

COMMITTEE ON INDUSTRY, RESEARCH AND ENERGY HEARING Horizon 2020.

**The Framework Programme for Research
and Innovation**

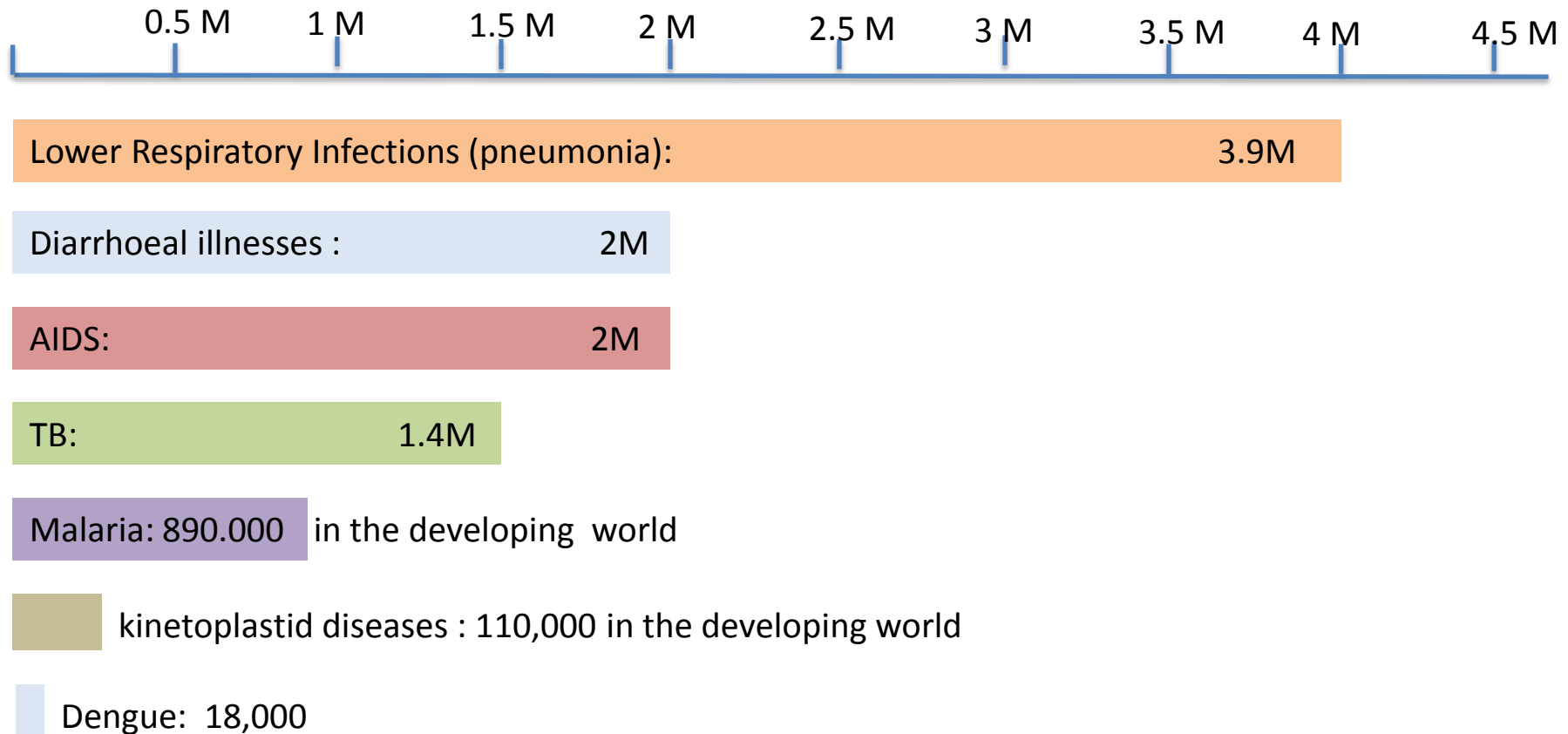
**Panel II: Societal challenges
Prof Robin Shattock, Imperial College**

