

# **Global Appraisal of Individual Needs (GAIN) overview**

## **Development and purpose**

The Global Appraisal of Individual Needs (GAIN) originated in 1993 as a collaboration between clinicians, researchers, and policymakers from over a dozen behavioral healthcare agencies to create a comprehensive biopsychosocial assessment tool. It is a progressive and integrated series of measures and computer applications designed to support a number of treatment practices, including initial screenings; brief interventions; referrals; standardized clinical assessments for diagnosis, placement, and treatment planning; monitoring of changes in clinical status, service utilization, and costs to society; and subgroup- and program-level needs assessment and evaluation.

## **Utilization**

The GAIN is an evidence-based assessment used with both adolescents and adults and in outpatient, intensive outpatient, partial hospitalization, methadone, short-term residential, long-term residential, therapeutic community, and correctional programs. It has been adopted by hundreds of agencies and systems of care in communities ranging from large urban areas (Chicago, Los Angeles, Miami, New York City, Oakland) to moderately sized and small urban communities (Bloomington, IL; Farmington, CT; Mobile, AL; Peoria, IL; Phoenix and Tucson, AZ; and St. Petersburg, FL) and rural areas and reservations (Four Corners, NM; Iowa City, IA; Madison County, IL; Sault Ste. Marie, MI; Seven Counties, KY). It is used as the core clinical and research measure across several major multisite studies, including the Adolescent Residential Treatment (ART) program, the Co-occurring Disorder program, the Adolescent Treatment Model (ATM) program, the Assertive Continuing Care (ACC) experiment, the Cannabis Youth Treatment (CYT) experiment, the Drug Outcome Monitoring System (DOMS), the Early Re-Intervention (ERI) experiment, Mothers at the Crossroads, the Persistent Effect of Treatment Study (PETS), Strengthening Communities for Youth, and Reclaiming Futures. Funding for these studies has come from the Center for Substance Abuse Treatment (CSAT), the Interventions Foundation, the National Institute on Drug Abuse (NIDA), the National Institute on Alcohol Abuse and Alcoholism (NIAAA), and the Robert Wood Johnson Foundation (RWJF).

## **Content**

The GAIN has eight core sections (Background, Substance Use, Physical Health, Risk Behaviors and Disease Prevention, Mental and Emotional Health, Environment and Living Situation, Legal, and Vocational). Each section contains questions on the recency of problems, breadth of symptoms, and recent prevalence as well as lifetime service utilization, recency of utilization, and frequency of recent utilization. The items are combined into over 100 scales and subscales that can be used for DSM-IV–based diagnoses,<sup>2</sup> ASAM-based level-of-care placement,<sup>3</sup> JCAHO-based treatment planning,<sup>4</sup> and DOMS-based outcome monitoring.<sup>5</sup> The GAIN also includes items designed to support most state and federal reporting requirements, to compare to community samples

from the National Household Survey on Drug Abuse (NHSDA),<sup>6</sup> and to estimate changes in the cost to society based on the work of Dr. Michael French and his colleagues.

### **Applications**

The GAIN can be administered with a hard copy or a computer, and clients with sufficient cognitive functioning can self-administer it. The online version, GAIN ABS (Assessment Building System<sup>7</sup>), adheres to HIPAA security requirements. The software can be used to generate individual or group-level interpretation and recommendation reports in both statistical and narrative forms, such as the GAIN Recommendation and Referral Summary (GRRS) and the Individual Clinical Profile (ICP), and the data can be exported into analytic software such as SPSS and SAS. GAIN ABS follows response skips and conducts range checks to maintain internal consistency across questions automatically, and interviewers can add observation notes at any point during the interview. GAIN ABS can also create individualized versions of the GAIN, adding subsets of items to the core group of required items.

### **Norms**

The psychometrics of the GAIN and the scale norms have been established for both adults and adolescents overall and by level of care (within age). Using the diverse data collected in the abovementioned studies, we are in the process of generating additional norms by gender and race as well as looking at variability in the degree of co-occurring mental disorders and involvement in family, school, work, welfare, and juvenile and criminal justice systems.

### **Scales and internal consistency**

The GAIN includes over 100 scales and indices. Most of these scales have two to four subscales, and we are currently completing an article demonstrating that the psychopathology scales consistently fall into four main statistical dimensions across age and level of care: substance problem severity (.90), internal mental distress (.94), external behavior problems (.91), and crime and violence (.90).<sup>8</sup> Other scales provide measures of personal strengths, spirituality, and reasons for and readiness to quit using alcohol and other drugs.

