Abstract
A multidimensional health assessment questionnaire (MD-HAQ) can enhance doctor-patient communication beyond the important function of providing RAPID3 scores, preparing the patient for the encounter and saving time for the doctor. Optimal use of the MDHAQ should include the following actions: 1. the MDHAQ should be distributed to each patient at each visit in the infrastructure of care; 2. the MDHAQ helps the patient prepare for the visit by completing it in the waiting area prior to seeing the physician; 3. the clinician prepares for the visit and saves time by reviewing the MDHAQ before seeing the patient; 4. the clinician scans the review of systems and records the number of positives on the symptom checklist; 5. the clinician reviews the recent medical history information to save time and improve accuracy and completeness of critical information; and 6. routine Assessment of Patient Index Data 3 (RAPID3) scores are recorded in the medical record and entered into a flowsheet, which also includes other MDHAQ scores, laboratory tests, and medications.

A patient history generally is recorded in a narrative, non-standard format as “subjective” information, in contrast to quantitative “objective” data, such as laboratory tests, which are collected according to a standard protocol. Therefore, the primary quantitative data in the medical record of most patients are results of laboratory tests, which frequently are not available at the visit and may be uninformative.\textsuperscript{1,2} Estimates of changes in patient status over long periods in rheumatic diseases generally are based on relatively crude descriptive estimates rather than quantitative data, despite the fact that the patient history often provides the most important information for management in many chronic diseases.\textsuperscript{3-6}

Extensive research over several decades indicates that patient history information can be recorded as quantitative data in a standard “scientific” format as scores on a patient self-report questionnaire.\textsuperscript{7} In patients with rheumatic diseases, questionnaire scores often are as informative as most laboratory tests, with much lower costs.\textsuperscript{8,9} Scores on a health assessment questionnaire (HAQ)\textsuperscript{10} distinguish active from control treatments in clinical trials of methotrexate,\textsuperscript{11,12} leflunomide,\textsuperscript{11,12} adalimumab,\textsuperscript{13} and abatacept\textsuperscript{14} as effectively as laboratory tests or formal joint counts. Patient questionnaire scores for physical function are far more significant than laboratory tests or radiographs to predict severe RA outcomes of work disability or premature death.\textsuperscript{8,9,15}

Despite the established value of patient questionnaire scores to document critical medical history information, the basic format of a standard rheumatology encounter has not changed substantially over the last 40 years. Of course, new laboratory tests and medications have been introduced, and the electronic medical record (EMR) may suggest advances in documentation of patient status and changes over time. However, while the EMR may include complete information concerning laboratory tests, scheduling, billing, and medications, it generally does not include quantitative clinical data to help a physician recognize whether a patient may be better, the same, or worse than at previous visits, particularly over long periods.

A multidimensional health assessment questionnaire

Beyond RAPID3
Practical Use of the MDHAQ to Improve Doctor-Patient Communication


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(MDHAQ)\textsuperscript{16-18} has been developed from the HAQ\textsuperscript{19} over the
years in usual clinical care to provide quantitative medical
history data for clinical decisions and patient monitoring.
The HAQ and MDHAQ include the three RA Core Data Set
patient self-report measures for physical function, pain, and
patient global estimate of status.\textsuperscript{20} The MDHAQ queries 10
activities (rather than 20, as in the HAQ) for a physical func-
tion score of 0-3 or 0-10, with scoring templates for a health
professional to record a 0-10 score. Visual analog scales
(VAS) for pain and patient global estimate of status are pre-
sent in a 21-circle rather than 10-cm line format, eliminat-
ing the need for a ruler and exact photo-reproduction.\textsuperscript{20} The three scores for physical function, pain, and patient global
estimate of status, each scored 0-10, may be calculated in
an index termed Routine Assessment of Patient Index Data
3 (RAPID3).\textsuperscript{8,14,21,22}

