

*PACT: Empowering Nations to Cure and Care for Cancer Comprehensively and Cost-effectively*

# Using Radiotherapy as An Anchor to Build Self-Sustaining Cancer Cure and Care Capacity in Developing Countries

Seminar on Nuclear Science for Diplomats  
3-5 February 2009

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**IAEA**

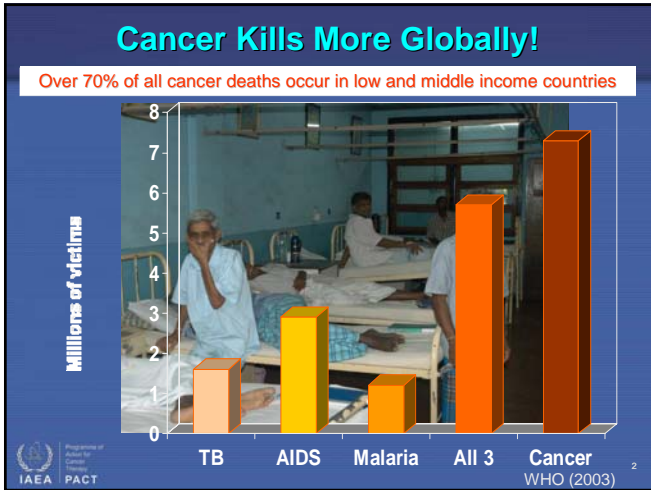
Programme of  
Action for  
Cancer  
Therapy

**PACT**

Contact: [pact@iaea.org](mailto:pact@iaea.org)  
and

Web: <http://cancer.iaea.org/>






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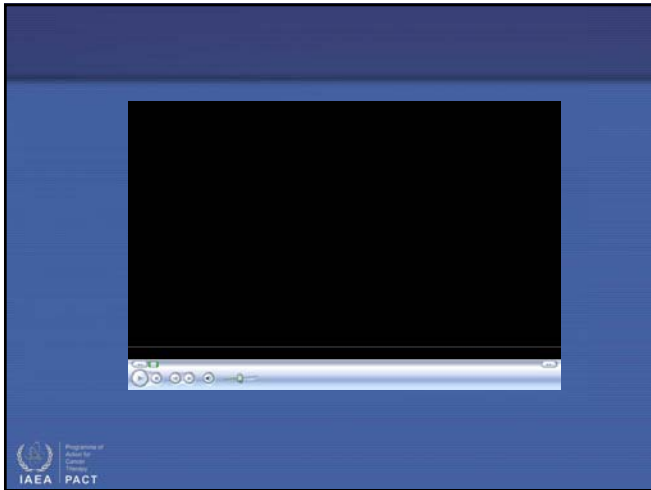
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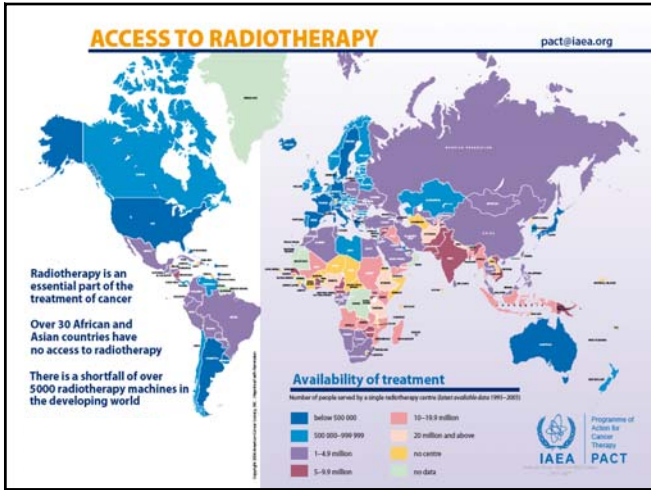
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### Need for Radiotherapy: 100 Million Cases in Developing World by 2020

The graph shows the number of cancer cases in millions from 2000 to 2020. The total worldwide cases are projected to reach 260 million by 2020. In developing countries, the total is projected to reach 150 million, with 100 million of those cases being suitable for radiotherapy (RT). The data points are as follows:

Year	Worldwide total (M)	Developing countries total (M)	Suitable for RT (M)
2000	~10	~5	~3
2005	~12	~7	~4
2010	~14	~9	~5
2015	~16	~11	~6
2020	260	150	100

50% in Asia, 30% in L. America, 20% in Africa!

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### Prevailing Situation: Patients

- **Lack of investment in early detection and diagnosis** results in patients with curable cancers seeking treatment so late that only palliative radiotherapy can a humane death
- Patients with curable breast, cervical, oral and other prevalent cancers are dying unnecessarily because **past investments have not always addressed cancer comprehensively**
- Effective treatment requires **a broad multidisciplinary and comprehensive approach** that includes capacity building in cancer prevention, early detection, diagnosis and palliation

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### But there is hope ...