1. Introduction:

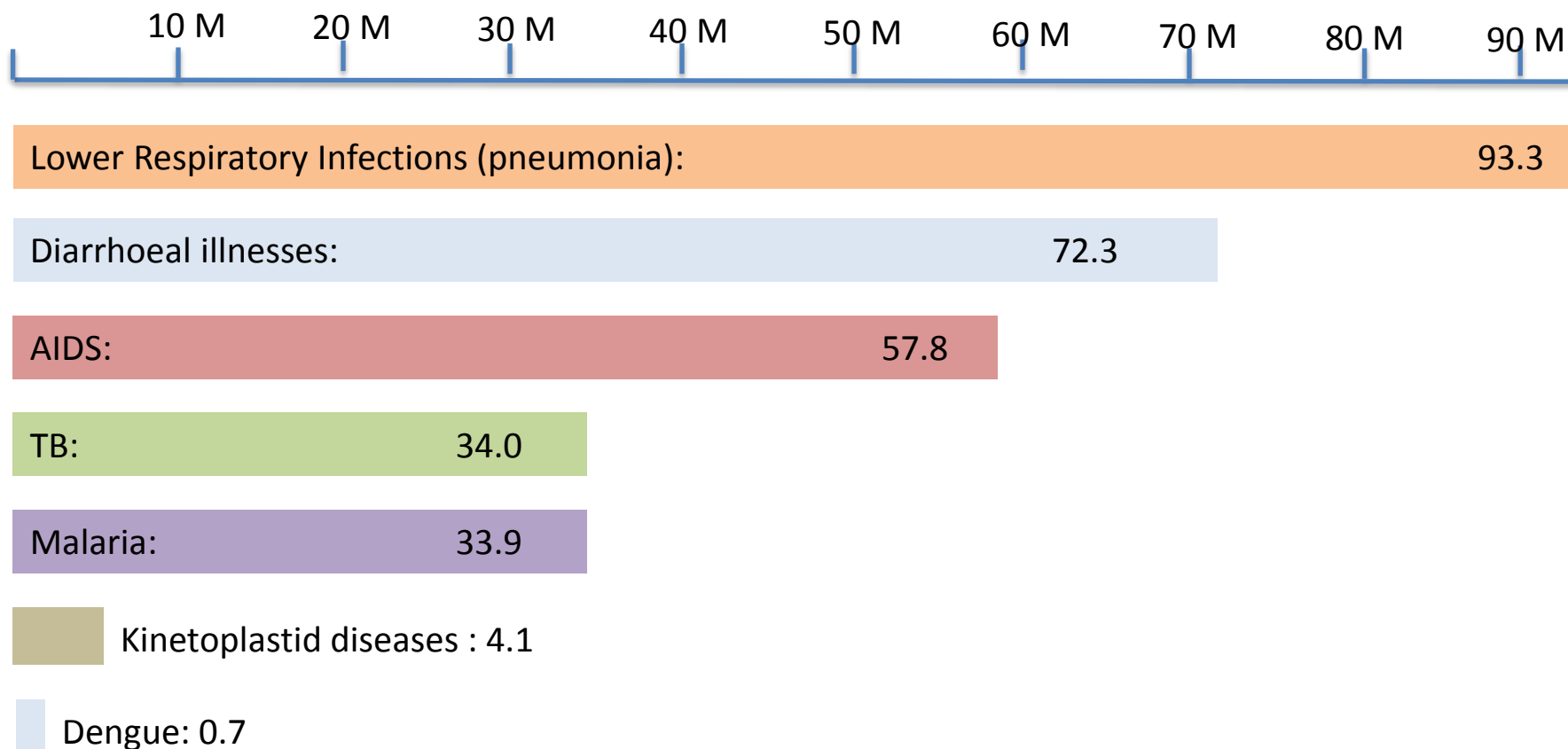
Global health as a societal challenge

- One of the biggest societal challenges today is finding health tools to combat diseases which effect the EU and also other continents.
- Communicable pandemics, non-communicable diseases and other major global health threats know no borders.
- Confronting global health problems requires close collaboration between a range of actors:
 - local authorities and multinational organisations
 - small research teams and international health institutions
 - national governments and European and global agencies.
- Global health issues not only threaten the lives of people who are directly affected, but also undermine national stability and regional and world economic growth.

Annual mortality per year in millions



Burden of Disease (DALYs)



DALY: disability-adjusted life year

AIDS and tuberculosis in Europe

- According to UNAIDS estimates, around **2.3 million people** were living with HIV in the **European region** at the end of 2010.
- The HIV epidemic is rapidly expanding in **Eastern Europe**. The number of people living with HIV in Eastern Europe has increased by 250% (410,000 in 2001 to **1.5 million** in 2010, according to UNAIDS).
- In 2011 **30% of people living with HIV** in the Eastern European region also **suffered from tuberculosis**, and died within 12 months after the HIV diagnosis
- In the European Region alone, **TB causes 49 new cases and kills 7 people every hour**. High mortality rate is also closely related to a growing number of cases of multi-drug resistant TB and a clear result of late presentation of HIV.

