potential values. RESULTS: Frequency distribution of the EQ5D
dice was tri-modal and difficult to describe in summary sta-
tistics. In all, 27 possible values (11%) were responsible for 92%
of all observations, 14 possible values had no observations, and
24.7% of returns had an EQ5D
dice of 1.0. There are a number of
categories that are rarely used e.g., severe mobility problems
and severe self care problems. There was a close correlation
between weighted scale and simple addition of responses (R² =
0.87). There were 6.8% of responses with an EQ-5D
dice ≤0.0. There was a low correlation between the EQ5D
dice with the general health question of the SF36 and the arbitrary, continu-
ous valuation of health status above. The ranking of mean
estimates was intuitively correct. CONCLUSIONS: The number
of theoretical values that are represented was sparse. The EQ-
5D
dice distribution results in no easily describable parametric distribution, and the correlation with other general health mea-
sures was low. Given that these subjects are hospital treated, too
many may have a health status of 1.0, and too many are also in a
health status notionally equal to or worse than death. Deci-
sions based on the EQ5D
dice now have enormous health and commercial implications. The EQ5D
classifies the right health factors but the sensitivity and scoring methods need urgent reval-
uation: good but needs improving.

HEALTH UTILITIES INDEX (HUI) ON-LINE QUESTIONNAIRE
SYSTEM: CRITERION VALIDITY OF MULTI- AND
SINGLE-ATTRIBUTE UTILITY SCORES
Hunter D, Furlong W, Horsman JR
McMaster University, Hamilton, ON, Canada
OBJECTIVES: To assess the criterion validity of HUI Mark 2
(HUI2) and Mark 3 (HUI3) utility scores from a new, central-
ized on-line questionnaire administration system. METHODS:
The system presents HUI questionnaires to patients and provides
results to clinicians by email. Questionnaire results include
responses and 32 derived variables (14 attribute levels; two
overall health state vectors; 14 single-attribute utility scores; and
two multi-attribute utility scores of health-related quality of life
(HRQL)). SPSS code, validated to Health Utilities Inc. decision
tables for determining attribute levels and published utility func-
tions, is the criterion method for determining HUI derived vari-
ables. Testing used a data set that included questionnaire
response combinations for all HUI2 and HUI3 attribute levels.
Criterion validity was evaluated using percent exact agreement,
and single-measure intra-class correlation coefficients (ICC),
between scores from the new system and scores from the crite-
ron method. RESULTS: The test data set generated 240 utility
scores. There was exact agreement for 99.2% (n = 238) of the
scores. Disagreement was limited to HUI2 sensation (ICC =
0.803, p < 0.01), and HUI2 overall HRQL (ICC = 0.966, p <
0.01), scores in one test case. Results were received by email from
the on-line system within approximately one minute of com-
pleting each questionnaire. There were no missing or incomplete
questionnaire data from the on-line system. CONCLUSION:
The results indicate that most of the utility scores from the new
on-line questionnaire system have criterion validity and
there is a problem with the coding algorithm for at least one
set of questionnaire response combinations associated with
HUI2 sensation. The coding problem should be corrected,
and more rigorous testing should be completed, before public
release of the system. The system should be considered an alter-
native to traditional methods for future HUI data collection,
especially for applications requiring immediate results such as
clinical settings.

IMPROVING THE SCALING PROPERTIES OF THE
PSYCHOLOGICAL GENERAL WELL-BEING SCALE (PGWB)
McKenna SP, Meads DM, Doward LC, Tennant A
1Galen Research, Manchester, UK; 2University of Leeds, Leeds, UK
OBJECTIVES: To apply item response theory (IRT) to PGWB
data to determine whether the instrument provides unidimen-
sional assessment of well-being; identify a revised version of the
measure. METHODS: The PGWB is a widely used patient-
completed generic measure of well-being that, to date, has not
been subjected to item response theory (IRT) assessment. The UK
version of the PGWB was used. It consists of 22 items, each with
five response options. The measure was completed by two
patient groups, 103 patients with rheumatoid arthritis and 96
with adult growth hormone deficiency. Data were subjected to
Rasch Analysis using RUMM 2010. RESULTS: Analysis
revealed problems with the five option scoring system for four
of the items. Three methods of analysis were followed to obtain
the best fit of data: 1) rescoring of disordered items and deletion
of any further misfitting items; 2) collapsing response options
into three categories and rescoring further misfitting items; and
3) deletion of disordered items and any further misfitting items.
The first approach gave the best fit of the data to the Rasch
model in terms of overall and individual item fit and person-item
separation. Three other items were then removed due to poor
item fit. Subsequently, fit to the Rasch model was good, in terms
of overall Item-Trait Interaction (Chi² = 128.87, df = 95, p =
0.001), Item Fit (mean = 0.156, SD = 1.592), Person Fit (mean =
-0.294, SD = 1.297) and person Separation Index (0.955).
CONCLUSION: Application of Rasch analysis to PGWB data
identified a new version of the instrument consisting of 19 items
with good scaling properties. Use of the new version would
improve the accuracy with which well-being is assessed in clini-
cal studies. It is recommended that the new version is tested with
other disease groups to determine whether the scaling properties
are maintained.

RELATIONSHIP BETWEEN PATIENT SATISFACTION AND
PERCEIVED HEALTH STATUS
Xiao H
Florida A&M University, Tallahassee, FL, USA
OBJECTIVE: To examine the relationship between patient sat-
sification with access to care and their perceived health status.
METHODS: Information on patient satisfaction with access to
care and perceived health status along with their demographics
was extracted for people 35–64 years of age, from the House-
hold Component of 1999 Medical Expenditure Panel Survey.
Descriptive statistics were used to illustrate the characteristics
of the study population. Multiple regression analysis was applied
to examine the relationship between patient satisfaction and
their self-rated health status controlling for age, gender, race,
marital status and education level. All analyses used STATA 8.0
which is designed to analyze weighted data. RESULTS: A total
of 8746 patients met the study inclusion criteria and were
included in the study. Of these patients, 53% were females,
69.3% were married and 82% were Caucasian. The majority
(44.9%) had a high school diploma and 14.5%, 6.9% and 1.7%
held BS, MS and Ph.D. degrees, respectively. Patients who rated
their health better scored higher in their satisfaction with access
to care. In addition, higher satisfaction was found in patients
with the following characteristics: being older, female, Eskimo,
moved with and with higher education. Asian and Hispanic patients
scored lower in satisfaction than Caucasian patients. CON-