
Epidemiologic Tools for Better Healthcare Delivery in the Philippines

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Lecture Outline

I. Introduction

II. Using Epidemiologic thinking & tools

1. Working in the academe

2. Working in the pharmaceutical industry

3. Working with government

III. Conclusion



PHILIPPINES



JAPAN



Japan & the Philippines are similar ...

- **JAPAN**

- Archipelago (4 major island groups)
- Area: 377,915 sq km
- Calamities – typhoons, earthquakes

- **PHILIPPINES**

- Archipelago (3 major island groups)
- Area: 300,000 sq km
- Calamities – typhoons, earthquakes



Japan & the Philippines are different ...

- **JAPAN**

- Climate: temperate
- Economy:
 - 3rd largest in world
- Median Age: 45.4
- Pop Growth Rate: 0.08 %
- Birth rate: 8.39/1000
- Life expectancy: 83.91

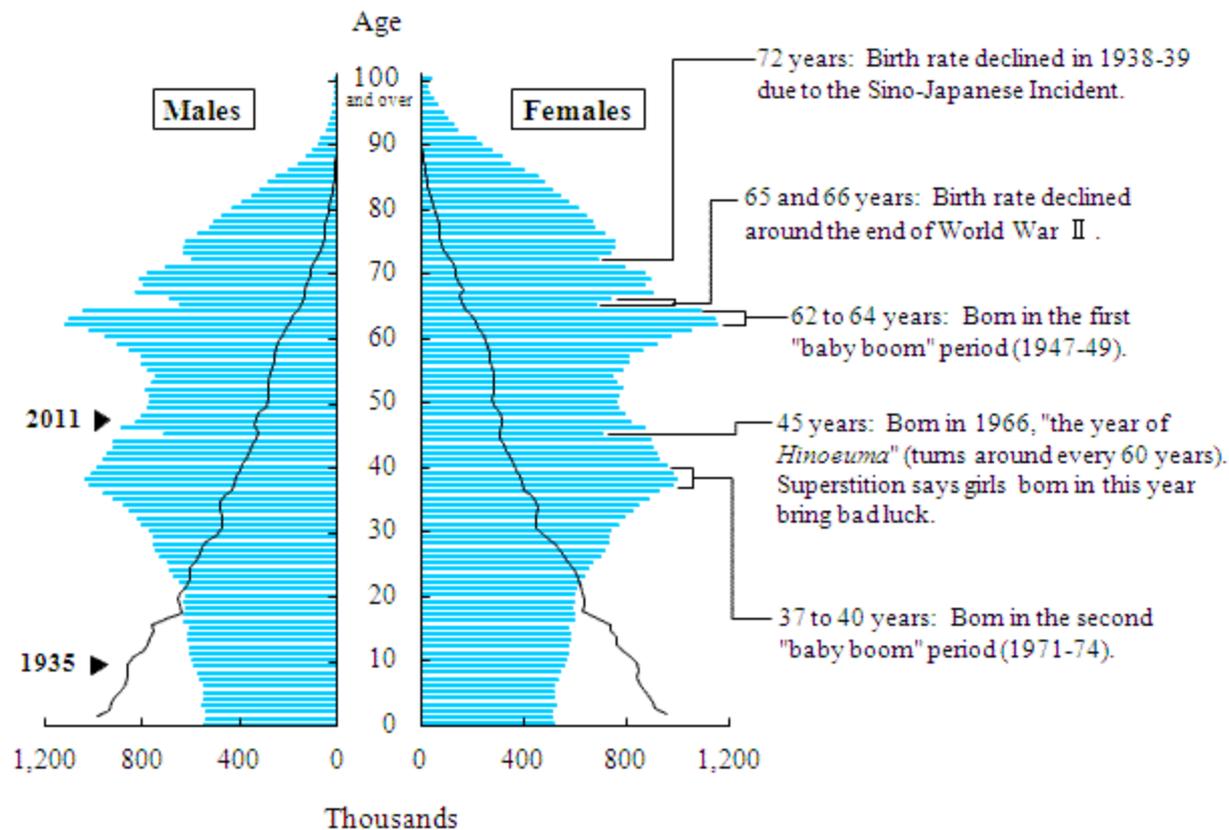
- **PHILIPPINES**

- Climate: tropical
- Economy:
 - 43rd largest in the world
- Median age: 23.1
- Pop growth rate: 1.87 %
- Birth rate: 24.98/1,000
- Life expectancy: 71.94



Population Pyramid, Japan

Figure 2.1
Population Pyramid



Source: Statistics Bureau, MIC.

