REPORT OF THE SECOND INFORMAL WORKSHOP ON INJECTION PRACTICES RESEARCH

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I. INTRODUCTION

This report contains the proceedings of an informal workshop on injection practices research which was organized by the University of Amsterdam and the Action Programme on Essential Drugs, (DAP) of the World Health Organization, on 21 and 22 October 1991 in Amsterdam. A first workshop was held in Geneva in May 1990 of which a full report is available: "Report of an informal workshop on injection practices research" (WHO/DAP/91.8).

The main objectives of the research project are to:

* estimate the extent to which injections are used as a route for the administration of medications;

* determine the type and degree of improper and unsafe practices in the process of administration of injections;

* gain insight into why injections are so popular;

* develop a simple, and rapid survey methodology for future assessments of the extent of inappropriate injection use.

Within the WHO Headquarters in Geneva, the Action Programme on Essential Drugs, the Expanded Programme on Immunization and the Global Programme on AIDS have been involved in the formulation of this research project.

II. AIMS OF THE WORKSHOP

The aims of the workshop were:

1. to review the progress of the injection practices research projects in Uganda, Senegal, and Indonesia;

2. to discuss social and cultural aspects of injection use¹;

3. to plan future activities, specifically concerning the utilization of the research results.

III. THE PROGRESS OF THE RESEARCH PROJECTS

The research teams in the three participating countries started to implement the projects shortly after WHO/DAP informed them that the projects could begin (May 1991). In Senegal and Indonesia the quantitative study has been done in one district/province. In Uganda some initial qualitative research has been done, based on which the quantitative research methods have been revised.

¹. This was a follow-up to the first International Conference on Social and Cultural Aspects of Pharmaceuticals (October 17th - 20th), during which the researchers participating in the injection practices research presented a paper on their preliminary findings.
The three country teams plan to conduct the qualitative research in one district (and the quantitative survey in two districts). In Senegal this will be Kolda, in Indonesia, West Java and in Uganda the Jinja district. In Indonesia the qualitative research (focus group discussions) will be done at the same time as the quantitative study (end of November 1991). The Senegalese team plans to do this after the quantitative analysis (in January 1992). In Uganda the principal investigator will do the qualitative study from January to March 1992 in one rural community in the Jinja region, while research assistants conduct the quantitative study.

Two country visits have been carried out by Dr A. Hardon (Senegal) and Dr M.L. Tan (Indonesia) to support the research teams in the development of the qualitative components of the research projects, and to discuss the implementation of the quantitative components.

All teams will have finished data-collecting and analysis by June 1992.

IV. QUANTITATIVE ASPECTS OF THE STUDIES

Sampling frame

All country teams have used the sampling frame suggested in the initial study proposal (i.e. covering two different districts/provinces, sampling within each district three different health care settings: one urban, one semi-urban, and one rural). In Senegal, however, the Dakar region does not include rural communities. A peripheral urban slum was therefore selected as the third health care setting. The Indonesia team utilized cluster sampling to select households at the community level; the Senegalese team utilized systematic sampling (every third house, left and then right).

The sample size differs somewhat in the various countries. In Indonesia and Uganda a total of 720 households will be surveyed. In Senegal the number is 400. It is noted that sample size is especially important if one wants to compare injection use in the urban, semi-urban, and rural health care settings. If insufficient households are surveyed, comparisons between these areas with respect to injection use prevalence will not be appropriate.

Indicators

During the workshop the researchers reviewed the indicators and methods that had been developed during the first informal workshop on injection practices (May 1990, see appendix 1) in Geneva. They concluded that all the developed indicators were feasible. Some reservations were however expressed with respect to the use of hypothetical illness cases (i.e. what would you do if a child of four years old had diarrhoea, see indicators IIb) to assess the use of injections. In the first informal workshop on injection practices research the teams had agreed to use two tracer conditions as hypothetical illness cases:

* cough and cold in any age,
* diarrhoea, less than five watery stools per day, in children under five.

The researchers from Senegal reported that health workers would ask the interviewers for more details on the illness cases, stressing that they could not define an appropriate therapy without a proper diagnosis of the patient. In Indonesia the team decided not to use hypothetical illness cases in the
questionnaires, because of the difficulty in defining such hypothetical cases. The Uganda researcher further points to difficulties in defining the illness cases in local terms. In Uganda the term for fever can, for example, also mean malaria.