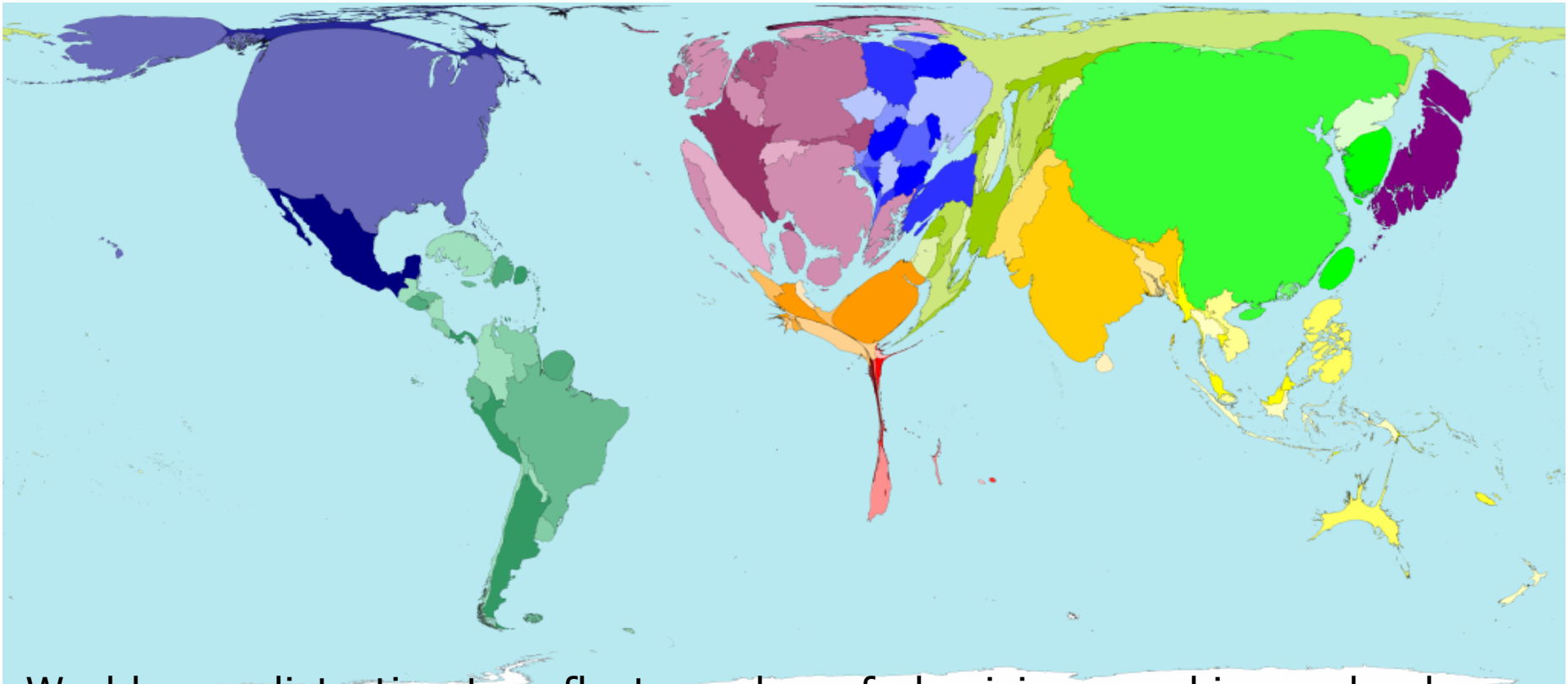
European health as a societal challenge

- European societies will **benefit from any research advances** made in the area, in terms of health benefits, in increasing the knowledge base, and ultimately also in terms of economic growth.
- **Health is wealth:** good health is essential for a healthy economy: the investment in the health of populations is an important determinant of economic growth and competitiveness.
- As EU citizens will have to work longer in the coming years, they need to be healthy to be able to **contribute to a competitive Europe.**
- **Less expensive ways** to produce medicines, drugs, vaccines, are needed - i.e. new global health tools in order to improve global health.
- **Improving health for Europeans** and globally will also imply positive effects on health systems, employment and global health security.

What have been the gaps so far for the research community so far?

