

# Reducing guesswork in schizophrenia treatment

PANSS can target and gauge therapy, predict outcomes



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**T**he Positive and Negative Syndrome Scale (PANSS) is moving from research into clinical practice as demand grows for objective rating scales. We see the PANSS becoming a treatment and planning tool for psychiatry, just as the electrocardiogram evolved into a measure of cardiac status in medical practice.

Based on our experience in co-authoring (LA Opler) and using the PANSS, we describe how you can use it to:

- identify psychotic symptoms for targeted treatment
- predict with greater accuracy how patients will respond to the treatment you provide.

Table 1

## Subscales of the 30-item Positive and Negative Syndrome Scale (PANSS)

7 Positive symptom subscale items	7 Negative symptom subscale items
P1. Delusions	N1. Blunted affect
P2. Conceptual disorganization	N2. Emotional withdrawal
P3. Hallucinatory behavior	N3. Poor rapport
P4. Excitement	N4. Passive/apathetic social withdrawal
P5. Grandiosity	N5. Difficulty in abstract thinking
P6. Suspiciousness/persecution	N6. Lack of spontaneity and flow of conversation
P7. Hostility	N7. Stereotyped thinking
<b>16 General psychopathology symptoms</b>	
G1. Somatic concern	G9. Unusual thought content
G2. Anxiety	G10. Disorientation
G3. Guilt feelings	G11. Poor attention
G4. Tension	G12. Lack of judgment and insight
G5. Mannerisms and posturing	G13. Disturbance of volition
G6. Depression	G14. Poor impulse control
G7. Motor retardation	G15. Preoccupation
G8. Uncooperativeness	G16. Active social avoidance

### STANDARDIZED ASSESSMENTS

The PANSS first gained stature in studies that established the efficacy of second-generation antipsychotics (SGAs).<sup>1-6</sup> But its authors<sup>7</sup> also envisioned the scale as a useful tool to help practicing clinicians treat patients with schizophrenia and other psychotic disorders.

Twenty years of experience has shown the PANSS to be a reliable and valid severity symptom scale for schizophrenia, bipolar disorder, and other serious mental illnesses. It is particularly useful to track changes in positive and negative symptoms.<sup>8</sup>

Traditionally, psychiatric evaluation has been impressionistic and subjective, but standardized tools provide a common language while introducing objective, empiric measures of clinical status. Because patients with mental disorders are treated by providers from psychiatry, psychology, social work, nursing, and other mental health disciplines, having standardized benchmarks to assess symptom severity can facilitate an integrated approach. And because the PANSS has been translated into some 40 languages and is being adopted in clinical settings worldwide, it provides

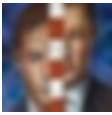


Table 2

### 7 levels of severity on the PANSS for characterizing delusions

Severity level ("anchoring point")	Description of patient function
<b>1 - Absent</b>	The definition does not apply
<b>2 - Minimal</b>	Questionable pathology; the patient may be at the upper extreme of normal limits
<b>3 - Mild</b>	Presence of one or two delusions that are vague, uncrystallized, and not tenaciously held. The delusions do not interfere with the patient's thinking, social relations, or behavior
<b>4 - Moderate</b>	Presence of either a kaleidoscopic array of poorly formed, unstable delusions, or a few well-formed delusions that occasionally interfere with the patient's thinking, social relations, or behavior
<b>5 - Moderate severe</b>	Presence of numerous well-formed delusions that are tenaciously held and occasionally interfere with the patient's thinking, social relations, or behavior
<b>6 - Severe</b>	Presence of a stable set of delusions that are crystallized, possibly systematized, tenaciously held, and clearly interfere with the patient's thinking, social relations, or behavior
<b>7 - Extreme</b>	Presence of a stable set of delusions that are either highly systematized or very numerous, and that dominate major facets of the patient's life. This behavior frequently results in inappropriate and irresponsible action that may jeopardize the safety of the patient or others

a universal means of communicating information about a patient's clinical status.

#### PANSS SCORING SYSTEM

The PANSS includes 30 items, each rated from 1 (absent) to 7 (extreme). In theory, a patient rated "absent" (or 1) on all items would receive a total score of 30, and a patient rated "extreme" (or 7) on all items would receive a total score of 210. In the real world, though, no one sees these extremes. Stable outpatients usually score 60 to 80. Inpatients' scores rarely exceed 80 to 150, even in "treatment refractory" cases.

The 30 items are arranged as 7 positive symp-

tom subscale items (P1-P7), 7 negative symptom subscale items (N1-N7), and 16 general psychopathology symptom items (G1-G16) (Table 1, page 77). Each item has a definition and a basis for rating. The first question you need to answer when rating a patient is whether the item is absent or present.

**How it works.** For example, the PANSS defines delusions as "beliefs that are unfounded, unrealistic, and idiosyncratic," and the basis for rating is "thought content expressed during the interview and its influence on the patient's social relations and behavior as reported from primary care workers or family." If the definition does not apply to

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your patient, you rate this item 1 or absent. If the definition does apply, “anchoring points” for each level of severity are provided (*Table 2, page 78*), and you decide which anchoring point best describes the patient’s functioning during the interview and the preceding week.

**Time required.** In research, gathering informant information, conducting the interview, and generating reliable ratings takes 45 to 60 minutes. In clinical settings, if you know your patient and can function as informant and interviewer, you probably can obtain accurate ratings in 30 to 45 minutes.

Ideally, you would use the Structured Clinical Interview for the PANSS (SCI-PANSS), though clinicians who know this instrument well may prefer a less structured interview that covers all areas of inquiry. Accurate PANSS scores are easy to generate on all 30 items by combining information from the interview with information about how the patient has functioned in the past week.

