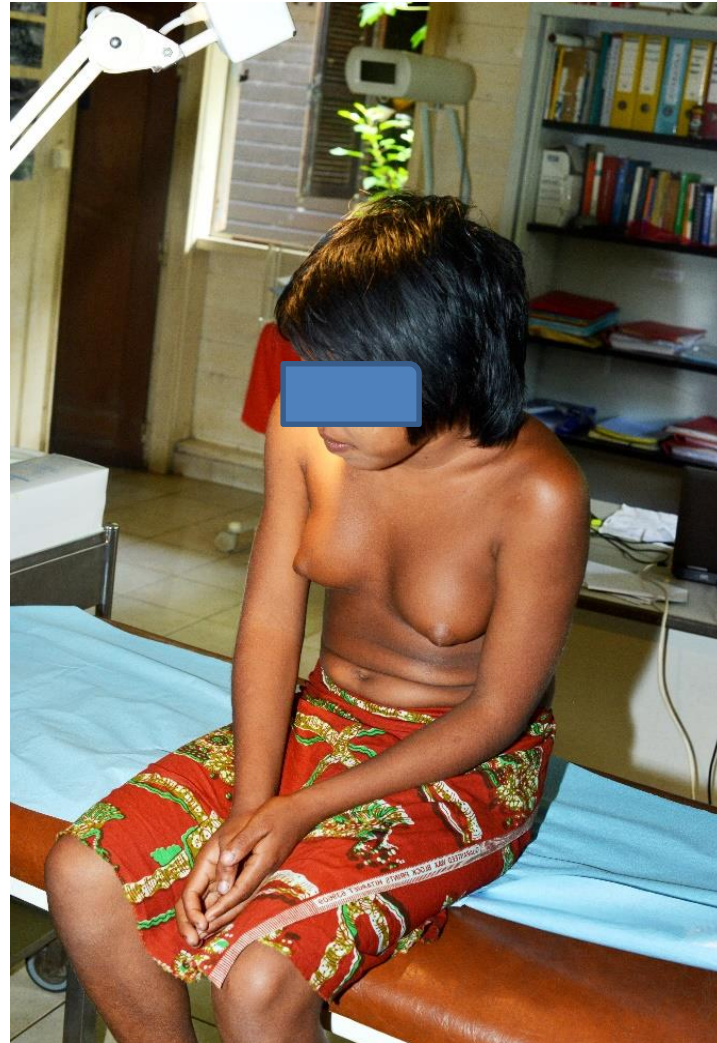
Physical examination:

No fever or deterioration of the general condition. Vaccinations up to date. Injured healed foot. Strong and unbearable odor emanating from the scalp. Local examination reveals lesions and impetigo.

CLINICAL CASE (1b)



Dog bite in the left foot one month before the new consultation

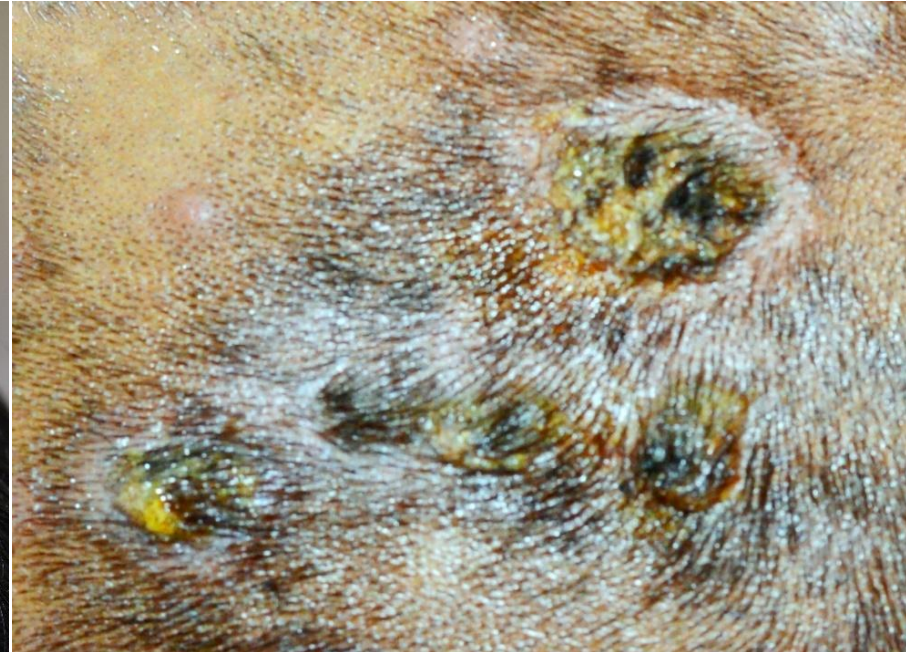


New consultation

CLINICAL CASE (1c)