- In **developed** countries, comprehensive **national cancer control programmes** — including prevention and early detection, coupled with a combination of treatments such as surgery, **radiotherapy** and chemotherapy — now result in increased health awareness and prevention, the **cure of over 45% of all cancers**, and **improved quality of life for cancer patients**
- **Men, women and children in developing countries deserve the same**

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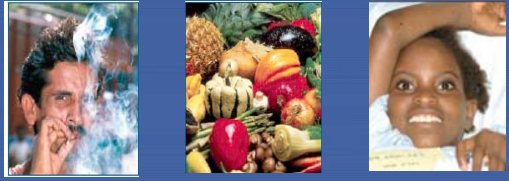
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**WHO:** 43% of cancer deaths are due to **tobacco, diet and infection.**

From a global perspective, there is strong justification for focusing cancer prevention activities on these three main cancer-causing factors

**No Tobacco**      **Healthy Diet**      **Prevent Infection**



IAEA PACT      Photos courtesy UICC and WHO

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**IAEA's Overall Goal**

- Cooperate with its Member States to:
  - **Introduce or expand existing infrastructure and capacity in radiotherapy**, in a sustainable manner
  - **Improve or accelerate widespread access to effective radiotherapy services** as an essential part of multidisciplinary cancer care

**This doesn't mean machines alone! There's more emphasis on trained professionals and quality of radiation and clinical services**

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**Radiotherapy Centres**

- Effective and sustainable transfer of radiation technology
- **Suitable, appropriate and affordable technologies**
- Compliance at national level with safety, security and quality standards



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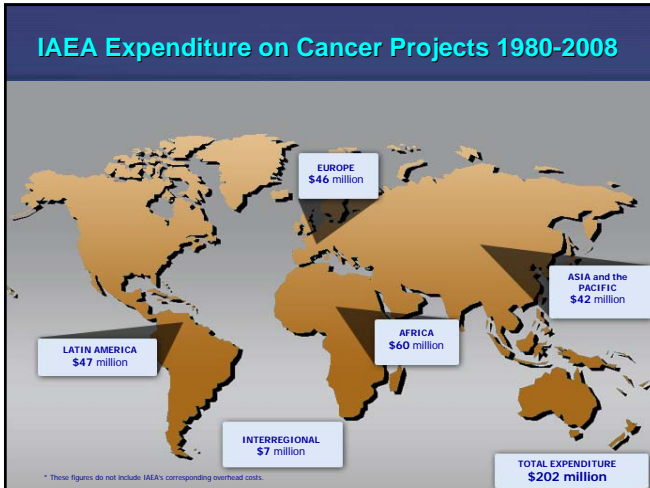
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### PACT was created to do more ...

**OUR GOAL:**

- Move IAEA's radiotherapy to a **public health model**
- Integrate **radiotherapy planning** into a **broad cancer control capacity building effort**
- Establish an effective, efficient and well coordinated IAEA cancer programme under the PACT umbrella
- Support cancer control planning in collaboration with WHO and other global health partners
- Establish centres of excellence and regional cancer training networks
- Drive forward **resource mobilization** through multidisciplinary **pilot projects**
- Advocate a totally **bottom-up approach**

Placing cancer on the global health agenda  
Using radiotherapy as an anchor to build self-sustaining national cancer control programmes in developing countries

IAEA PACT  
pact@iaea.org

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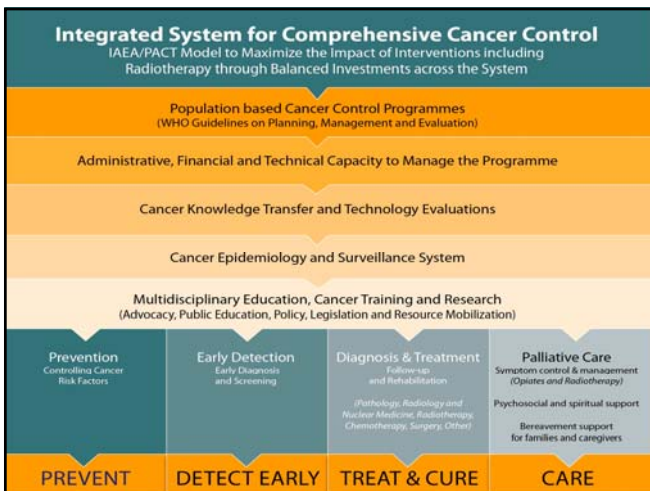
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## Stage 1: imPACT Review