SOURCE :
Ministry of Internal Affairs
& Communications
Statistics Bureau



Population Pyramid, Japan

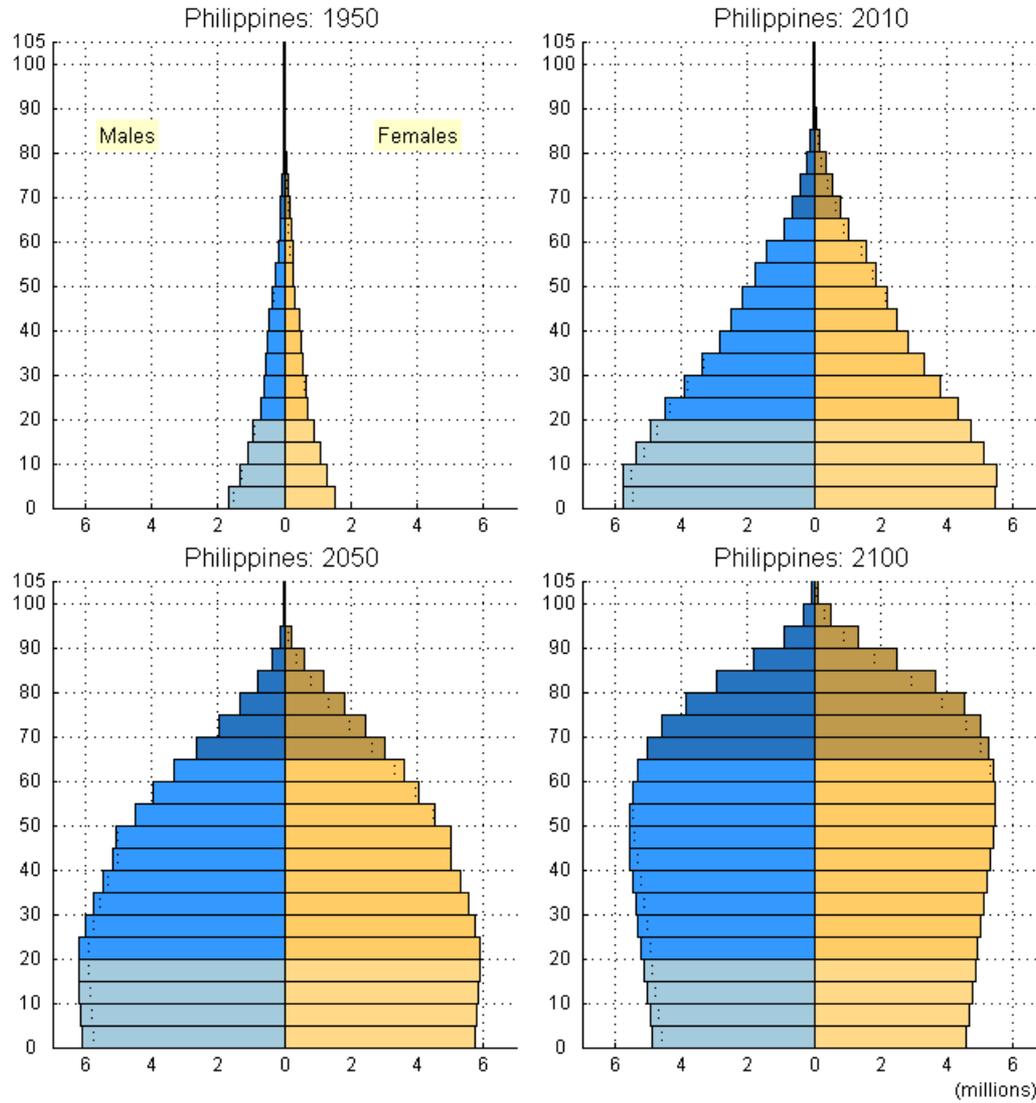
Figure 2.3
Changes in the Population Pyramid



Source: Statistics Bureau, MIC; Ministry of Health, Labour and Welfare.