PANSS ratings are not meant to be obtained after every patient contact but rather as often as needed to guide clinical treatment. For example, you might obtain a PANSS rating:

- when an inpatient is first admitted
- before starting a new medication
- weeks or months later to gauge the new treatment’s effect.

**Training** is vital to becoming a reliable PANSS rater and is offered at venues such as the American Psychiatric Association’s annual meeting. Other options include workshops or self-training materials from The PANSS Institute (*see Related resources*).

The PANSS manual—a complete individual kit costs approximately \$200—or licenses to use multiple copies are available from the copyright holder, MultiHealth Systems, Inc. (*see Related resources*).

Usual PANSS scores are 60 to 80 for stable outpatients and rarely exceed 80 to 150 for inpatients

## GAUGING SYMPTOM SEVERITY

**Treatment planning.** Clinicians at the Rochester (New York) Psychiatric Center use the PANSS to assess symptom severity in inpatients with schizophrenia and other psychotic disorders.

Within 1 week of admission, patients are evaluated on the 30 items by a team of experienced PANSS raters. Symptoms identified by the PANSS become targets in individualized treatment plans. Follow-up PANSS assessments help determine if treatment has improved the selected symptoms.

**Tracking patient progress.** Florida State Hospital uses the PANSS to track progress of patients with serious mental illnesses. Data collected over 8 years from >19,000 PANSS assessments in a multilingual, multicultural population suggests that the PANSS:

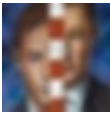
- aids in decision making for medical and nonmedical aspects of care for individual patients
- can help determine if changes in agency prescribing practices affect patient symptom profiles and severity,

one indicator of how policy and guidelines translate into patient care.<sup>9</sup>

**Monitoring depression.** In Geha Psychiatric Hospital in Tel Aviv, Israel, treatment outcomes improved when the PANSS was used to measure severity of symptoms—particularly depression—in an inpatient population of adolescents with schizophrenia.<sup>10</sup> PANSS items can measure dysphoria, including anxiety, tension, and guilt feelings. Clinicians now routinely use the PANSS to assess patients’ symptoms at admission and for periodic follow-up.

## PREDICTING OUTCOMES

The PANSS has been shown to predict course of illness and treatment response, functional outcomes (including aggression), and long-term



Box

**Other PANSS uses: Define remission, predict treatment costs**

**R**emission. Achieving and maintaining remission of schizophrenia has been hampered by a lack of specificity in existing scales. Andreasen et al<sup>11</sup> recommend using selected items from the PANSS and other rating scales, including the Brief Psychiatric Rating Scale (BPRS), Scale for Assessment of Negative Symptoms (SANS), and Scale for Assessment of Positive Symptoms (SAPS).

Creating agreed-upon criteria will mean that clinicians will know what is meant by symptom remission, allowing for better communication and a standard to achieve.

**Costs.** Eventually, rating scales such as PANSS may provide “financial prognoses” to predict treatment costs over time. Mohr et al<sup>12</sup> used PANSS scores to group 663 patients from public and private psychiatric hospitals into eight categories based on symptom severity. When each disease state was correlated with annual treatment costs, baseline assessment was a significant predictor of annualized cost as well as clinical outcome.

outcomes (including deterioration). Adjusting treatments to achieve optimal PANSS scores also can help clinicians achieve remission of their patients’ psychotic symptoms (Box).<sup>11,12</sup>

**Course of illness.** Schizophrenia patients in a Tokyo hospital psychiatric ward were rated within 3 days of admission and at weekly intervals for 8 weeks. Baseline PANSS scores on the conceptual disorganization item and the total negative scale score predicted which patients would respond to antipsychotic treatment within 5 weeks.<sup>13</sup>

**Functional outcomes.** Steinert et al<sup>14</sup> used the PANSS to rate 199 inpatients within 24 hours of admission into an acute psychiatric ward. After

discharge, each patient was assessed retrospectively for aggressive behavior. The conceptual disorganization and hostility items from the positive subscale could predict violent behaviors during inpatient treatment with statistical significance.

**Long-term outcomes.** White et al<sup>15</sup> assessed older schizophrenia inpatients, using the PANSS at baseline and after 1 year. The researchers looked specifically at the “activation factor”—six PANSS items including hostility, poor impulse control, excitement, uncooperativeness, poor rapport, and tension. Poor outcome and low discharge rates were directly correlated with high baseline scores on the PANSS activation factor (PANSS-AF).

**Deterioration.** Goetz et al<sup>16</sup> showed that residual positive symptoms were significantly related to deteriorating course of illness, even when patients adhered to their medications. These results suggest that even subtle symptom elevations as measured by the PANSS can predict deterioration.

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In clinical practice, the PANSS can identify psychotic symptoms for targeted treatment and predict how patients will respond. Standardized assessment can improve patient care by providing a common clinical language and benchmarks to measure symptom severity and treatment results.

**BottomLine**

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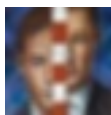
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### Related resources

- ▶ The PANSS Institute. Information on how to attain, maintain, and retain high reliability as a PANSS rater. [www.panss.org](http://www.panss.org).
- ▶ MultiHealth Systems, Inc. (publisher and copyright holder) to purchase the Positive and Negative Syndrome Scale (PANSS). [www.mhs.com](http://www.mhs.com).
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### DISCLOSURES

Dr. Lewis A. Opler receives royalties from MultiHealth Systems, Inc. on sales of the Positive and Negative Syndrome Scale (PANSS) Manual, the Structured Clinical Interview for the PANSS (SCI-PANSS), and the Informant Questionnaire for the PANSS (IQ-PANSS).

Dr. Mark G. Opler is Executive Director of The PANSS Institute.

### ACKNOWLEDGEMENT

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