Economic crisis and communicable diseases in Greece

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Structure of presentation

• Introduction
  • The present economic crisis
  • What we know on the effect of economic crises on infectious disease epidemiology
• The impact of the economic crisis on infectious diseases in Greece
  • Mortality from infectious diseases
  • Tuberculosis
  • West Nile virus infection
  • Malaria
  • HIV/AIDS
• Conclusions
Greece vs. Europe
GDP since the crisis, indexed to 2008. Source: OECD

Source: Bloomberg
Total unemployment rate, % of labour force, selected European countries, 2000–2014

Total long-term unemployment rate, % of unemployed, selected European countries, 2000–2013

The review identified 230 studies of which 37 met our inclusion criteria. Of these, 30 found evidence of worse infectious disease outcomes during recession, often resulting from higher rates of infectious contact under poorer living circumstances, worsened access to therapy, or poorer retention in treatment.
Suggested pathways through which economic crisis/recession can affect infectious disease epidemiology

Source: Shuhrcke M et al, PlosOne, June 2011.
The reappearance of ‘poverty diseases’ such as diphtheria and tuberculosis, almost eradicated before reform, is a matter of great concern.

Many of the countries in transition are facing a health crisis. Its scale can be seen in large numbers of avoidable deaths, the spread of diseases once thought to be under control, and the rise of new epidemics, including HIV/AIDS.
Standardized death rate, infectious and parasitic diseases, Greece, 1980–2013

Source of data: WIHO/Euro, I Health for all mortality database (MDD), Nov 2015
Standardized death rate, tuberculosis, four countries affected by economic crisis, 1980–2013

Evaluation of Tuberculosis Underreporting in Greece through Comparison with Anti-Tuberculosis Drug Consumption

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<table>
<thead>
<tr>
<th>Year</th>
<th>Estimated annual incidence rate, per 100,000 population (95% CI)</th>
<th>Estimated underreporting (95% CI)</th>
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</thead>
<tbody>
<tr>
<td>2004</td>
<td>33.5 (31.7–35.6)</td>
<td>79.7% (78.5%–80.9%)</td>
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<tr>
<td>2005</td>
<td>34.8 (32.9–36.9)</td>
<td>80.1% (79.0%–81.2%)</td>
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<tr>
<td>2006</td>
<td>29.1 (27.2–31.3)</td>
<td>80.4% (79.0%–81.8%)</td>
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<tr>
<td>2007</td>
<td>29.6 (28.1–31.4)</td>
<td>80.7% (79.7%–81.8%)</td>
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<tr>
<td>2008</td>
<td>29.8 (27.9–31.8)</td>
<td>80.3% (79.0%–81.6%)</td>
</tr>
<tr>
<td>Total</td>
<td>31.4 (30.5–32.2)</td>
<td>80.2% (79.7%–80.8%)</td>
</tr>
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TB-HIV co-infection, Greece, 2006–2012

MDR TB by previous treatment history, Greece, 2004–2012

Number of reported cases of West Nile neuroinvasive disease (WNND) and deaths from West Nile virus (WNV) infection, Greece, 2004–2015

Geographical distribution of reported cases of West Nile virus infection, Greece, 2012 (n=106)

Source: Hellenic Centre for Disease Prevention and Control
Number of reported cases of locally acquired malaria, Greece, 2004–2015

Geographical distribution of reported cases of locally acquired malaria, Greece, 2011 (n=42)

Source: Hellenic Centre for Disease Prevention and Control
Land use in municipality of Evrotas, Laconia

- Irrigation & drainage channels (105 km)
- Orange trees
- Other cultivations
- Coastal wetlands & lake under NATURA

Sea
Ecological situation in municipality of Evrotas, Lakonia

Evrotas river

Very poor housing (inside the orchards)

Irrigation channel near the orange plantations
Long lasting impregnated nets (LLINs)

Indoor residual spraying (IRS)
Active case finding
Number of reported cases of locally acquired malaria, Greece, 2004–2015

Incidence of HIV infection per 100,000 population by year of diagnosis, Greece, 1981–2013

Source: Hellenic Centre for Disease Control and Prevention, HIV/AIDS surveillance in Greece, data reported through 31/12/2013.
Cases of HIV infection reported by transmission group and year of report, Greece, 2009–2013

Source: Hellenic Centre for Disease Control and Prevention, HIV/AIDS surveillance in Greece, data reported through 31/12/2013.
Conclusions

• There is evidence that the economic crisis has probably increased the burden of infectious diseases in Greece.

• This effect is not dramatic (as observed in the former Eastern European countries in the 1990s).

• The effect varies by disease; there is not a single, “universal” pattern of impact of the economic crisis on the burden of disease.

• Need to take measures to minimize the effect of the crisis on people’s health, with special attention to people/families in poverty and/or high risk:
  – Public health
  – Access to health care
Thank you