RAPID3 has been found to be informative in clinical tri-
als\textsuperscript{14} and clinical care,\textsuperscript{21} comparable to indices that include
a formal joint count, such as the traditional Disease Activity
Score (DAS28)\textsuperscript{23,24} or Clinical Disease Activity Index
(CDAI).\textsuperscript{25} However, a formal joint count is not performed
at most patient visits\textsuperscript{26} and is associated with many limita-
tions as a measure.\textsuperscript{7} Categories to classify patients as hav-
ing high, moderate, and low disease severity and remission
according to RAPID3 yield similar results to categories for
disease activity according to the DAS28 or CDAI.\textsuperscript{21} (Patient
questionnaire categories represent “severity” rather than “ac-
tivity,” as a questionnaire score is inclusive of both activity
and damage.\textsuperscript{21,28}) Calculation of RAPID3 requires about 5
seconds, compared to about 40 seconds for a HAQ (without
an index) or 105-110 seconds for a DAS28 or CDAI, includ-
ing 90-95 seconds for a formal joint count.\textsuperscript{20}

Recent interest in RAPID3 in usual clinical care settings
has led some rheumatology sites to develop versions of
the MDHAQ that include only the three components of a
RAPID3 score (physical function, pain, and patient global
estimate of status). This practice may reflect an impression
that RAPID3 is the only useful feature of the MDHAQ for
clinical care. The authors would discourage deletion of other
components of the MDHAQ, which may add considerably
to doctor-patient communication, helping to prepare the
patient for the encounter, and saving time for the physician.

The MDHAQ does not replace any traditional compo-
nent of the usual medical encounter, including the nar-
rative history from discussion with the patient and a physical
examination, particularly a careful joint examination in a
rheumatology setting. Indeed, the MDHAQ adds to the usual
encounter by providing factual information more efficiently
than in conversation, allowing time for enhanced discussion
of details and nuances concerning the patient’s problems.
In general, patient self-report is as accurate as information
obtained by a health professional. Patients usually give
more candid responses concerning poor function or pain
on a neutral piece of paper or computer screen than when
speaking to a physician or other health professional,\textsuperscript{20} as
they often like to please their doctors with falsely positive

verbal responses.

Most questionnaire data usually confirm clinical impres-
sions, as is the case with most laboratory tests and radio-
graphs. However, documentation as quantitative data adds
important precision to clinical estimates and establishes
a baseline for future observations, to assess responses to
therapy. Advantages of quantitative versus narrative data may
be seen in differences between a comment that “it is hot”
compared to “the ambient temperature is, say, 80\textdegree, 90\textdegree,
or 100\textdegree F (or 27\textdegree, 33\textdegree, or 38\textdegree C),” or that a “bottle of wine is
expensive” versus “this bottle costs $60, $600, or $6,000.”

Of course, quantitative questionnaire scores require inter-
pretation by a knowledgeable and caring clinician, as well
as integration into a totality of information from a narrative
history, physical examination, laboratory tests, and ancillary
studies for management decisions.

Page 1 of the MDHAQ (Fig. 1A) includes, in addition
to the three patient-reported RA Core Data Set measures
that comprise a RAPID3 score, queries concerning sleep,
anxiety, and depression in the patient-friendly HAQ format,
and a Rheumatoid Arthritis Disease Activity Index (RADA1)
self-report joint count.\textsuperscript{20} Page 2 of the MDHAQ (Fig. 1B)
includes a review of systems symptom checklist, recent
medical history, fatigue VAS, and queries about morning
stiffness, change in global status, and exercise frequency,
as well as demographic data.

This essay updates a description of the MDHAQ\textsuperscript{17,19,22,31,32}
beyond the important function of providing RAPID3
scores.\textsuperscript{33,34} We suggest that the MDHAQ can enhance
doctor-patient communication, both saving time for doctors
and improving outcomes for patients, based on a series of actions
(Table 1).

1. The MDHAQ Should be Distributed to Each
Patient at Each Visit in the Infrastructure of
Care

The simplest strategy to ensure that a patient completes an
MDHAQ is for the receptionist to give the questionnaire