Scalp wounds



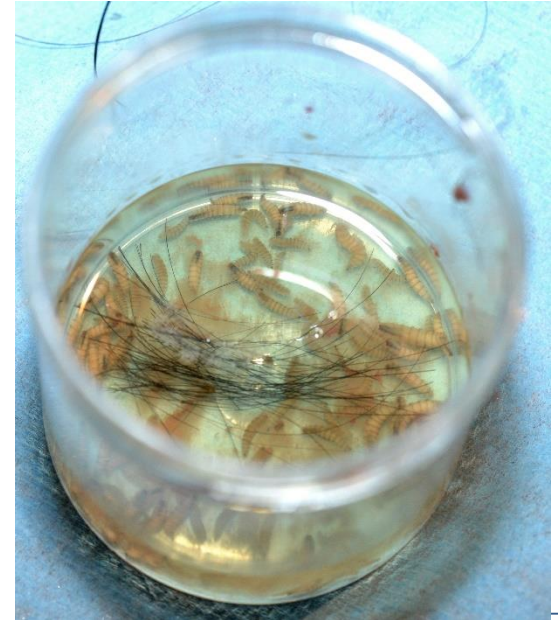
Scalp ringworm

Usually the family uses traditional medicine!

CLINICAL CASE (1d)



Scalp wounds after extraction of larvae



More than 50 larvae



CLINICAL CASE (1e)



Posterior stigmata



Oral hooks

Diagnosis : Myiasis of wounds

**Identification of larvae: *Lucilia bouchère* / *Cochliomyia hominivorax*
(Coquerel, 1858)**

TREATMENT: CLINICAL CASE (1)

Treatment:

Larvae extraction

Antibiotic ex.: Augmentin: 1g x 3 / d or

Pristinamycin: 1g x 3 / d / 7d

Tetanus vaccine

Analgesic

Hospitalization for a week until wounds are
improved

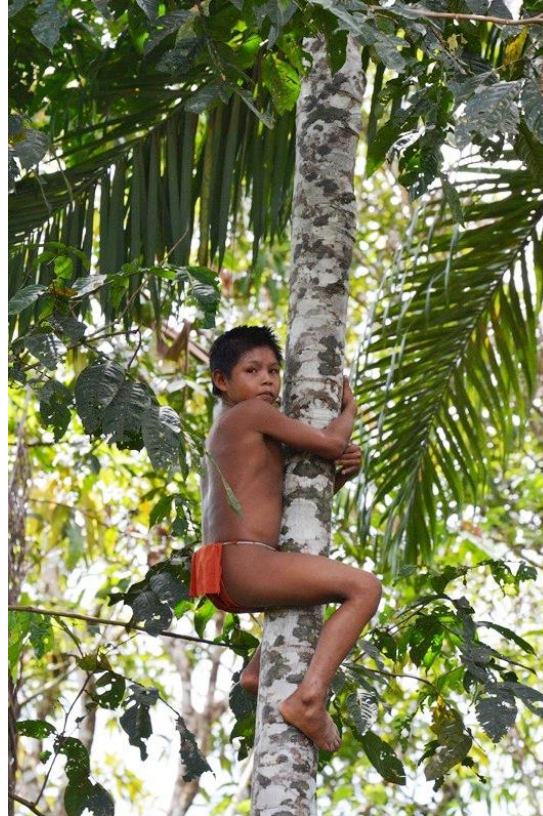
Parent education and patient assessment one
month later.

PROBLEM: ENVIRONMENTAL AND SOCIAL FACTORS (1)



Parents are very busy with daily and traditional tasks: hunting, crops, cassava processing (food and alcohol)

PROBLEM: ENVIRONMENTAL AND SOCIAL FACTORS (2)



Environment favoring pathologies: bodies of children in direct contact with vectors and flies.



**In a humid forest biotope: wound
without protection = danger!**

CLINICAL CASE (2a)

6 years old boy

Origin: Apatou, city of west Guyana

Consult for:

Itching and lesions.

Medical history:

Chickenpox 16 days ago.

Physical examination:

No fever or deterioration of the general condition. Vaccinations up to date.

Many vesicles of infected chickenpox.

Two furunculoids lesions: one on the right flank and the other on the right gluteal muscle.



CLINICAL CASE (2b)

Diagnosis:

Myiasis of the furunculoid type

Identification of the larvae: *Dermatobia hominis* (Linnaeus, 1781)

Treatment:

Larvae extraction

Antibiotic

Tetanus vaccine



Hospitalization for a week until wounds improvement

Parent education and patient assessment one month later.

RESULTS AND DISCUSSION

- **On average: 65 cases per year identified from 12 health centers and 6 health posts between 2010-2016**
- **Sex ratio (H / F): 2**
- **Age: 40% between 5-12 years**
- **Wounds, impetigos, scalp ringworms, untreated and unprotected promote myiasis**
- **Important role of lifestyle, profession, personal hygiene and the environment**

PREVENTION

- Treatment of skin conditions
- Education and information of the inhabitants,
- Individual hygiene and body monitoring
- Environmental hygiene
- Decrease in the height of the vegetations
- Soaking sheets and clothes in boiling water before using them
- Very hot ironing of tissues that will be in contact with the body
- Wound protection: mosquito nets
- Traps against adult flies



Decrease in the height of the vegetations

**Vaccination
against tetanus
saves lives in the
tropics!**

THANK YOU FOR YOUR ATTENTION

End of the
presentation

