

PRIORITY HEALTH PROBLEMS AS A VEHICLE FOR UNDERGRADUATE

PROBLEM BASED LEARNING IN COMMUNITY MEDICINE

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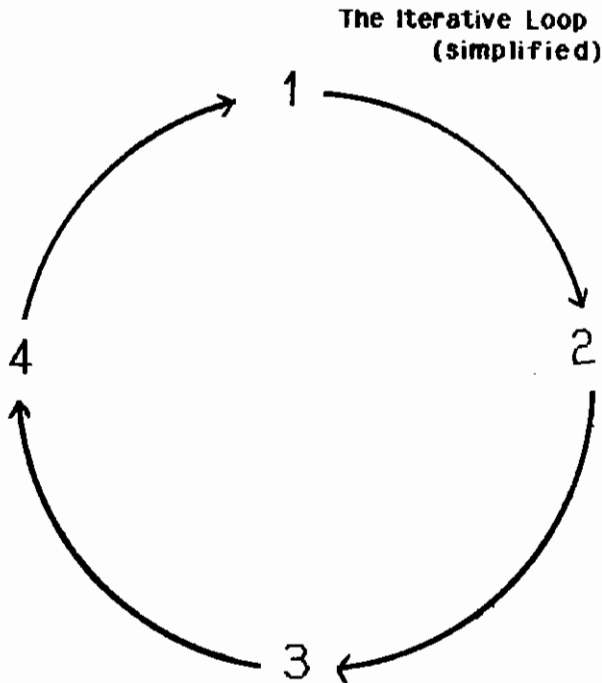
The COME curriculum, which since its inception has been spread throughout the study years, has been completely rebuilt in the last 2 years to a full problem based learning (PBL) model with examples likely to be met in practice.

A three dimensional set of objectives aims to produce a graduate equipped for the task of health centre doctor responsible for the health of the population of a district, which he/she will be expected to fulfil immediately upon graduation. The problem modules lead up to structured field exercises and are adapted to the state of knowledge of students who for remainder still follow a traditional curriculum.

The objectives encompass the ability to use basic epidemiological methods and the skills needed to discover the state of health of the population, the risk factors involved, to design possible solutions and to evaluate implemented programmes/ services, both preventive and curative.

The means to achieve this are examples selected from common conditions in the community that lead to complaints or from the Priority Health Problems set by the GOI (Government of Indonesia) and the WHO as the focus of their campaigns for Selective Primary Health Care (PHC-Sel). Modules are based on acute infectious diseases (diarrhoea, tetanus neonatorum, measles), chronic infectious diseases (tuberculosis, venereal disease), parasitic diseases (malaria, worms, scabies), non-infectious diseases (nutrition, hypertension, stomach pain (gastric/duodenal)).

Network of COEHS, Abstract/Summary of paper for Symposium on Progress and Challenges in Health Science Education 1987, Bangkok 30 Sept - 2 Oct.



The function of the Iterative Loop

The Iterative Loop is simplified to four main sections:

1. Burden of Illness - descriptive epidemiology - what, who, when, (where)
2. Determinants and Risk factors - descriptive epidemiology - who, when, where, with emphasis on environmental factors, followed by aspects of analytical epidemiology: relative and attributable risk. Emphasis on local (small scale) data.
3. Choose an Intervention - examine possible intervention according to efficacy and costs, and design/select an intervention to fit known facts about the burden of illness and its determinants.
4. Outline Evaluation of Interventions with special emphasis on Management issues: costs and benefits, effectiveness and efficiency, including clinical skill and treatment evaluation, preventive measures.

The scheme used represents a modified Community Diagnosis - in this case strongly biased to health/ disease issues.

The outline serves to identify the emphasis in each year, though the entire loop is also used in the problem solving cycle in each component in order to emphasise context.

Each cycle can be completed once in a theoretical semester.

The Semester Dimension

There are four years, each of two semesters. In the first year time available for Community Medicine (COME) is half that in later years. The first year has introductory courses which shorten the first semester. The come programme adds a special block for PBL study skills - this is necessary both for the tutors and the students. Thus, the first semester only starts with new medical educational material half way through.

The first year there is no fieldwork; because of the limited time both semester are used for learning in the 'dry' setting. In the other three years, the second semester is reserved for field exercises, these are limited by financial and manpower resources.

THE "SCIENTIFIC METHOD" DIMENSION

Running across the above is a series of concepts inherent in the "Scientific Method" used in Epidemiology: issues of measurement.

Sources of data and methods of measurement; validity, reliability, bias; relative and attributable risk, measurement of risk factors; conclusions about efficacy, effectiveness and efficiency; input-process-output evaluation. Drawing inferences, formulating hypotheses, assessing research result critically are presented with increasing difficulty over the years: something of the "scientific method" needs to be included in each learning block.

PBL AND CYCLE DIMENSION

The "pillars" of each Iterative Loop step are divided into "bite size pieces" for the group meetings according to a simplified stepped Problem Based Learning/Solving model derived

from McMaster/Maastricht models:

1. Identify terms and concepts you don't know - not only is it a new subject, also much of the material is in English. Devide the tasks and spend time to look up the terms.
2. Define the problem-nucleus; the tutor has to guide the group to the focus in the objectives - eg. semester I: prevalence/incidence of intestinal worms. Devide the tasks: reading is suggested: chapters in the source book which all students and tutors have; articles; usually one or two are suggested and provided in the "study landscape" for group use.
3. Discuss the new knowledge in detail and apply the new knowledge to the area you know.
4. Translate the theory into a practical application: students may be asked to suggest ways of data collection, design an instrument for a survey, suggest an intervention, suggest a way to assess a programme according to the choice of subject matter and year of study.

