Lessons from The Tunisian Experience to control Rheumatic Fever / Rheumatic Heart Disease

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Monastir, Tunisia
Rheumatic Heart Disease:

Sub-saharan Africa (SSA)
South Pacific
South and Central Asia
Pockets of Poverty in South America and East Asia
Tunisia - Population density

Source: IN8 1994
Cartography: A Belbedi 2007
Tunisia
The smallest North African country 165 000 km²

---|---
Population | 6.3 millions | 6.3 millions
Life expectancy | 62.2 years | 62.2 years
GDP per capita | 1,369.53 USD | 1,369.53 USD
Tunisia Experience on RHD

Why a National Program to control RF/ RHD?

- High Prevalence of RHD among school children
  - 6.6% in urban areas and 3.9% in rural areas
- 50 to 67% of poor school performance among school children
- 10% quitting school at early age

- 1980: 25 to 50% of cardiology beds were occupied by RF/ RHD patients
Tunisia Experience on RHD

Why a National Program to control RF/ RHD?

- In 1981:
  - 50 mitral commissurotomies
  - 150 surgical valve replacements: most of them performed abroad
  - Cost: 500 to 9000 TND (263 to 4736 US dollars)
  - Cost of Benzathin Penicillin: 0.268 TND (0.14 US dollars)
Tunisia Experience on RHD

Why a National Program to control RF/ RHD?

Collecting Data on Local burden ARF/RHD

Sensitization of politicians

Political Decision

National Program

Supervision by the government/ Ministry of health

Support of other stakeholders: WH, WHF...
ARF/RHD Prevention Tunisian National Program

Two important dates:

1978: ARF Notifiable Disease (required by law to be reported to gov authorities)

1980: Standardisation of the treatment of sore throats (one single injection Penicillin G- Benzathin Penicillin+++)
ARF/RHD Prevention Tunisian National Program

Launched in 1978

Objectives:
- Early screening and treatment of sore throats in children
- Early screening and treatment of ARF
- Early screening of RHD and referral to specialized centers
ARF/RHD Prevention Tunisian National Program

Primary Prevention: Penicillin for sore throats

Secondary Prevention: +++
- Booklet for physicians
- Booklet for patients
- Register for the nurse: +++
Tunisia
- Vous êtes le premier responsable de votre maladie.

- Evitez de prendre les médicaments sans prescription médicale.

- Consultez rapidement votre médecin traitant en cas de maux de gorge ou d'infections bucco-dentaires.

- Suivez les conseils de votre médecin traitant et appliquez soigneusement les prescriptions médicales.

- Observez correctement votre traitement prophylactique (Extencilline ou autre...) et ne l'arrêtez jamais sans avis médical.

- Consultez votre médecin traitant pour le contrôle médical selon les rendez-vous préalablement fixés.

- Soyez vigilants quant à l'hygiène du milieu et à l'hygiène de votre vie.
Impact on the incidence of ARF
The Tunisian Experience

ARF Incidence per 100000 inhabitants

<table>
<thead>
<tr>
<th>Year</th>
<th>Incidence per 100000</th>
<th>Cases</th>
</tr>
</thead>
<tbody>
<tr>
<td>1985</td>
<td>8.7</td>
<td></td>
</tr>
<tr>
<td>1995</td>
<td>3.4</td>
<td></td>
</tr>
<tr>
<td>1998</td>
<td>4.7</td>
<td></td>
</tr>
<tr>
<td>1999</td>
<td>4.1</td>
<td>172</td>
</tr>
<tr>
<td>2000</td>
<td>1.7</td>
<td></td>
</tr>
<tr>
<td>2001</td>
<td>1.5</td>
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</table>

The Tunisian Experience

ARF Incidence per 100000 inhabitants

- 2002: 1.3
- 2003: 0.7
- 2004: 0.8
- 2005: 0.9
- 2006: 1.7
- 2007: 1.0
The Tunisian Experience

ARF Incidence per 100000 inhabitants

<table>
<thead>
<tr>
<th>Year</th>
<th>Incidence</th>
<th>Cases</th>
</tr>
</thead>
<tbody>
<tr>
<td>2009</td>
<td>0.47</td>
<td>7</td>
</tr>
<tr>
<td>2010</td>
<td>0.22</td>
<td></td>
</tr>
<tr>
<td>2011</td>
<td>0.06</td>
<td></td>
</tr>
<tr>
<td>2012</td>
<td>0.16</td>
<td></td>
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<tr>
<td>2013</td>
<td>0.08</td>
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REDUCING THE INCIDENCE OF RHEUMATIC FEVER WITH PENICILLIN

Fig. 76.15. Rheumatic fever: changed and unchanging. Curve A is typical of industrialized countries: curves B1 and B2 represent the changed pattern in some developing countries, while the unchanged B3 represents the pattern in many African countries. (From Strasser, 1978.)
What made the success of the Tunisian experience?
What made the success of the Tunisian experience?