<table>
<thead>
<tr>
<th>Table 1</th>
<th>Actions to Maximize Benefits of MDHAQ in Usual Clinical Care Settings</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. The MDHAQ should be distributed to each patient at each visit in the infrastructure of care</td>
<td></td>
</tr>
<tr>
<td>2. The MDHAQ helps the patient prepare for the visit by completing it in the waiting area prior to seeing the physician</td>
<td></td>
</tr>
<tr>
<td>3. The clinician prepares for the visit and saves time by reviewing the MDHAQ before seeing the patient</td>
<td></td>
</tr>
<tr>
<td>4. The clinician scans the review of systems and records the number of positives on the symptom checklist</td>
<td></td>
</tr>
<tr>
<td>5. The clinician reviews the recent medical history information to save time and improve accuracy and completeness of critical information</td>
<td></td>
</tr>
<tr>
<td>6. RAPID3 scores are recorded in the medical record and entered into a flowsheet, which also includes other MDHAQ scores, laboratory tests, and medications</td>
<td></td>
</tr>
</tbody>
</table>
Multi-Dimensional Health Assessment Questionnaire (R808-NP2)

This questionnaire includes information not available from blood tests, X-rays, or any source other than you. Please try to answer each question, even if you do not think it is related to you at this time. Try to complete as much as you can yourself, but if you need help, please ask. There are no right or wrong answers. Please answer exactly as you think or feel. Thank you.

1. Please check (✓) the ONE best answer for your abilities at this time:

**OVER THE LAST WEEK, were you able to:**

<table>
<thead>
<tr>
<th></th>
<th>Without ANY Difficulty</th>
<th>With SOME Difficulty</th>
<th>With MUCH Difficulty</th>
<th>UNABLE To Do</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Dress yourself, including tying shoelaces and doing buttons?</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>b. Get in and out of bed?</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>c. Lift a full cup or glass to your mouth?</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>d. Walk outdoors on flat ground?</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>e. Wash and dry your entire body?</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>f. Bend down to pick up clothing from the floor?</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>g. Turn regular faucets on and off?</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>h. Get in and out of a car, bus, train, or airplane?</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>i. Walk two miles or three kilometers, if you wish?</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>j. Participate in recreational activities and sports as you would like, if you wish?</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>k. Get a good night’s sleep?</td>
<td>0</td>
<td>1.1</td>
<td>2.2</td>
<td>3.3</td>
</tr>
<tr>
<td>l. Deal with feelings of anxiety or being nervous?</td>
<td>0</td>
<td>1.1</td>
<td>2.2</td>
<td>3.3</td>
</tr>
<tr>
<td>m. Deal with feelings of depression or feeling blue?</td>
<td>0</td>
<td>1.1</td>
<td>2.2</td>
<td>3.3</td>
</tr>
</tbody>
</table>

2. How much pain have you had because of your condition OVER THE PAST WEEK?

Please indicate below how severe your pain has been:

<table>
<thead>
<tr>
<th></th>
<th>0</th>
<th>0.5</th>
<th>1.0</th>
<th>1.5</th>
<th>2.0</th>
<th>2.5</th>
<th>3.0</th>
<th>3.5</th>
<th>4.0</th>
<th>4.5</th>
<th>5.0</th>
<th>5.5</th>
<th>6.0</th>
<th>6.5</th>
<th>7.0</th>
<th>7.5</th>
<th>8.0</th>
<th>8.5</th>
<th>9.0</th>
<th>9.5</th>
<th>10</th>
</tr>
</thead>
<tbody>
<tr>
<td>PAIN AS BAD AS IT COULD BE</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
</tr>
</tbody>
</table>

3. Please place a check (✓) in the appropriate spot to indicate the amount of pain you are having today in each of the joint areas listed below:

<table>
<thead>
<tr>
<th></th>
<th>None</th>
<th>Mild</th>
<th>Moderate</th>
<th>Severe</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. LEFT FINGERS</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>b. LEFT WRIST</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>c. LEFT ELBOW</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>d. LEFT SHOULDER</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>e. LEFT HIP</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>f. LEFT KNEE</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>g. LEFT ANKLE</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>h. LEFT TOES</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>g. NECK</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
</tbody>
</table>

4. Considering all the ways in which illness and health conditions may affect you at this time, please indicate below how you are doing:

<table>
<thead>
<tr>
<th></th>
<th>0</th>
<th>0.5</th>
<th>1.0</th>
<th>1.5</th>
<th>2.0</th>
<th>2.5</th>
<th>3.0</th>
<th>3.5</th>
<th>4.0</th>
<th>4.5</th>
<th>5.0</th>
<th>5.5</th>
<th>6.0</th>
<th>6.5</th>
<th>7.0</th>
<th>7.5</th>
<th>8.0</th>
<th>8.5</th>
<th>9.0</th>
<th>9.5</th>
<th>10</th>
</tr>
</thead>
<tbody>
<tr>
<td>VERY</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
</tr>
<tr>
<td>WELL</td>
<td>0</td>
<td>0.5</td>
<td>1.0</td>
<td>1.5</td>
<td>2.0</td>
<td>2.5</td>
<td>3.0</td>
<td>3.5</td>
<td>4.0</td>
<td>4.5</td>
<td>5.0</td>
<td>5.5</td>
<td>6.0</td>
<td>6.5</td>
<td>7.0</td>
<td>7.5</td>
<td>8.0</td>
<td>8.5</td>
<td>9.0</td>
<td>9.5</td>
<td>10</td>
</tr>
</tbody>
</table>

Please turn to the other side

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**Figure 1A** Multidimensional health assessment questionnaire (MDHAQ). The front page includes 10 activities for function, two visual analog scales (VAS) for pain and patient global estimate of status, and a self-report joint count from a rheumatoid arthritis disease activity index (RADAI). Scoring templates for these measures are available on the right-hand side of the page. An index of the three patient-reported measures, routine assessment of patient index data (RAPID3), can be calculated from an MDHAQ in fewer than 10 seconds.
5. Please check (✓) if you have experienced any of the following over the last month:

<table>
<thead>
<tr>
<th>Symptom</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fever</td>
<td>Lump in your throat</td>
</tr>
<tr>
<td>Weight gain (&gt;10 lbs)</td>
<td>Cough</td>
</tr>
<tr>
<td>Weight loss (&gt;10 lbs)</td>
<td>Shortness of breath</td>
</tr>
<tr>
<td>Feeling sickly</td>
<td>Wheezing</td>
</tr>
<tr>
<td>Headaches</td>
<td>Pain in the chest</td>
</tr>
<tr>
<td>Unusual fatigue</td>
<td>Heart pounding (palpitations)</td>
</tr>
<tr>
<td>Swollen glands</td>
<td>Trouble swallowing</td>
</tr>
<tr>
<td>Loss of appetite</td>
<td>Heartburn or stomach gas</td>
</tr>
<tr>
<td>Skin rash or hives</td>
<td>Stomach pain or cramps</td>
</tr>
<tr>
<td>Unusual bruising or bleeding</td>
<td>Nausea</td>
</tr>
<tr>
<td>Other skin problems</td>
<td>Vomiting</td>
</tr>
<tr>
<td>Loss of hair</td>
<td>Constipation</td>
</tr>
<tr>
<td>Dry eyes</td>
<td>Diarrhea</td>
</tr>
<tr>
<td>Other eye problems</td>
<td>Dark or bloody stools</td>
</tr>
<tr>
<td>Problems with hearing</td>
<td>Problems with urination</td>
</tr>
<tr>
<td>Ringing in the ears</td>
<td>Gynecological (female) problems</td>
</tr>
<tr>
<td>Stuffy nose</td>
<td>Dizziness</td>
</tr>
<tr>
<td>Sores in the mouth</td>
<td>Losing your balance</td>
</tr>
<tr>
<td>Dry mouth</td>
<td>Muscle pain, aches, or cramps</td>
</tr>
<tr>
<td>Problems with smell or taste</td>
<td>Muscle weakness</td>
</tr>
</tbody>
</table>

Please check (✓) here if you have had none of the above over the last month: _____.

6. When you awakened in the morning OVER THE LAST WEEK, did you feel stiff? □ No □ Yes
If "No," please go to Item 7. If "Yes," please indicate the number of minutes _______ or hours _______
until you are as limber as you will be for the day.

7. How do you feel TODAY compared to ONE WEEK AGO? Please check (✓) only one.
   Much Better □ (1), Better □ (2), the Same □ (3), Worse □ (4), Much Worse □ (5) than one week ago

8. How often do you exercise aerobically (sweating, increased heart rate, shortness of breath) for at least
   one-half hour (30 minutes)? Please check (✓) only one.
   □ 3 or more times a week (3) □ 1-2 times per month (1)
   □ 1-2 times per week (2) □ Do not exercise regularly (0) □ Cannot exercise due to disability/ handicap (9)