- It has been estimated that less than 10% of health R&D is spent on diseases that affect 90% of the world's population.
- There is no ready, viable commercial market for products developed to effectively treat these diseases in countries where people and governments have limited financial resources.
- In absence of corrective incentive measures, high-risk aversion and low-return on investment prospects retract private sector engagement in this area of research.
- Public sector funding and policy-making are key to readdress this imbalance and to ensure the effective delivery and procurement of these public health goods.
- Substantial increase of funding from the EU into global health research is needed. Under FP7 the EC overall contribution to health R&D is 6.1 Billion EUR
- –but just 4% of that total was devoted to research into the three major global diseases of poverty, HIV, TB and Malaria

2. How should global health research be supported by the European institutions ?



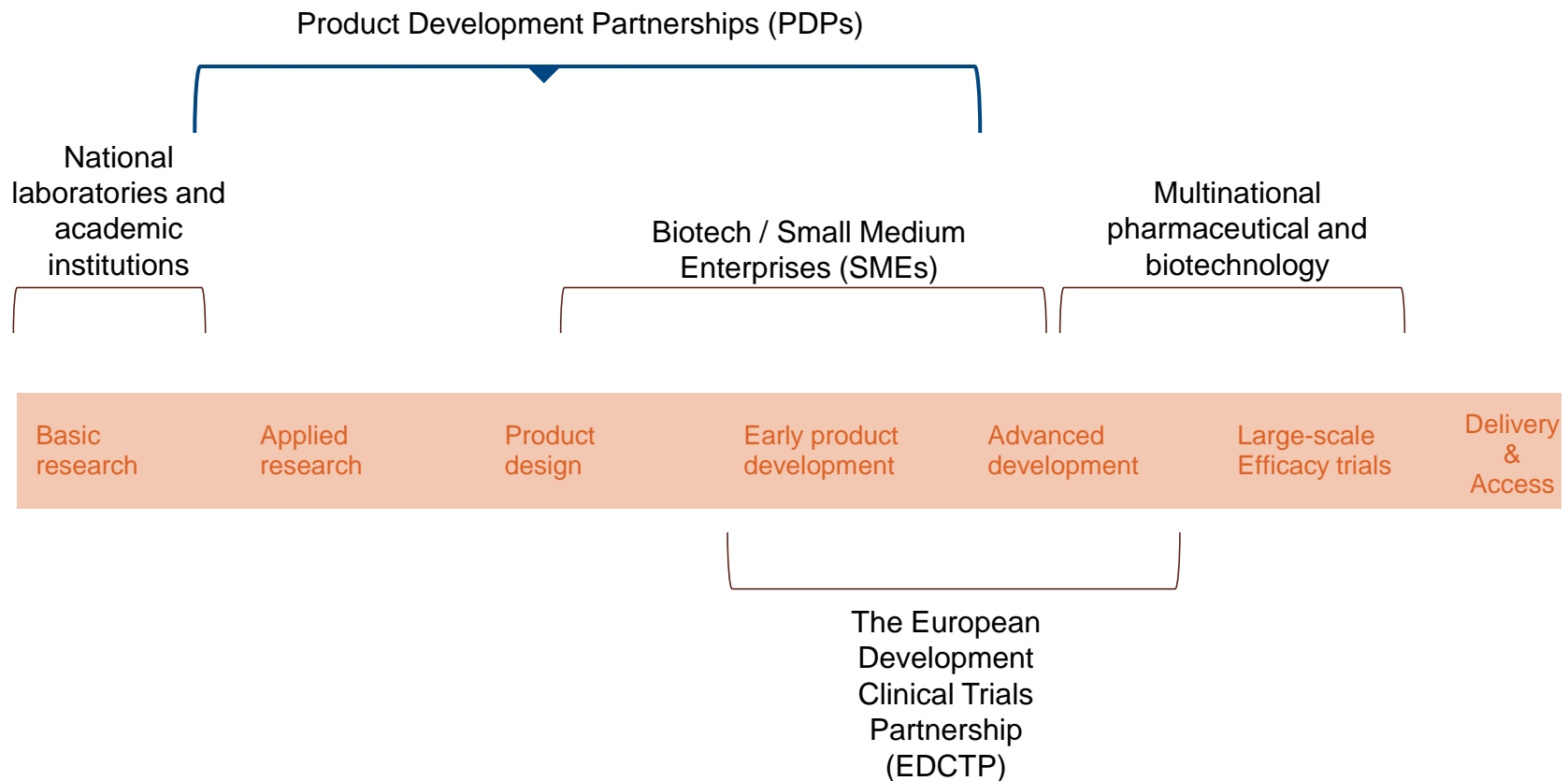
World map distortion to reflect number of physicians working as land area