The following table shows key indices and their alphas for adolescents and adults (where applicable). For adolescents the alphas are based on the 2006 CSAT adolescent treatment data set ( $n = 12,630$ ), which is 27% female, 4% Alaskan Native/Native American, 17% African American, 1% Asian, 46% Caucasian, 19% Hispanic, 14% mixed, and 2% other, with 74% between the ages of 15 to 17. For adults the alphas are based on the Early Re-intervention (ERI) experiment cohort ( $n = 446$ ; Scott & Dennis, under review), which is 46% female, 80% African American, 8% Caucasian, 2% Hispanic, and 10% mixed/other, with 77% between the ages of 30 and 49.

<b>Scale/Index</b>	<b>Adolescent alpha</b>	<b>Adult alpha</b>
Cognitive Impairment Scale	Summative	Summative
Substance Frequency Scale	.80	.77
Current Withdrawal Scale	.92	.95
Treatment Resistance Index	Summative	Summative
Treatment Motivation Index	Summative	Summative
Self-Efficacy Scale	.71	.72
Problem Orientation Scale	.92	Summative
Substance Problem Scale—Lifetime	.90	.89
Health Distress Scale	.73	.79
Health Problem Scale	.73	.86
Internal Mental Distress Scale	.94	.97
Traumatic Stress Scale (subscale of the Internal Mental Distress Scale)	.92	.96
Behavior Complexity Scale	.94	.96
Emotional Problem Scale	.79	.86
Environmental Risk Scale	.71	.63
General Conflict Tactic Scale (subscale of the Crime and Violence Scale)	.85	.89
General Victimization Scale	.82	.86
Personal Sources of Stress Index	Summative	Summative
Other Sources of Stress Index	Summative	Summative
General Social Support Index	Summative	Summative
Illegal Activities Scale	.82	.86
Employment Activity Scale	.92	.96
Training (School) Activity Scale	.93	.91
Recovery Environment Risk Index	Summative	Summative

### **Reliability and validity**

Studies with adults and adolescents have found good reliability in test/retest situations on days of use and symptom counts ( $r = .7$  to  $.8$ ), as well as diagnosis (kappa of  $.5$  to  $.7$ ). Self-reports were consistent (kappa in the  $.5$  to  $.8$  range) with parent reports, on-site urine and saliva testing, and laboratory-based EMIT and GC/MS urine testing. In fact, self-reports on the GAIN were found to be consistent with a multi-method estimate based on any self-report or positive urine or saliva test for any drug (kappa =  $.56$ ), cocaine (kappa =  $.52$ ), opioids (kappa =  $.55$ ), and marijuana (kappa =  $.75$ ), with no one method being superior across all drugs.<sup>9,10</sup> Using discriminant analysis, the GAIN scales could also reliably predict independent and blind staff psychiatric diagnoses of co-occurring psychiatric disorders including ADHD (kappa =  $1.00$ ), mood disorders (kappa =  $.85$ ), conduct disorder/oppositional defiant disorder (kappa =  $.82$ ), adjustment disorder (kappa =  $.69$ ), or the lack of a non-substance use diagnosis (kappa =  $.91$ ) and to discriminate the primary other disorders across these conditions (kappa =  $.65$ ).<sup>11</sup>

## Licensure, training, and support

The GAIN is copyrighted by Chestnut Health Systems. Licensing to use any of the GAIN family of instruments is \$100 per agency for 5 years of use, and multisite licenses are available. GAIN trainings are held several times per year in open or specially arranged workshops that are part of a continuing education and certification process. GAIN ABS web accounts, which include data entry and computer assisted administration options as well as the ability to generate the clinical reports, are available for purchase. You can view samples of the clinical reports, as well as different versions of the GAIN and other related information, at <http://www.chestnut.org/li/gain>.

Our GAIN Coordinating Center (GCC) provides quality assurance reviews and certification, GAIN ABS support, analytic support, technical assistance, and training support for hundreds of sites that use the GAIN. Contact [GAINInfo@chestnut.org](mailto:GAINInfo@chestnut.org) for information on GAIN training, licensing, or GAIN ABS.

## References

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- <sup>10</sup> Lennox, R., Dennis, M. L., Ives, M., & White, M. K. (2006). The construct and predictive validity of different approaches combining urine and self-reported drug use measures among adolescents in substance abuse treatment. *American Journal on Addictions, 15*(Suppl. 1), 92-101.
- <sup>11</sup> Shane, P., Jasiukaitis, P., & Green, R. S. (2003). Treatment outcomes among adolescents with substance abuse problems: The relationship between comorbidities and post-treatment substance involvement. *Evaluation and Program Planning, 26*, 393-402.