9. How much of a problem has UNUSUAL fatigue or tiredness been for you OVER THE PAST WEEK?
   FATIGUE IS □ No □ 0 □ 0.5 □ 1.0 □ 1.5 □ 2.0 □ 2.5 □ 3.0 □ 3.5 □ 4.0 □ 4.5 □ 5.0 □ 5.5 □ 6.0 □ 6.5 □ 7.0 □ 7.5 □ 8.0 □ 8.5 □ 9.0 □ 9.5 □ 10
   MAJOR PROBLEM

10. Over the last 6 months have you had: [Please check (✓)]
    □ No □ Yes An operation or new illness □ No □ Yes Change(s) of arthritis or other medication
    □ No □ Yes Medical emergency or stay overnight in hospital □ No □ Yes Change(s) of address
    □ No □ Yes A fall, broken bone, or other accident or trauma □ No □ Yes Change(s) of marital status
    □ No □ Yes An important new symptom or medical problem □ No □ Yes Change job or work duties, quit work, retired
    □ No □ Yes Side effect(s) of any medication or drug □ No □ Yes Change of medical insurance, Medicare, etc.
    □ No □ Yes Smoke cigarettes regularly □ No □ Yes Change of primary care or other doctor

Please explain any "Yes" answer below, or indicate any other health matter that affects you:

SEX: □ Female, □ Male ETHNIC GROUP: □ Asian, □ Black, □ Hispanic, □ White, □ Other

Your Occupation □ Please circle the number of years of school you have completed:
   □ Full-time, □ Part-time, □ Disabled 1 2 3 4 5 6 7 8 9 10
   □ Homemaker, □ Self-Employed, □ Retired, 11 12 13 14 15 16 17 18 19 20
   □ Seeking work, □ Other

Please write your weight: _____ lbs. height: _____ inches

Your Name ___________________________ Date of Birth ____________ Today’s Date ____________

Page 2 of 2  Thank you for completing this questionnaire to keep track of your medical care. R808NP2

FOR OFFICE USE ONLY: I have reviewed the questionnaire responses. Date: ____________________________
Signature: ____________________________

Figure 1B Multidimensional health assessment questionnaire (MDHAQ). The reverse side includes a review of systems, fatigue visual analog scale (VAS), recent medical history, queries about change in global status and frequency of exercise, and demographic data (not included in scoring, but providing useful data in clinical care).
to each patient at each visit to the rheumatologist and for the clinician to review the questionnaire before seeing the patient (see below). Some clinicians suggest restricting collection of the questionnaire only to specific patients and visits—say, patients with rheumatoid arthritis, every 3 to 6 months. However, the authors have not found a setting in which such a selective approach has been successful. The rationale for collection at each usual care visit is based on:

A. This is clearly the simplest procedure for the receptionist or the person who distributes the questionnaire. Any more complex arrangement complicates the situation for this person, and complexity reduces consistency.

B. The MDHAQ is useful in patients with all rheumatic diseases, as it addresses concerns of physical disability, pain, global distress, fatigue, and general symptoms.

C. Although most patients are seen every 2 to 3 months in rheumatology settings, more frequent visits are sometimes needed. If a patient says, “I filled out one of these last week,” the appropriate response is, “If we need to see you as often as every week, we need the questionnaire to know how you are doing.”

D. If one restricts collection to periodic intervals, it is often difficult to document important information, such as a reduction of scores for physical function, pain, or global estimate, or a RAPID3 associated with initiation of a biologic therapy. Data must be recorded on the date the biologic therapy was introduced in order to assess potential benefits accurately.

2. The MDHAQ Helps the Patient Prepare for the Visit by Completing It in the Waiting Area Prior to Seeing the Physician

A patient who completes an MDHAQ prior to a visit with a rheumatologist is considerably better prepared to describe her or his functional status, pain, fatigue, and other symptoms than a patient who has not thought about the encounter while waiting to see the doctor. Visits of most patients with rheumatic diseases often differ from many other types of medical encounters, particularly of asymptomatic patients, e.g., those for hypertension, hyperlipidemia, or osteoporosis. In traditional doctor visits, the patient learns about her or his clinical status from the physician, primarily from physical findings, laboratory tests, or ancillary studies. However, most patients with rheumatic diseases (and other chronic diseases) are symptomatic, and the physician learns much of the information concerning the patient’s clinical status from the patient. In this setting, patients are much better served by completing a questionnaire in the waiting room than by reading nonrelevant material, newspapers, magazines, and so forth.