www.worldmapper.org/

Europe: leading role in developing global health research and innovation

- The European Commission has adopted a communication “The EU’s role in global health” (2010) which is supported by Council conclusions (May 2010)
- Both highlight the importance and the need to coordinate more effectively research on global health, to address the highly fragmented research landscape, and to identify shared global priorities for health research
- Therefore there should be coherence between previous EU policy frameworks and external and internal policies in the EU development policy and research
- Europe has excellent research institutions in the area
- Responsibility for finding solutions to these global health problems resides in both the public and private sectors
- Collaboration with countries affected by the disease need to be involved in the research to define priorities and ensure access to the innovations

Harnessing the product development cycle for global health needs



The EU needs to drive the stimulation for cross-disciplinary and cross-sector research programmes

What can the EU Institutions do?

- **Funding is needed** to support efficient management and linkage of basic research, translational research, clinical trials, launch and implementation of a health product.
- This should be made available to institutions and organizations capable of **addressing the full innovation cycle** –including Product Development Partnerships that harness the contributions from both the public and private sectors.
- Funding mechanisms must be adapted to fast-evolving product pipelines, essential to product development ***-the portfolio approach.***
- This will require **Long-term, flexible and non-project based funding** for global health R&D that encompasses all phases of the product development, critical to ensure the accelerated development and equitable delivery of urgently needed public health goods.

Product Development Partnerships (PDPs): an important tool

PDPs and other innovative models for health research can enhance the European 2020 strategy by:

- Generating innovative partnership approaches
- Address lack of commercial incentive to undertake R&D for developing world products.
- Allow for greater risk taking than industry but also serve to shift risk from public donors, who must review broad portfolios of R&D activities
- Offering value for money to public sector donors
- Covering the full innovation cycle thus avoiding fragmentation
- Engaging with both public and private partners globally
- Strengthening scientific and technological capacities for the health sector in developing countries as well as in the developed world, including in Europe.

Over the last decade, PDPs have developed and licensed 12 health products for poverty and neglected diseases, and today have more than 150 biopharmaceutical, diagnostic and vector control candidates in development, including 32 in late-stage clinical trials.

What should the new framework programme Horizon 2020 also address?

- Horizon 2020 should be open to more innovative forms of collaboration, and bring together the whole range of partners (academic, SMEs, PDPs, industry) needed to bring about innovations for the most affected populations.
- This should encourage the best science in the best centers irrespective of geographical location. Decreasing the emphasis on investigator-led research consortia that link numerous institutions and countries.
- Greater emphasis should be given to a portfolio-based approach that constantly reprioritizes the most viable candidates for clinical testing in and with developing countries.
- Eligibility criteria and application process need to be simplified in order to attract the brightest brains and innovations coming from SMEs, PDPs, industry and academia.
- By engaging the best scientists to work with and in Europe, European competitiveness will be supported and promoted by means of strategic partnerships, to address specific global health problems.

3. Opportunities



The HIV prevention revolution

VACCINES

- AIDS vaccine shows first efficacy in clinical trials
- Replicating viral vector effective in controlling SIV in animal studies
- Multiple new antibodies and targets on HIV discovered

MICROBICIDES

- Microbicide gel (CAPRISA 004) reduces HIV infections in women

TREATMENT AS PREVENTION

- Initiating ART earlier reduces HIV transmission among discordant couples

PRE-EXPOSURE PROPHYLAXIS

- Oral PrEP reduces HIV infections among MSM and transgendered women

Potent HIV-Blocking Proteins Raise Hopes for Vaccine

Preexposure Chemoprophylaxis for HIV Prevention in Men Who Have Sex with Men

Grant, M.D., M.P.H., Javier R. Lama, M.D., M.P.H., ... McMahán, B.S., Albert Y. Liu, M.D., M.P.H.,

abc NEWS

Hope Found in First Vaccine to Stop HIV

By MICHAEL SMITH
Sept. 24, 2009

For the first time, an
For over 20 years, sc
from ... During

Experimental AIDS vaccine shows promise in monkeys

Wed, May 11 2011

By Julie Steenhuisen and Kate Kelland

(Reuters) - An experimental vaccine helped monkeys with a form of the AIDS virus control the infection ... to a vaccine for people, U.S. researchers said on Wednesday.