Population Pyramid, Philippines



SOURCE :
United Nations,
Department Of Economic & Social Affairs
Population Division



Top 10 Mortality Causes

JAPAN

1. Stroke
2. Influenza & Pneumonia
3. Coronary Heart Disease
4. Lung Cancers
5. Stomach Cancer
6. Colon-Rectum Cancers
7. Liver Cancer
8. Suicide
9. Kidney Disease
10. Pancreas Cancer

PHILIPPINES

1. Coronary Heart Disease
2. Influenza & Pneumonia
3. Stroke
4. Tuberculosis
5. Hypertension
6. Diabetes Mellitus
7. Violence
8. Lung Disease
9. Kidney Disease
10. Asthma



My Journey

- Education
 - Doctor of Medicine
 - Diploma in Tropical Medicine & Hygiene
 - M.S. Epidemiology (Public Health)
- Work experience
 - Medical Officer, DECS
 - Research Associate/ Teaching Fellow
College of Public Health, University of the Philippines
 - Varying positions/ Pharmaceutical Industry
 - Medical Information/ Safety/ Clinical Research / Quality Standards
 - Part-time Faculty
 - College of Public Health,
University of the Philippines Manila
 - Ateneo de Manila University
 - Consultancies
 - Department of Health
 - World Bank



Epidemiology

The ***study*** of the ***distribution*** and ***determinants***
of ***health-related states or events***
in human ***populations***,
and
the ***application*** of this study
to the prevention and control
of health-related problems.