- imPACT is a joint international effort to **Identify and assess a country's most pressing cancer needs** so that partners and donors can effectively respond
- imPACT is multi-stakeholder, involving national authorities and public-private partners (IAEA, WHO, IARC, UICC, NCI, INCTR, ACS and others)
- imPACT reviews have been conducted, using IAEA and partner expertise, for **13 Member States**:  
 Albania, Georgia, Ghana, Madagascar, Rep. of Moldova, Montenegro, Nicaragua, Peru, Sri Lanka, Syrian Arab Republic, United Rep. of Tanzania, Vietnam, and Yemen
- **More than 55 Member States** have requested imPACT reviews
- PACT is seeking resources and expertise to support these requests as an interagency activity


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## Stage 2: PACT Model Demonstration Sites (PMDS)

- Focus on a multidisciplinary programme and cancer capacity building strategy to secure **alliances**
- Establish **PMDS** as an example of the value and efficacy of interagency cooperation in combating cancer
- **Start with joint imPACT reviews**
- Project cost for comprehensive capacity building in **each country**, over a 5 year period is up to **€5.7M**
- Initial **PMDS**: Albania, Nicaragua, Sri Lanka, Tanzania, Vietnam, Yemen
- Up to 25 countries replicating successful models and strategies
- IAEA's contribution includes the **transfer of radiation medicine technology and training**


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## Stage 3: Regional Capacity Building

Lack of adequate human resources is a **critical bottleneck!**

- Focus on regional capacity building through the development of **Regional Cancer Training Networks** to create national and regional self-sufficiency
- Establish **regional reference cancer centres** to train health care professionals and provide mentorship to other centres within the region
- Assist such centres to serve as **regional hubs** for multidisciplinary cancer training among neighbours
- Involve leading cancer centres, North and South, in programme development and execution (**Cancer Control International Mentorship Network**)
- Establish a **Virtual University for Cancer Control** relying on existing recognised centres to train multidisciplinary personnel and to encourage trainees to stay in their home countries with ongoing professional development programmes:
  - Deploy modern IT tools and rely on existing recognised centres
  - Develop new facilities and tools for RT and other cancer training as needed
  - Facilitate training of multidisciplinary personnel for replacement personnel as well as creation/expansion of facilities




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### Nobel Peace Prize Cancer Institutes

- Nobel Fund was designated to cancer and nutrition training by the Board in 2005
- The PACT supported Nobel Peace Prize Cancer Institutes:
  - Raise public awareness about the essential role of radiotherapy in cancer control
  - Promote comprehensive cancer control planning to enhance the effectiveness of cancer treatment
  - Encourage capacity building by investments in national and regional cancer training networks
  - Encourage participation of policy makers and professionals
  - Develop multidisciplinary cancer advocacy and outreach packages through PACT Partners



5 Special Events and 3 training courses organised




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### Building Partnerships

- WHO/IAEA Joint Programme on Cancer Control being developed
- Formalized partnerships reached with WHO, IARC, INCTR, UICC, ACS, Tata Memorial Centre India, Univ of Oxford, OSI, PATH, Lance Armstrong Foundation, AXIOS and a dozen more underway with the private sector, academic centres and the industry
- Working partnerships with national cancer institutes and centres in Argentina, Algeria, Australia, Brazil, Egypt, France, India, Morocco, Pakistan, Peru, Philippines, Singapore, South Africa, Thailand, USA and with others under discussion
- More than 20 countries have offered their cancer hospitals and educational institutions to support PACT initiatives
- Fundraising partnership established with the US based National Foundation for Cancer Research
  - Development of PACT networks and partnerships has been one of its strongest attractions




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### Mobilizing Resources Public/Private Support

- Funds and resources valued at more than \$7M mobilized
- Ghana obtained \$7.5M from OPEC Fund and \$6M from BADEA as long term, low interest loans for cancer control proposal based on imPACT review
- A \$75M proposal for sub-Saharan Africa submitted to EU
- Community Counselling Services completed PACT Fundraising Study and Strategic Plan to raise \$30M for the PMDS, June 2008
- Ongoing discussions with development funds, ODAs, foundations and private philanthropists (e.g., Australia, Canada, Japan, Korea, France, Sweden, USA,...)
- PACT Website <http://cancer.iaea.org> accepts direct donations
- A PACT Endowment Fund established in US with 501 (c) (3) status with NFCR
- Donations of 3 radiotherapy machines by MDS Nordion [Best Medical Intl. Inc.]
- Donation of a Bhabhatron II teletherapy machine by India to Vietnam PMDS
- Atomic Energy Bureau, Rep. of Korea, raises funds for PACT from Korean citizens




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