Management decisions in a patient with a rheumatic disease depend heavily on information from a patient history. Patient history information as quantitative self-report scores is more accurate than as narrative descriptions to assess and monitor status over long periods. In early years of clinical practice, it was not uncommon for a patient to say, at the end of a clinical encounter, “Oh, doctor, I forgot to tell you...” That phenomenon has been seen far less frequently, in the experience of the authors, since a patient questionnaire has become a standard component of the evaluation.

3. The Clinician Prepares for the Visit and Saves Time by Reviewing the MDHAQ Before Seeing the Patient

If a patient sees a rheumatologist for treatment of systemic lupus erythematosus (SLE), a complete blood count (CBC) may be needed for an adjustment of cytotoxic therapy. Similarly, quantitative scores for physical function, pain, patient global estimate, RAPID3, fatigue, review of systems symptom checklist, and recent medical history are best utilized by a clinician who has the information prior to seeing the patient. Several reasons for this advantage include:

A. If there is an important change in scores, whether showing substantial improvement or worsening, it is valuable to have this information at the outset of the visit.

B. A possible discrepancy between the patient’s self-report and the physician’s assessment can be discussed and understood. In many situations, discrepancy of high questionnaire scores versus relatively limited physical findings is as useful a clue to the presence of fibromyalgia as any laboratory test.

C. This procedure assures that the questionnaire is completed. Indeed, if a patient in the senior author’s (TP) practice has not completed a questionnaire on entering the examination room, the doctor simply says, “I’ll come back in a few minutes,” and this reinforces to the patient that questionnaire information is of considerable value. There is always a telephone call to return or prescription to call in, etc., that can be performed while waiting for the questionnaire information.

4. The Clinician Scans the Review of Systems and Records the Number of Positives on the Symptom Checklist

The review of systems was introduced initially into the MDHAQ to provide documentation required for high-level visits, and it continues to meet that need. Some physicians may not wish to include this section due to medical-legal concerns. However, an evidence-based approach is that a patient who presents with more than 20 check marks on the symptom checklist is almost always likely to have symptoms not based on inflammation or joint damage, but possibly fibromyalgia. Rather than introduce liability, citing evidence for a non-inflammatory basis of symptoms may be even more helpful in defending a lawsuit than leaving a symptom exposed (although this has not been tested to date in a courtroom, to the best knowledge of the authors). The primary purpose of the symptom checklist is
COMPLETED FLOWSHEET: 61 year old male with RA