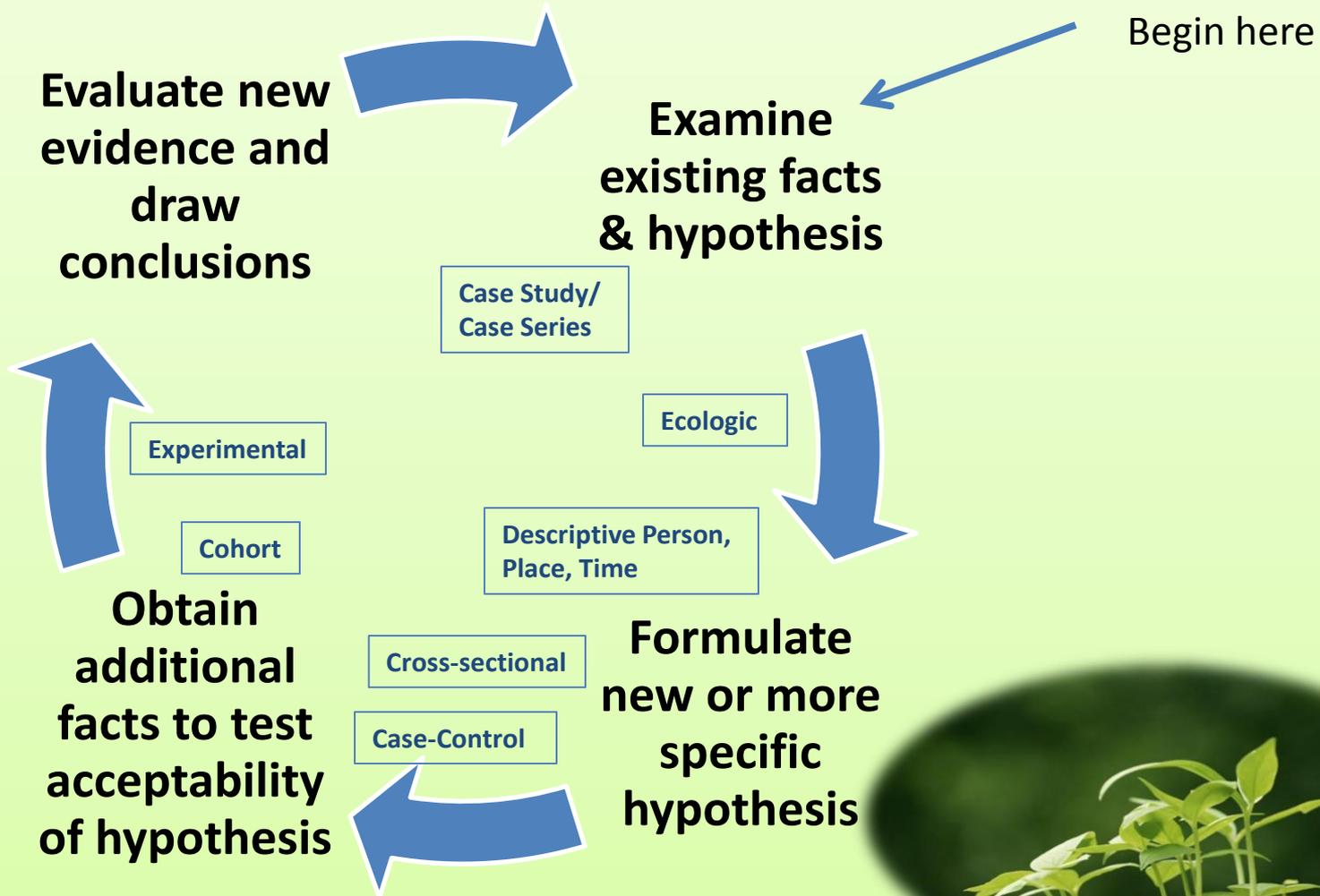


Why is epidemiology useful?

- Identifies and measures the importance of health problems, describe the high-risk groups, and elucidate the causes of these problems
- Understand the natural history of disease
- Essential for disease surveillance and control
- Contributes to planning, monitoring, and evaluation of health services
- Serves as a key instrument in the formulation of health policies which may incorporate social, behavioral, and economic dimensions in addition to the provision of health services



Epidemiologic Thinking



Scientific Method

- 1. Ask a Question**
- 2. Make Observations and Conduct Background Research**
- 3. Propose a Hypothesis**
- 4. Design an Experiment to Test the Hypothesis**
- 5. Test the Hypothesis**
- 6. Accept or Reject the Hypothesis**



Tools of Epidemiology

- Scientific methods of study/ research
- Techniques for collecting & organizing information
- Information about the biological basis of health & illness
- Information about human behavior that affects health
- ‘People skills’ needed to gain cooperation and gather solid information



Working in the Academe

- Teaching Epidemiology
 - Understanding epidemiology
 - Contextualizing the program for the different types of learners
 - Programs
 - Aptitudes
 - Mentoring students



Community Intervention Trial on the Completion & Timeliness of Infant Immunization Using Electronic Immunization Tracking System with Mobile Reminders

- **Background:**

- Importance of vaccinations in preventing the occurrence and spread of preventable diseases
- Expanded program of Immunization (WHO, UNICEF): Basic service that should be given to children
- Despite the availability of vaccines (BCG, DPT, OPV, Hepa-B and Measles) immunization completion rate is 70 % for children by one year of age
- In the experiment areas, reported completion rates are 65 % and 67 %.

- **Objectives:**

- To determine the effect of an Electronic Immunization Tracking system with Mobile Reminders (EITS-MR) on the completion and timeliness of infant immunizations in Barangay X



Community Intervention Trial on the Completion & Timeliness of Infant Immunization Using Electronic Immunization Tracking System with Mobile Reminders

- ***Methodology:***

- Research Design: quasi-experimental, community intervention trial
- Intervention: Electronic Immunization Tracking System with Mobile Reminders
- Population: Two barangays, in City X, 65 % and 67 % immunization completion rates
- Sample size: 221 vaccine episodes/ barangay
- Sampling: Mothers were randomly selected from list of expectant mothers



Prospective Cohort Study: Participation & Compliance to the Mass Drug Administration in Barangay X for Schistosomiasis

- ***Background:***

- Schistosomiasis:

- neglected tropical disease affecting 779 M worldwide; in the Philippines – 28 provinces, 12 M are affected
- To decrease the incidence & prevalence of Schistosomiasis, massive drug administration of Praziquantrel is done
- Despite high recorded participation rates, the chosen barangay remains to have the highest prevalence rates among the endemic areas
- Suggesting the need to differentiate participation with compliance



Prospective Cohort Study: Participation & Compliance to the Mass Drug Administration in Barangay X for Schistosomiasis

- ***Objective:***

To determine the association between the six constructs of the health belief model and participation and compliance to schistosomiasis Massive Drug Administration in *Barangay X*

Exposure: *factors from health belief model*

(perceived susceptibility, perceived severity, perceived effectiveness, perceived cost, cues to action, self-efficacy)

Outcome: *participation & compliance to schisto MDA*



Prospective Cohort Study: Participation & Compliance to the Mass Drug Administration in Barangay X for Schistosomiasis

- **Methodology**

Research design: prospective cohort study

Sample population: Barangay, high prevalence

Sampling method: Systematic random sampling

- **Data Collection Instruments**

Survey

- Before MDA - to collect data on exposure
- After MDA – to collect data on participation & compliance

Focused group discussions



Working in the Pharmaceutical Industry

- Medical Information
- Safety
- Clinical research
- Quality Standards



Medical Information

- Availability of information
- Access to information
- Quality of information
 - Completeness
 - Timeliness
 - Precision
 - Relevance
 - Adequacy
- Understanding the information
 - Evidence based medicine



Medical Information

- **Internal stakeholders**

(Medical, Marketing & Sales)

- Inform them of availability of information
 - Advocacy & orientation sessions
- Understanding how to select & use information for promotion of drugs
 - Evidence –based medicine

- **External stakeholders**

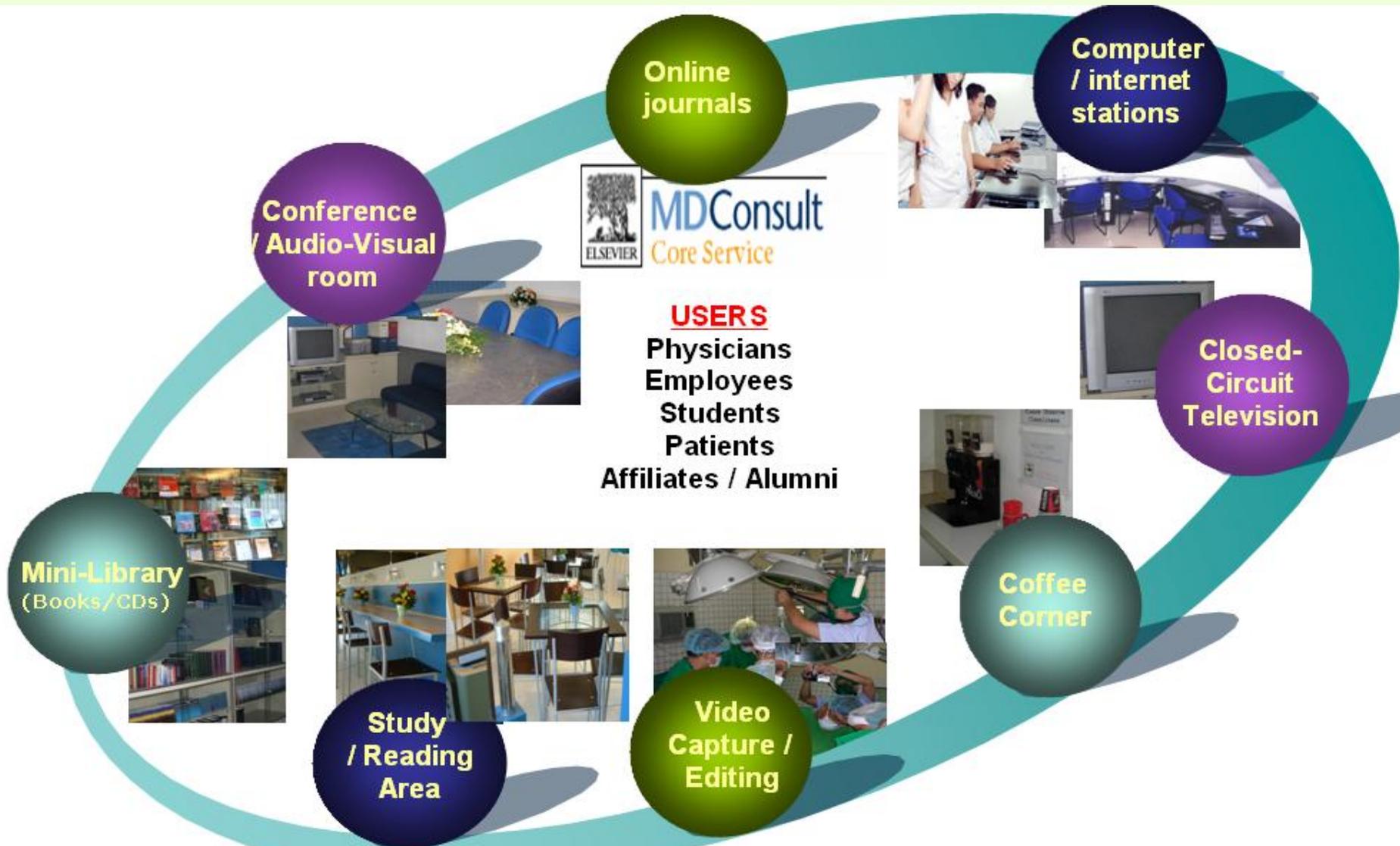
(Medical Institutions, MDs)