It was further noted that some of the indicators would not be used by all three of the country teams, due to constraints in operationalizing all the indicators in the research projects, specifically:

* The Senegal research will not measure the indicator 1f (see appendix 1), i.e. the proportion of patients at the health facility receiving injections. This, because no accurate patient records exist, and the team does not have time (financial constraint) to do an additional survey of patients being treated at the health facilities. In Indonesia this indicator will only be studied for the public sector. The observation period in these facilities will be one whole day (preferably the market day in town, when many patients visit).

* The Indonesia team has not measured the use of contraceptive-injections and immunization in the past two weeks in Lombok. The questionnaire will be revised slightly to include a question on these types of injections in the household surveys in West-Java.

**Minimal hygienic standards**

The researchers further reviewed the minimal hygienic standards which were defined during the first informal workshop on injection practices research. It was agreed that these are too complicated for use in the field by research assistants. Suggestions for revision were suggested, see appendix 2.

V. QUALITATIVE ASPECTS OF THE STUDIES

At the preceding Conference on Social and Cultural Aspects of Pharmaceuticals a number of papers were presented that focused on injections (see appendix 3 for a list of the titles). These papers show how complicated distribution pathways of injections are: needles, syringes and the pharmaceutical content of the injection can all come from different sources. The distribution patterns differ from country to country and are determined by pharmaceutical and health care sector characteristics and increasingly by the AIDS control campaigns that warn people against re-using needles. With respect to the administration, the papers suggest that health workers, with minimal training, tend to administer injections more than doctors. These health workers (and sometimes even untrained health center aids) apparently have more to win in terms of status and income from administering the valuable, relatively complicated technologies.

The papers further suggest a high degree of 'indiginization' of injections — people use them in accordance with their own perceptions of efficacy and use. A common finding is that the efficacy of injections is related to the medicines being injected into the blood. In the discussion about the findings in Uganda, it is stressed that injections are also used early in the course of the illness to prevent the illness from becoming more serious. With respect to the risks of injections, abscesses are mentioned in all countries. In fact this side-effect of (unhygienically administered) injections diminishes the popularity of injections. The risk of getting an abscess is related to the person who injects. In Uganda,
one would rather be injected by someone whom one trusts (i.e. family, or relatives, or someone living in the community -- than by a health worker with whom one has no specific relationship) -- the rationale being that someone whom one knows is less likely to give an injection carelessly. Another factor that it was suggested plays a role in the choice of informal injection practitioners is the confidentiality provided by these in the treatment of sexually transmitted diseases. If one would go to the health center, then the patient would be required to inform his or her sexual partners of the STD.

The group discussion on the qualitative aspects of the studies resulted in the following list of additional points for the focus group discussions in the three countries:

1. Explore specific dimensions or circumstances of illnesses or cases requiring injections. Note experience of Uganda, where vomiting in malaria is "normal" but in other cases it is seen to require an injection. When is an injection seen as necessary?

2. Explore the settings. Would people prefer injections at home or in a health center? Why? Possible reasons could be perceptions of cleanliness, or confidentiality (as in the treatment of sexually transmitted diseases).

3. Try to elicit reactions to syringes, needles and dextrose infusions sets by having actual instruments in the focus group discussions.

4. Explore if there have been changes across time in the perception of injections. Are they generally becoming more/less popular? Are there changes in the kinds of injections that are preferred? Why? Interview older people, including older providers.

VI. FUTURE PLANS: UTILIZATION OF RESEARCH RESULTS

It was agreed that the research results will be used at the local level (in the districts where the data are collected), at the national level, and at the international level.

First preliminary reports will be written and sent to Hardon and Brudon-Jakobowicz for initial comments. After this, they will be revised.

It is proposed that the researchers will then discuss the draft final reports containing the main research findings and recommendations for action in a third informal workshop on injection practices research. A number of experts in the field of drug use research could be invited to review the reports to enhance their quality, and to ensure the appropriateness of the recommendations for action. It is suggested that one health official from each participating country be invited for the presentation of the main research findings and the recommendations for action at the end of the workshop -- this to facilitate implementation of the recommendations in health programmes of the Ministries of Health in the participating countries. This workshop could be held in August 1992.

The country reports will then be finalized and distributed in the countries, after which a two day national seminar will be organized to discuss the findings and recommendations for action with all concerned parties in the health sector, including WHO and UNICEF.
As a follow-up to this seminar, the researchers will participate in the development of information and education strategies for consumers and prescribers. The agency taking responsibility for this activity will differ per country. In Indonesia, a special department in the Ministry of Health could undertake this, if the appropriate use of injections would be defined as a programme of the Ministry of Health. In Uganda, these training and educational activities could be undertaken by the Essential Drugs Programme, and the Ugandan Red Cross. In Senegal AREAS, the agency conducting the research, could be responsible for the training and information activities.