<table>
<thead>
<tr>
<th>DATE</th>
<th>4Nov03</th>
<th>13Jan04</th>
<th>20Jul04</th>
<th>28Sep04</th>
<th>28Dec04</th>
<th>08Feb05</th>
<th>28Mar06</th>
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<tr>
<td>FUNCTIONAL STATUS (FN) [0-10]</td>
<td>3.3</td>
<td>0</td>
<td>0</td>
<td>0</td>
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<tr>
<td>PAIN (PN) [0-10]</td>
<td>9.5</td>
<td>0.5</td>
<td>3.5</td>
<td>0.5</td>
<td>6.0</td>
<td>0</td>
<td>0.5</td>
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<tr>
<td>PATIENT GLOBAL (PTGL) [0-10]</td>
<td>9.5</td>
<td>0.5</td>
<td>2.0</td>
<td>1.0</td>
<td>5.5</td>
<td>0</td>
<td>0.5</td>
</tr>
<tr>
<td>RAPID 3 [0-30]</td>
<td>22.3</td>
<td>1.0</td>
<td>5.5</td>
<td>1.5</td>
<td>11.5/4.0</td>
<td>0/0</td>
<td>1.0/0.3</td>
</tr>
<tr>
<td>PT JOINT COUNT (JT CT) [0-10]</td>
<td>1.9</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
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<td>0</td>
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<tr>
<td>RAPID 4 [0-40]</td>
<td>13.4/3.5</td>
<td>0/0</td>
<td>1.0/0.3</td>
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<td></td>
<td></td>
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<tr>
<td>PHYSICIAN GLOBAL (MDACT) [0-10]</td>
<td>6.5</td>
<td>1.0</td>
<td>0.5</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
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<tr>
<td>RAPID 5 [0-50]</td>
<td>19.9/4.0</td>
<td>1.0/0.2</td>
<td>1.5/0.4</td>
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<td></td>
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<td>WEIGHT (lbs)</td>
<td>167</td>
<td>167</td>
<td>163.8</td>
<td>159</td>
<td>168</td>
<td>166</td>
<td>171</td>
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<td>BLOOD PRESSURE (mm/Hg)</td>
<td>114/70</td>
<td>131/81</td>
<td>116/76</td>
<td>128/80</td>
<td>111/71</td>
<td>120/72</td>
<td>129/79</td>
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<tr>
<td>ESR (mm/hr) [M:0-20 / F:0-30]</td>
<td>43</td>
<td>8</td>
<td>11</td>
<td>10</td>
<td>14</td>
<td>14</td>
<td>14</td>
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<tr>
<td>CRP (mg/dL) [0-10]</td>
<td>30</td>
<td>3</td>
<td>7</td>
<td>6</td>
<td>8</td>
<td>9.3</td>
<td>9.4</td>
</tr>
<tr>
<td>WBC (thou/UL) [4-11]</td>
<td>6.3</td>
<td>7.9</td>
<td>7.1</td>
<td>8.1</td>
<td>9.1</td>
<td>9.6</td>
<td>9.4</td>
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<tr>
<td>HGB(g/dL)[M:14.4/F:12] OR HCT(%)</td>
<td>16.8</td>
<td>17</td>
<td>15.9</td>
<td>16.1</td>
<td>16.6</td>
<td>17</td>
<td>15.3</td>
</tr>
<tr>
<td>PLATELETS (thou/UL) [150-400]</td>
<td>179</td>
<td>207</td>
<td>184</td>
<td>203</td>
<td>207</td>
<td>177</td>
<td>193</td>
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<tr>
<td>ALBUMIN (g/dL) [3.5-5.0]</td>
<td>3.9</td>
<td>4.1</td>
<td>4.4</td>
<td>4.4</td>
<td>4.4</td>
<td>4.6</td>
<td>4.1</td>
</tr>
<tr>
<td>SGOT (U/L) [4-40] OR SGPT (U/L)</td>
<td>18</td>
<td>17</td>
<td>22</td>
<td>18</td>
<td>20</td>
<td>32</td>
<td>21</td>
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<tr>
<td>CREATININE (mg/dL) [0.7-1.5]</td>
<td>1.1</td>
<td>0.8</td>
<td>0.9</td>
<td>0.9</td>
<td>0.9</td>
<td>1.1</td>
<td>1.0</td>
</tr>
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</table>

**MED CODES:** N: new drug, O-on at visit, X-toxicity, C-change dose, D-discontinue, T-taper, R-resume, I-injection, V-only today

<table>
<thead>
<tr>
<th>Medications</th>
<th>Notes</th>
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<tr>
<td>Naproxen</td>
<td>O-880 Q6H</td>
</tr>
<tr>
<td>Ranitidine</td>
<td>O-150 BID 150 BID 150 BID 150 BID 150 BID 75 BID</td>
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<tr>
<td>Acetaminophen with Codeine</td>
<td>O-30 TID 30 TID D-30 TID</td>
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<tr>
<td>Prednisone</td>
<td>N-3 QD 1 BID C-4 BID C-3 BID T-3 BID T-2 BID C-5 QD</td>
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<tr>
<td>Methotrexate</td>
<td>N-10 QW 20 QW C-15 QW 15 QW C-25 QW 15 QW</td>
</tr>
<tr>
<td>Folic Acid</td>
<td>N-1 QD 1 QD 1 QD 1 QD 1 QD 1 QD</td>
</tr>
<tr>
<td>Adalimumab</td>
<td>N-40 QOW 40 QOW 40 QOW</td>
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<tr>
<td>Depo-Medrol</td>
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</table>