- Provide access to medical information





Facilities Available



Medical Information Centers



Map showing the Medical Information Centers across the Philippines.



Safety

- **Adverse Event Reporting**
- **Morbidity & Mortality Surveillance**
- **Risk Management**



Clinical Research

- Management & delivery of clinical trial needs
 - Post marketing surveillance studies
 - Randomized controlled studies
 - Observational studies
- Training of investigators, clinical trial staff
- GCP, SOPs



Quality Standards

- Champions quality in the medical department & the whole company
- Knowledge of global and local standards
- Institutionalization of SOPs to ensure compliance to standards
- Gap Analysis
- Process Improvement
- Audit preparedness



Working with the Government

- **Department of Health**

National Objectives for Health

- The National Objectives for Health is the country's strategic health plan.
- The content of this plan is, usually:
 - goals, policy objectives, and norms or guiding principles,
 - description of the expected scenario, and
 - an indicative budget allocation.
- The NOH is developed and published every six years by the Department of Health (DOH) and is distributed to key stakeholders of the health sector.
- There have been two previous editions of the NOH in 1999 and in 2005.



Working with the Government

- **Department of Health,
National Objectives for Health**
 - The Midline Survey was developed to complete the information needed for National Objectives for Health 2011-2016.
 - Since the last NOH Baseline Survey in 2000, the DOH has developed internal information systems to measure many of the NOH's objectives. Nonetheless, several indicators still have no available data.
 - The NOH midline survey thereby seeks to address this information gap thru collecting primary data from households and health facilities nationwide



National Objectives for Health

- **Midline Survey**

- Objectives

- To identify the indicators from the NOH that needed primary data collection and
 - To develop and conduct the necessary researches (primary data collection) to show the updates on selected indicators.

- Parts

- Household Survey
 - Facilities Survey



National Objectives for Health

- **Household Survey**

- Multi-stage cluster random sampling with a total of 2,787 households and 13,456 household members included in the survey.
- Information related to the following indicators were collected in the survey:
 - selected household and respondent demographic characteristics,
 - smoking and alcohol prevalence,
 - pap smear,
 - community health hazards,
 - traditional medicine,
 - sanitary toilets and
 - selected health promoting behaviors.