Each country research team will submit a proposal for the action phase of the research to DAP/WHO, which will include the costs for the national seminar for policy makers, and the costs for the publication of the report. Additional funding for the information and education activities for prescribers and consumers is needed, if this cannot be provided for by national agencies such as the Ministry of Health or the national essential drugs programme.

VII. PLANNING

The following time frame was agreed upon for the finalization of the research projects:

1. Conduct of research
   November 1991 to March 1992

2. Analysis of data/
   Sending of preliminary
   reports to Hardon/Brudon
   April 1992 - June 1992

3. Distribution of
   draft final reports
   and writing of
   synthesis report.
   July 1992

4. 3rd Informal
    Workshop on Injection
    Practices Research

5. Action Phase
   September - December 1992
Appendix 1

Indicators developed during the 1st informal workshop

I. Prevalence of injection use

The following descriptive measures were agreed upon:

(Ia) The percentage of households (HHs) in which one or more injections were given in the past two weeks.

Expressed as:

Number of HHs in which at least one family member was administered an injection in the past two weeks

------------------------------------------------- x 100
Total number of HHs

(Ib) The percentage of HHs that received a specific type of injection in the past two weeks.

This can be calculated as above (a) with as numerator "the number of households in which at least one family member was administered a specific type of injection in the past two weeks". As specific types of injections the group identified the following categories:

* therapeutic injections
* infusions (large volumes)
* contraceptives
* immunizations

(Ic) The percentage of people in a certain age category of the study population\(^3\) who have received at least one injection in the past two weeks.

Expressed as:

Number of people in a specific age category of the study population who have received at least one injection in the past two weeks

------------------------------------------------- x 100
Total number of people in specific age category of the study population

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\(^3\) Defined as all members of all households that are included in the study.
As age categories the researchers decided to use the following:

0 - 4 years of age
5 - 14 years of age
15 years and up.

(Id) The percentage of females and the percentage of males in the study population who received at least one injection in the past two weeks.

This is calculated as in (c).

(Ie) Frequency of injection administration per health facility. A simple frequency distribution can be made listing how often certain health facilities are reported as source of the injections in the study population. Health facilities can be categorized into:

* Government facilities
* Private facilities
* Non-formal facilities
* Homes.

This calculation can be done for the injections reported in the two-week recalls, and for the injections reported in the additional questions "when was the last time that you received an injection".

(If) Percentage of patients at a certain health facility who received at least one injection, expressed as:

Number of patients receiving at least one injection during a predetermined observation period
--------------------------------------------- x 100
Total number of patients visiting the health facility during the observation period

Or, if the team decides not to interview patients at health facilities, a similar measure can be made based on an analysis of prescriptions:
Percentage of prescriptions at a certain health facility that list at least one injection, expressed as:

Number of prescriptions written in a certain observation period containing at least one injection
----------------------------------------------- x 100
Total number of prescriptions written in the given observation period

II. Evaluation of the appropriateness of injection use

(IIa) Percentage of injection use in certain tracer conditions.

Expressed as:

Number of times that a certain tracer condition was treated with an injection in the study population
----------------------------------------------- x 100
Total number of times that the tracer conditions were reported in the two week recalls in the given study population

This measure can be calculated for the following types of medication:

* injection only
* oral medication only
* injection and oral medication
* other medication

in order to contrast the percentage of injection use with that of oral and other medications.

(IIb) Percentage of injection use in "hypothetical" tracer conditions. In addition to the calculation of injection use prevalence based on the two week recalls it is advisable to present mothers with hypothetical cases (covering the identified tracer conditions), and asking them what they would do if this condition occurred.
The measure is then expressed as:

Number of times an injection was reported as therapy for the “hypothetical illness case”

\[ \frac{\text{Total number of respondents that participated in the interview}}{100} \]

As was pointed out in IIa, this measure can be calculated for the following types of medication:

* injection only
* oral medication only
* injection and oral medication
* other medication

in order to contrast the percentage of injection use with that of oral and other medications.

(IIC) If prescription patterns of providers are monitored, then the percentage of injection prescription in the specified tracer conditions can also be calculated.

(IID) Frequency distribution of types of injections given per tracer condition. The injections can be categorized by generic and by brand name.

(IIE) Percentage of providers who do not observe minimal hygienic standards before administering an injection.