- Initial data set showing the burden of ARF/RHD in Tunisia
- Mobilisation of the government to launch a National Program
- Not only to launch it but also to monitor it with a continuous evaluation
- The component of the national program:
  - Education of Primary care physicians: They were the focus throughout the country: Urban and rural areas
  - Education of other health care professionals (nurses…)
  - Education of patients and their families
  - Education of the population in general
And what else?

Support of funding and prevention organisations: WHO, WHF, ++

And Last but not Least: Global development
Tunisia – Urbanisation rate

Urbanisation rate in 2004
- [17; 23[
- [23; 34[
- [34; 45[
- [45; 67[
- [67; 79[
- [79; 100[

City size:
- 1866776
- 933388
- 466694

Elaboration: A. Belhedi
Source: INS 2004
## Tunisia

The smallest North African country 165,000 km²

<table>
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<tr>
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<tbody>
<tr>
<td>Population</td>
<td>6.3 millions</td>
<td>10.98 millions</td>
</tr>
<tr>
<td>Life expectancy</td>
<td>62.2 years</td>
<td>75.68 years</td>
</tr>
<tr>
<td>GDP per capita</td>
<td>1,369.53 USD</td>
<td>9,900.00 USD</td>
</tr>
</tbody>
</table>
What are the threats?
What are the threats?

• Over confidence

• And subsequent loss of enthusiasm in keeping on with the program

• Under reporting of the ARF/RHD (sporadic cases in rural areas)

• Political changes: a revolution is no good for such programs: the frequent change of the minister of health..
**Country Members**

<table>
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<tr>
<th>Country</th>
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<tbody>
<tr>
<td>Cameroon</td>
<td>Seychelles</td>
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<td>Zambia</td>
<td>Rwanda</td>
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<td>Ghana</td>
<td>South Africa</td>
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<td>Kenya</td>
<td>Sudan</td>
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<td>Mozambique</td>
<td>Tunisia</td>
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<td>Nigeria</td>
<td>Uganda</td>
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<td>Tanzania</td>
<td>Zambia</td>
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<tr>
<td>Ethiopia</td>
<td>Mauritius</td>
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<tr>
<td>Zimbabwe</td>
<td>Cote d’Ivoire</td>
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</table>
Mission

To play a leading role to promote and improve CVD-related public health and health systems policies in support of the UN/WHF NCD global action plan
Awareness Building

I. World Heart Day

II. Go Red For Women

III. Children’s Programme - South Africa

IV. CVD health Promotion Schools Uganda, Ghana, Nigeria, Tunisia

V. Rheumatic Heart Disease: Kenya, Rwanda

VI. Healthy Diet
   - Heart Check Food Labeling Programme –Nigeria, South Africa
31 “Kenyan-Heart Talking Walls” in 31 Schools
Research Activity:
“Impacting RF/RHD In Rwandan School Children and Adolescents: Determination of Prevalence And Implementation of a Prevention Program in Gasabo District.”

Principal Investigator:
Joseph Mucumbitsi, MD; King Faisal Hospital, Kigali
Rwanda Heart Foundation

Co-Investigators
Cecilia Patton Bolman, MSN, Team Heart Inc., Boston, USA
Edward L. Kaplan, MD, Professor of Pediatrics, University of Minnesota, Minneapolis, USA
Emmanuel Rusingiza, MD, Kigali University Teaching Hospital, Kigali, Rwanda
Suellen Breakey, PhD, RN, Team Heart, Boston, USA
CONCLUSIONS

The Tunisian experience in combating RF/HD was positive and would be extendable to other African countries.

A national program launched, supervised and monitored by the government through the minister of health is key for the success of RHD eradication mission

In addition to government involvement, clinicians, researchers, civil societies, patient advocates, and funding agencies (WHO, WHF, AU..) have a key role to play to achieve success.
End RHD in Africa