PRIORITY HEALTH PROBLEMS

The mold is filled with a palatable vehicle of priority health problems based on local findings or already outlined by outside sources with considerable overlap between countries according to degrees of poverty. The least poor are called the most "developed" and are also the most industrialised.

The vertical blocks are taken from acute and chronic infectious diseases, parasitic diseases, or non-infective acute and chronic problems. Care is taken to give due emphasis to mother and child health, but not to totally neglect the adolescent, adult and aged.

ILLUSTRATIONS FROM THE UGM PROGRAMME

Because the programme at UGM is still new, we are still in the "experimental" phase in our use of the model.

Before 1985/6 the students had introductions to subjects by lecture followed by field exercises, which often left a lot to be desired. When they entered the nem programme which started in their later years, they had really no basis.

Hence for two years the senior students were given the entire cube compressed into a kind of astronaut food - but it became rather indigestible, especially since much of the material was new to the tutors and they were not used to group work where the group did the work and they were merely giving guidance and did not have to function as an "expert". They felt very threatened, and escaped into old patterns of teaching on the basis of handouts to tutors not meant for this purpose.

We were simply too ambitious - but at least every one who took part liked a change and was willing to give it a go, and tutors took part in more than one training course.

In 1987 the programme has been reduced to more manageable proportions. There is one source book for all semesters - this gives an indication to the students what is eventually expected of them. The contents are appended. The Priority Health Problems and the "bite size pieces" are in little booklets.

In the early years subjects are geared to the preclinical disciplines:

First year: the first subject to be tackled is intestinal worms, a very common condition; it fits with the parasitology block; it leads to environmental factors and to the lab investigation of water and soil (simple microscope use); it can lead to issues of digestion and nutrition. More clinical issues can be left out in the early stages. The block in the second semester could be Nutrition, focussed on under-fives, and related to the physiology of growth.

Second year: Tuberculosis - a chronic infectious disease with close links to nutrition, poverty, but also direct transmission, immunology, immunization. Risk factors are a wide open field.

Third year: Diarrhoea - this allows discussion of the Diarrhoeal Control Programme of the government as well as a discussion of personal and environmental risk factors, vulnerable groups and the use and misuse of drugs.

Fourth Year: Measles: the clinical picture, the expense of treatment and the need for immunization leads to an evaluation of the WHO EPI programme. Another useful clinical block could be ARI.

The examples can be seen to contain much selected literature in English - this is purposely done because graduates in the medical field must be able to comprehend English to remain up to date.

RELATION TO FIELD WORK

The fieldwork is an extension of the theoretical work of the same year:

ei, in Semester VI secondary data available in the Health Centres

In Semester VIII programmes already being implemented from the Health Centre base need field data to evaluate all aspects - and if needs have been identified in previous field work, which are not included in a programme, a small new local Plan of Action may be designed.

After passing the basic examination in the theoretical subjects the students actually have a practical clerkship for 4 weeks in a Health Centre as if they were a Health Centre practitioner. The three weeks are spent in evaluating 10-14 programmes run in the Health Centres and the preparation of a Plan of Action proposal with the Health Centre doctor - one is required for each programme. The last week is spent looking at the intersectoral and interlevel relationships of the use made of the Health Information System.

It is at present not a requirement that the young graduate does an apprenticeship (like an intern) for a more extended period, after completion of the usual, relatively short, clerkships.

DISCUSSION

The model as such is an adaptation of existing practices in many schools and is equally useable in developed and developing programmes since the content of the individual illustrations per year can vary by programme and place.

Problem based learning means blocks have to start with a problem that the student must be able to recognize in order to use it efficiently as a tool for learning, especially in the beginning, and to find solutions, especially in later years.

For instance, complaints are a useful way to introduce the difference between subjective feelings and (more or less) objective medical diagnostic labels. Since every student knows that people are born and die, Vital Statistics are a useful way to approach Burden of Illness.

Epidemiology can be called the basic science of Community Medicine - it is to a large extent comprehensible to non-medical people. New students are in fact lay-people with a special interest. Epidemiologic methodology needs many instruments developed in the behavioural and social sciences and the analysis and interpretation of the data again frequently relies heavily on techniques developed by those sciences, with, in addition, the input from the natural history of disease, and biomedical science.

For instance, in UGM, where the rest of the curriculum is still given in the traditional lecture based way starting with the basic sciences, ending with the clinical sciences, the scientific method to which students are introduced in the first part of their general curriculum lends itself admirably to an introduction to descriptive epidemiology and a discussion of the determinants of disease/abnormality in populations, both from the social and biological viewpoint.

Though the overall objectives are clear, the individual blocks are at present still being built. It is the intention to develop different topics in subsequent years so as to gradually form a more balanced set of blockbooks which can then be integrated into the clinical curriculum, which then will (we hope) lead to a young graduate better able to start life as Health Centre doctor.

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