Expressed as:

\[ \frac{\text{Number of providers who do not follow minimal hygienic standards}}{\text{Total number of providers who were interviewed}} \times 100 \]

(IIF) Percentage of providers who do not observe minimal hygienic standards during administration of an injection.

This can be calculated as in (IIE)

(IIG) Percentage of providers who do not observe minimal hygienic measures after administration.

The measures IIE-g can be calculated for the various types of injection providers.
The following categories of providers were put forward:

* trained physicians
* nurse/midwife/allied health professional
* person with no formal training

It was stressed that the above are minimal measures that should be used in all the country studies. The categories (types of injections, age categories, types of providers etc.) that are proposed should be used as a basis for the study, while country specific sub-categorization can be made. It is essential that these measures are followed as otherwise the comparative aspects of the study are compromised.

It is also recognized that many of the measures are rough. The prevalence of injection use by age and sex, for example, is not a population based estimate, as the study covers only families with pre-school children. Also the percentage of households using injections is a rough measure since average HH size will differ from country to country. This will have to be considered during the comparative analysis phase of the research. However the researchers and resource persons agreed that for the given aims of the study the above measures are accurate enough.
Appendix 2

Revised/simplified guidelines for evaluating the hygienic aspects of injections
(to be adapted to national standards)

1. What injection equipment is used?
   a. If disposable equipment is used, is it still in its original sterile pack?
   b. If sterilizable glass syringe and needle is used, are these taken from sterile containers?

2. Are correct techniques used to successfully sterilize or disinfect the equipment?
   a. Are syringes and needles flushed with water after use and before sterilization?
   b. Are both needles and syringes sterilized?
   c. If steam sterilization is used, is the temperature correct (121 °C), and the time long enough (15 minutes)?
   d. If the equipment is boiled, is there at least 20 minutes from the time the last piece of contaminated equipment is placed in the boiling water?
   e. If neither steam sterilization nor boiling is used, is there another form of sterilization used. Please describe:

3. Is the injection administered hygienically:
   a. Can anything not in an aseptic condition contaminate the injection fluid?
   b. Does the person injecting touch the needle with his fingers?
   c. Does the needle come in contact with any other non-aseptic surface before being used?
   d. Are several patients injected with the same needle?
   e. Are several patients injected with the same syringe (even if the needle is changed)?

4. Is the injection equipment stored appropriately after use:
   a. Are disposable syringes and needles placed into a final disposal container?
   b. Are disposable needles recapped before disposal?
   c. Are disposable syringes and needles disposed of (and not re-used)?
   d. Are sterilizable syringes and needles flushed with water after use?
Appendix 3

Papers on injections presented at the 1st International Conference on Social and Cultural Aspects of Pharmaceuticals
Amsterdam, October 1991


Appendix 4

2nd Informal Workshop on Injection Practices Research:
Participants and agenda

1. Participants in the workshop

- Rudy Salan (Indonesia team)
- Harriet Birungi (Uganda team)
- Ludovic d’Almeida (Senegal team)
- Pascale Brudon-Jakobowicz (DAP/WHO)
- Michael Tan (resource person, Philippines)
- Susan Whyte (resource person, University of Copenhagen)
- Anne Reeler (researcher, Thailand)
- Anita Hardon (coordinator, technical support, University of Amsterdam)

2. Agenda

Monday, October 21

11.00 Meeting Session 1: Introduction
   Revision of agenda
   Brief status report from Indonesia,
   Uganda and Senegal

12.00 Lunch (possibility to discuss administrative and budgetary aspects of research projects with
     Pascale Brudon-Jakobowicz)

14.00 The results of the quantitative surveys: preliminary findings
   * Uganda
   * Senegal
   * Indonesia
   The results are discussed, as far as possible using the common indicators and methods
developed in Geneva last year (May 1990)

15.30 Tea

15.45 Planning future stages of the research, definition of tasks (Country teams, WHO, University of
    Amsterdam)

16.30 Free
Tuesday, October 22

09.30  Indicators and measures: discussion based on the country experiences in using them; proposals for revision

11.00  Coffee

11.15  Qualitative studies: preliminary results (using themes discussed in Geneva May 1990 as a guide); reflection on comments made during the preceding Conference on Social and Cultural Aspects of Pharmaceuticals

12.30  Lunch

13.30  Qualitative studies: where are we now, and what do we still need to do?

14.15  From research to practice: what are the implications of our preliminary findings for essential drugs and health programmes; what are plans for utilizing the results?

15.30  Tea

15.45  Planning, the 2nd research and action phase.

16.30  Closing