



Computer Models: A Tool for Policymakers

The POLICY Project facilitates the creation of policies that promote and sustain access to high quality family planning/reproductive health (FP/RH), HIV/AIDS, and maternal health programs in developing countries. Multisectoral collaboration, community empowerment, and respect for human rights and gender equality characterize POLICY's approach to improving reproductive health policies and services.

The four key components of the project's work are: strengthening political and popular support for FP/RH programs and service; improving finance and planning for these programs; ensuring that accurate information informs decision making, and building in-country capacity to participate in the policy process. POLICY's computer models are integral to each of these activities. Through proper analysis and dissemination, the outputs of computer models can draw attention to priority action areas, identify the effects of various funding and implementation strategies, and serve as an advocacy tool for NGOs and civil society groups. To transfer knowledge and skills in computer modeling to in-country partners, POLICY provides technical assistance in a number of areas including data collection, data analysis and use, advocacy, and presentation software.

The POLICY Project's computer models are part of a software system called **SPECTRUM**. SPECTRUM is a suite of policy models that make use of a unified set of Windows-based commands that can be easily learned. The models comprising SPECTRUM are used to project the need for reproductive health services and the consequences of not addressing reproductive health needs. Most models are available in English, French, and Spanish. Some are also available in Portuguese, Arabic, and Russian. Each model includes a detailed user manual that not only describes how to use the software but also includes sections on data sources, interpreting and using the results, a tutorial, and a description of the methodology. The models included in the SPECTRUM system are described below.

Demography (DemProj)

DemProj is used to make population projections for policy presentations or planning exercises and to create the population projections required by the other programs in SPECTRUM. It projects the population for an entire country or region by age and sex, based on assumptions about fertility, mortality, and migration. A full set of demographic indicators can be displayed for up to 50 years into the future. Urban and rural projections can also be prepared. A companion model, EasyProj, supplies the data needed to make a population projection from the estimates produced by the Population Division of the United Nations.

Family Planning (FamPlan)

FamPlan projects family planning requirements needed to reach national goals for addressing unmet need or achieving desired fertility. It can be used to set realistic goals and to plan for the service expansion required to meet program objectives. The program uses assumptions about the proximate determinants of fertility and the characteristics of the family planning program (method mix, source mix, discontinuation rates) to calculate the cost and the number of users and acceptors of different methods by source. Various strategies can be simulated as a way to evaluate alternative methods of achieving program goals.

<i>AIDS Impact Model (AIM)</i>	AIM projects the consequences of the HIV/AIDS epidemic, including the number of people living with HIV/AIDS, new infections, and AIDS deaths by age and sex as well as new cases of tuberculosis and AIDS orphans. AIM is used by UNAIDS to make the national and regional estimates it releases every two years.
<i>RAPID</i>	RAPID projects the social and economic consequences of high fertility and rapid population growth for such sectors as labor, education, health, urbanization, and agriculture. This program is used to raise policymakers' awareness of the importance of fertility and population growth as factors in social and economic development.
<i>Ben-Cost</i>	Ben-Cost compares the costs of implementing family planning programs with the benefits of those programs. It can be used to illustrate the benefits of family planning programs and to highlight the impact of increased national funding.
<i>NewGen</i>	NewGen projects the characteristics of the adolescent population in terms of such indicators as school enrollment, sexual activity, pregnancy rates, prevalence of HIV and STIs, and marriage rates. The linkages among these indicators and the effects of policy changes can be examined.
<i>PMTCT</i>	PMTCT evaluates the costs and benefits of intervention programs to reduce transmission of HIV from mother to child. Three different sets of interventions are included in the model: drug treatment (seven possible options); type of delivery (vaginal or Cesarean section); and type of infant feeding (formula, breastfeeding, or mixed). Outputs include a benefit-cost ratio as well as cost-effectiveness measures such as cost per HIV infection averted.

The following models can be obtained as stand alone models, which, ultimately, may be included as part of SPECTRUM.

<i>Safe Motherhood Model</i>	This model represents the relationships between a national maternal health program and the resulting maternal mortality ratio (MMR) and the number of maternal deaths. The model helps determine which safe motherhood interventions, alone or in combination, help reduce the maternal mortality rate. The model is based on a study of 49 countries that asked experts in each country to rate 81 features of the national maternal and child health program.
<i>GOALS</i>	GOALS addresses the issue of resource allocation for HIV/AIDS programs. The model is intended to help answer three key questions: (1) How much funding is required to achieve the goals of the strategic plan? (2) If funding is limited, what goals can be achieved with available funding? and (3) What is the effect of different ways of allocating available resources among various prevention, care, and mitigation interventions?

The table below indicates the availability of models and user manuals by language. Models and manuals can be downloaded from the POLICY Project's website (www.policyproject.com).

Model	In SPECTRUM?	Language					
		English	Spanish	French	Portuguese	Russian	Arabic
DemProj	Yes	X	X	X	X	X	X
FamPlan	Yes	X	X	X		X	X
AIM	Yes	X	X	X	X	X	#
RAPID	Yes	X	X	X	*		X
NewGen	Yes	X	#	#			#
Ben-Cost	Yes	X	#	#			
PMTCT	Yes	X	X	X			#
Safe Motherhood	No, Excel only	#					
GOALS	No, Excel only	X	X	X			

Key: X = Both model and manual are available
 # = Only the model is available
 * = Only the manual is available

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POLICY is a five-year project funded by the U.S. Agency for International Development (USAID) under Contract No. HRN-C-00-00-00006-00, beginning July 7, 2000. It is implemented by The Futures Group International in collaboration with Research Triangle Institute (RTI) and The Centre for Development and Population Activities (CEDPA).