National Objectives for Health

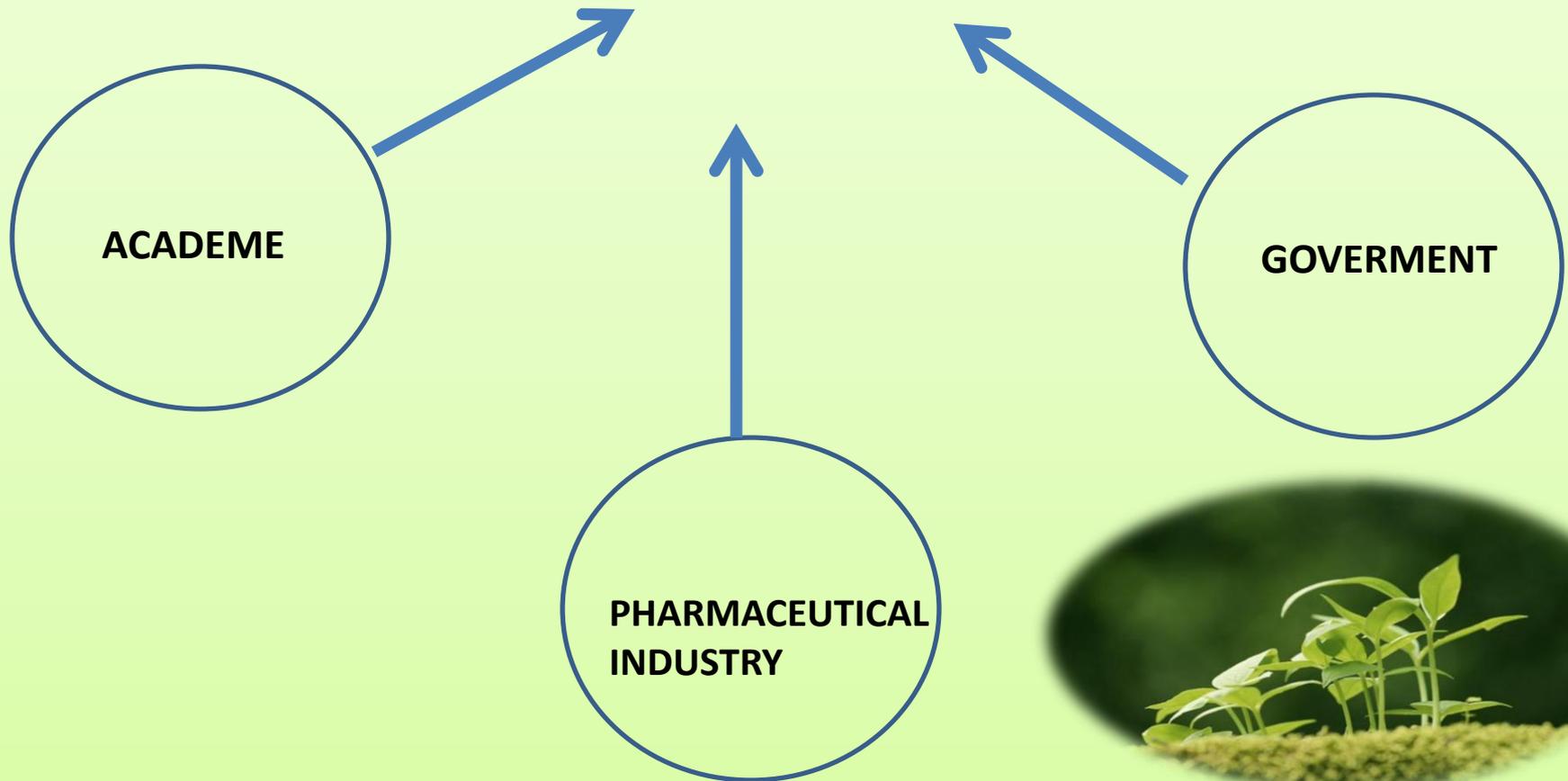
- **Facilities Survey**

- Purposive type of sampling.
- Key informants from the health institutions nearest the selected barangays (from the Midline Survey) were interviewed.
- Information related to the following indicators were collected :
 - Integrated Management of Childhood Illness protocol,
 - Health Friendly Hospital Services,
 - Health Care Waste Management IRR,
 - Milk Code and health services.



Health for All

Better Healthcare Delivery



Conclusion

- Epidemiologic thinking and epidemiologic tools are good anchors in developing, establishing and evaluating health programs.
- The use of appropriate epidemiology enables health workers to effectively plan, develop, implement and evaluate their programs.



THANK YOU!!!