**Figure 2** Flow sheet to facilitate longitudinal assessment of a patient in usual rheumatology clinical care. The flow sheet shown is of a male who presented at age 61 with rheumatoid arthritis on November 4, 2003, with scores for physical function of 3.3; pain, 9.5; global status, 9.5; and a RAPID3 score of 22.3 (on a scale of 0-30). He was treated with methotrexate, 10 mg/week, and prednisone, 3 mg/day. Two months later, on January 13, 2004, his RAPID3 score was 1, indicating a situation of near remission. He did very well for almost a year, as documented by visits on July 20 and September 28, 2004 (his RAPID3 score was 5.5 on July 20, but this was due to acute back strain and not inflammation, so his therapy was not altered). On December 28, 2004, the patient presented with a severe flare. His joints were once again swollen, and, although his physical function score was 0, his pain was 6.0 and global 5.5. He was offered the possibility of an anti-TNF agent, adalimumab, which he elected to receive. Two months later, on February 8, 2005, all his scores were 0, indicating an excellent response. This status was maintained for more than a year, as indicated by his visit of March 28, 2006.
a simple review of matters about which the clinician may not be aware, but should be known for optimal assessment and management.

5. The Clinician Reviews the Recent Medical History Information to Save Time and Improve Accuracy and Completeness of Critical Information

The MDHAQ section on recent medical history includes queries about hospitalizations, surgeries, new illnesses, new medications, side effects of medications, smoking, and changes in address, marital status, employment status, medical insurance, and primary care physician. All this information should be reviewed at each visit, but this review can be accomplished without discussion during the patient encounter. If all responses are “No,” at least 2 minutes are saved. If there are “Yes” responses, that information should be incorporated into decisions regarding management. The patient often does not enumerate the basis for the response in writing, as is requested on the MDHAQ, but a query from the physician provides the information. This feature of the MDHAQ has perhaps been found more useful than any other in the experience of the authors.

6. RAPID3 Scores Are Recorded in the Medical Record and Entered into a Flowsheet, Which Also Includes Other MDHAQ Scores, Laboratory Tests, and Medications

A flowsheet can replace many pages in a medical record, including in an EMR, and give a very informative picture, at a glance, of a patient’s course (Fig. 2). Advantages of recording scores in a flowsheet include:

A. Entering data into a flowsheet again ensures that the scores are collected at each visit, which can be neglected if one does not immediately record scores into the record.

B. A flowsheet provides baseline and intermediate values of scores for comparison from one visit to the next, which is particularly helpful over long periods.

C. A flowsheet can be helpful in potential medical-legal situations in documenting the severity of a patient’s condition, which may not otherwise be apparent. For example, litigation may suggest that methotrexate was used for “just arthritis.” The MDHAQ can document severe physical disability, pain, and fatigue experienced by the patient, providing an accurate clinical picture.

A software program used by the authors creates a new flowsheet for review at a visit that includes the first visit, five most recent visits, and a column for recording data from the current visit (which can be entered with pen on paper or electronically) but any system preferred by a clinician is desirable. An important challenge at this time is to create EMR software to generate flowsheets that incorporate data from the MDHAQ, as well as laboratory tests and medication data captured directly from the EMR.

Concluding Thoughts

In the traditional medical encounter, a patient visits a doctor to find out her or his clinical status. This model clearly is applicable to many diseases, such as hyperlipidemia or osteoporosis, in which patients often are asymptomatic, and clinical decisions are based primarily on laboratory tests or ancillary studies. By contrast, in patients with rheumatic diseases (and, likely, most symptomatic chronic diseases), the patient history often provides the primary information for diagnosis and management. A patient questionnaire, such as a HAQ or MDHAQ, may be regarded as providing patient history information as quantitative, standardized “scientific” data, rather than as a traditional narrative.

The HAQ was published, in 1980, and has been invaluable in clinical trials and clinical research. The original HAQ has been adapted through use in routine patient care over the last 30 years to the MDHAQ, for documentation, prognosis, monitoring, and assessment of outcomes. With recognition of the importance of patient history information in rheumatology clinical decisions, an important feature of the MDHAQ that has been recognized in recent years is its value in doctor-patient communication. The MDHAQ helps prepare the patient for the clinical encounter, much as review of a book on a subject helps prepare a student for an examination. This process can save time for the doctor, not only with written information on the patient questionnaire but also with a patient who is better prepared for an enriched dialog. We would recommend that all rheumatologists incorporate an MDHAQ or similar questionnaire into the infrastructure of their clinical care.

Disclosure Statement

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