
Chapter 2

Materials and Methods of the AP Health State Valuation Study 1999

In this chapter, we present an overview of the study methodology. We first describe the study design followed by a description of our approach to select indicator conditions for the study. The methods and materials used to describe the health states for valuation are described in chapter three, titled "The 6D5L description system for health state valuation". Chapter four describes the multi-method deliberative health state valuation workshops. Chapter five describes methodological details about the community survey. Ideally chapters three to five should have been included here, since together they describe the study method. We decided to present them in separate chapters since some aspects of study method needed more detailed treatment. For example, development of the health state description system needed substantial efforts to facilitate its use in partially literate communities.

Study design:

The study has two arms, namely; (a) the multi method deliberative health state valuation (MDHSV) workshops, and (b) community survey. The MDHSV arm of the study is meant to test validity of community survey instrument. The MDHSV workshops allows for valuations using multiple instrument. Only educated persons are chosen as participants to facilitate communication of written guidelines about each of the valuation methods. We thought, this way, we can use the workshop format in the group with higher educational attainment to perform the more demanding cognitive tasks. This will allow us to check for convergent validity of the measurements in general population with results from the multi method deliberative workshops. The community survey arm of the study was designed to obtain valuations for different health states from a community. These valuations would be the basis of disability weights to be used for computation of disease burden in the local area. In

in poor validity and reliability of the measurements. A practical alternative is to use small set of conditions to measure peoples preference and then statistically infer the health state values for other states. The small set of conditions used to gather measurements on peoples valuation of health states is referred to as index health states or synonymously indicator conditions.

Criteria for selection of indicator conditions:

Following principles were considered by us for choice of index health states:

1. The number of health states presented to a single valuer, should be kept within manageable limits to minimise incidence of cognitive overload. This limit is a function of human attention span and cognitive behaviour, and is independent of sample size. Parts of the health state valuation exercise, require the valuer to deliberate about all health states at hand and assign values to each. This limit is all the more significant for population based surveys, where multiple sessions would not usually be feasible. Gudex and others (1996) limited the number of health states per valuer to 15, for a population based survey in UK. Sackett and Torrance included 10 health states for their population bases survey in Hamilton, Otario Canada (Sackett and Torrance, 1978). The EuroQol group (Brooks, 1996) found, it was feasible for a person to value about 12-16 health states using the EuroQol instrument. We fixed a limit of 11 health states including own health state, to be valued by a person in one session.
2. The set of index health states should represent widest range of health state profiles. This will allow statistical inference of health state weights for conditions for which no direct measurement is available. Hence it is important that set of indicator conditions maximise the independent variation in each dimension of health status. The need to maximise independent variation along each dimension and the constraint imposed by ability of valuers to deal with a number of conditions, are counter to each other. Since the limit on number of health states for valuation by an individual is fixed on psychometric grounds, the only scope to increase variation in dimensions of health status is to increase sample size and present different sets of conditions to different persons.
3. Comparability and linkage between different health states would require that some health states be common for all valuation sets. We call this core health states.
4. Inclusion of a few pairs of dominating and dominated health state will facilitate inference about validity of the measurement protocol. A state that is unequivocally worse than another state in at least one dimension and at most equivalent in all others is considered a dominated condition. One that is unequivocally better than another state in at least one dimension, and at the least, equivalent in all is considered a dominating condition. Examples of dominating

investigators at IHS and study coordinators at WHO-GPE. Sets were systematically assigned to balance assignment of valuers to different sets of health states.

Mid way through the study and before the household survey started, it was decided to replace two health states, namely common cold, and moderate anaemia with two relatively more severe conditions to improve the spread of health states under study. Common cold and moderate anaemia were replaced by hallucinatory fever and two broken arms in cast. As a result, multiple valuation workshops ended up valuing altogether 24 health states, while the number of health states valued through the survey remained at 22. Set numbers 5 and 6 has been created to accommodate the mid course change. Thus set 5 shares some health states with set 2 and set 6 shares some health states with set 3. Set 5 has common cold, instead of severe hallucinatory fever and set 3 has moderate anaemia instead of broken arms with cast. We first planned do the survey with four sets (1-4). But during the course of implementation, some interviewers by mistake mixed up one or two conditions from other sets. In these cases the valuers worked on 11 health states including his / her own health state. But the conditions did not conform to the pre assigned sets. To distinguish these valuations from the rest, we assigned new set numbers to them. Thus set numbers 7 to 35 refer to these cases. Every other aspect of valuation method for these cases are same as other valuations. There are 29 such valuers in the data set with Set = [7 to 35].

Table - 2.1: Assignment of sets of health states to valuers

Set	Survey	Workshop
1	269	45
2	247	31
3	247	30
4	218	45
5		14
6		15
7 to 34	29	0
All	1,010	180

In summary sets 1 to 4 are the primary sets of conditions used for the household survey and the workshops. Sets 5 and 6 were used for a few workshops in the beginning. Sets

Each valuer was presented with 10 health states plus his / her own health state for valuation. Potentially, there can be as many own health today profiles as there are valuers, limited by 15625^1 which is the maximum number of permutations of severity levels in the six dimensions. In practice, there would be a smaller number of unique own health today profiles, since many valuers would report the same own health state profiles. Examination of data from this study reveals that 292 unique own health state profiles were reported by valuers. Of these, 6D5L profiles chosen by 10 or more valuers are shown in the Table-2.3.

Table-2.3: Frequently reported own health today profiles

6D5L	Survey		Workshop		Both	
	#	Cum	#	Cum	#	Cum
111111	333	33%	93	52%	414	35%
111211	60	39%	13	59%	69	41%
111121	35	42%	18	69%	52	45%
111221	39	46%	9	74%	46	49%
111222	22	48%		74%	22	51%
111112	21	50%		74%	21	52%
112111	11	52%	9	79%	20	54%
112211	11	53%	3	81%	14	55%
112222	13	54%	1	81%	14	56%
222222	13	55%		81%	13	58%
112121	9	56%	5	84%	13	59%
111122	12	57%		84%	12	60%
112221	3	58%	8	88%	11	61%
111212	10	59%		88%	10	61%
All	1010	100%	180	100%	1190	100%

APHSV99 Data Set:

Data collected through this study is made available in electronic format to facilitate further study and analysis by interested researchers. Explanatory notes about the data set is provided in Appendix-2.

¹ Since there are 5 possible levels in each dimension and there are 6 dimensions altogether, the number of permutations works out to $5^6 = 15625$.