Vaccine first ever to help stop AIDS

By: Marilynn Marchione and Michael Casey

BANGKOK, Thailand -- For the first time, an experimental vaccine ... watershed event in the deadly ... might never ... The World ... field of HIV ... The vaccin ... ing and wil

Breakthrough HIV gel earns applause in forum

July 20 2010 at 11:05pm

By Richard Ingham

Vienna - The world Aids forum set aside rows about politi ... cheered South African scientists who announced a brea ... from ...

Antibody Kills 91% of HIV Strains

Thursday, July 8, 2010

Nan Garcia, Assistant Editor

Wall Street Journal today reported a new ... ment in the fight against HIV/AIDS - In a ... ant step toward an AIDS vaccine, U.S. government ... have discovered three powerful antibodies, the ... of which neutralizes 91% of HIV strains ... antibody yet dis

NewScientist

Discovery of HIV's weak spot boosts vaccine quest

The discovery of antibodies th ... has revived hopes that a pote

HIV drugs sharply cut risk of transmission, study finds

By David Brown, Published: May 12

AIDS researchers announced Thursday that a study conducted in nine countries has proved the long-standing hunch that HIV-infected people on treatment are much less likely to transmit the virus than people who aren't taking the drugs.

The study, which was stopped early because the results were so dramatic, found that men and women whose sexual partners were infected with the AIDS virus were almost completely protected if the partner took a combination of HIV-suppressing drugs.

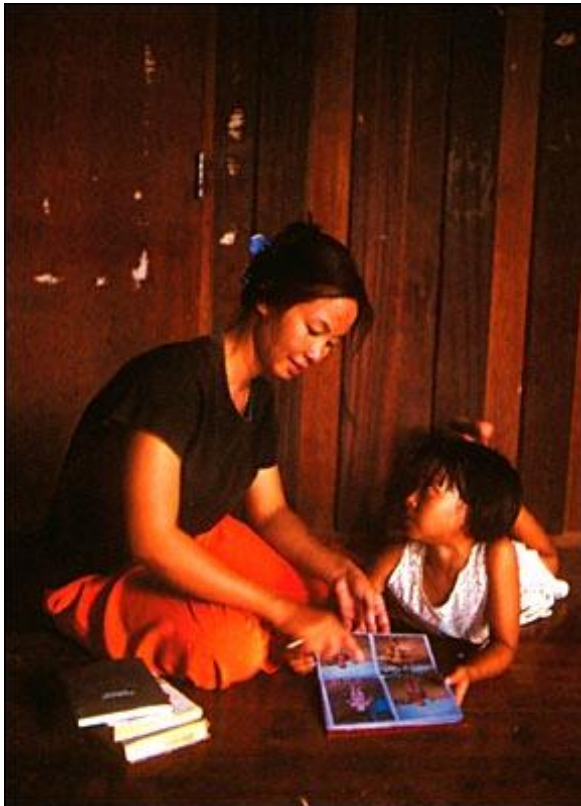
The European Development Clinical Trials Partnership (EDCTP)

- Its objective is to accelerate the development of new clinical interventions to fight HIV/AIDS, malaria and tuberculosis in developing countries.
- Involves the European Commission, 16 European countries, industry, private charities like the Gates Foundation, and 29 Sub-Saharan African countries, and also partners with PDPs.
- To build on this success, it should be open to the right mix of partners needed to cover the full translational research cycle and extended to allow for research in neglected diseases.
- EDCTP has a critical role in leveraging the best science for most pressing global health needs It is crucial that EDCTP is sufficiently funded under Horizon 2020 to harness the fruits of past achievements and to bring out its full potential.

4. Conclusions

- The EU, as a global player and funder, can and should play a key role in investing into R&D for new global health tools to address global health challenges.
- Global health issues not only threaten the lives of people who are directly affected, but also undermine national stability and regional and world economic growth.
- New global health products and approaches can dramatically reduce the disease burden and save lives but also stimulate economic growth in low and middle-income countries
- Which in the long run would mean reducing development aid money from European tax payers.
- Investing in global health research furthers the EU development goals, its EU research goals, and contributes to sustainable development.

Horizon 2020 represents a great opportunity to live up to these commitments. Not despite of the economic crisis, but because of the crisis: investing in global health research now will bring about tangible return long-term, and is in Europe's enlightened self-interest.



Thank you for your attention