Technical Report on the Development and Pilot Testing of the CCHI Examinations

July 7, 2011

For more information about CCHI's credentialing programs, please visit CCHI's website at
www.healthcareinterpretercertification.org

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Acknowledgments

This Report on the development and pilot testing of the CCHI Certification Examinations for Healthcare Interpreters was conducted on behalf of the Certification Commission for Healthcare Interpreters (CCHI) by Castle Worldwide Inc., under the supervision of James P. Henderson, Ph.D. This document is copyrighted and is intended for the sole use of CCHI.

The researchers conducting this study would like to thank the people who generously contributed their time, energy, and expertise toward the completion of this study.

This study could not have been completed without the effort and diligence of the CCHI Test Development Steering Committee, the leadership of CCHI, and the advice and counsel of Cheryl L. Wild, Ph.D. of Wild & Associates and Georgia Patrick of The Communicators. These individuals are individually recognized below.

CCHI would like to thank The California Endowment for funding the development of CCHI's first two examinations and the U.S. Department of Health and Human Services, Office of Minority Health for funding this report.

In addition, CCHI would like to thank all of the Subject Matter Experts who participated in examination development. The dedication of these individuals – who volunteered countless hours to CCHI – was critical in creating CCHI's valid and credible examinations.

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Forward

In 1977, the federal government cooperated with the new National Commission for Health Certifying Agencies to develop standards of excellence for voluntary certification programs. During the past 35 years, the standards for developing certification programs have evolved and been strengthened. The *National Commission for Certifying Agencies: Standards for the Accreditation of Certification Programs* now serve as a benchmark for all certification programs.

The Certification Commission for Healthcare Interpreters (CCHI) has used these standards as a guidance document for the development of their credentialing program. Although CCHI is too "young" to have accreditation (accreditation requires a minimum of 500 certificants), it is using these standards as a developmental yard stick – a tool to assure that they are developing a fair, valid and reliable program that will achieve accreditation when appropriate.

This report on the development of the AHI™ and CHI™ examinations provides documentation to you, the stakeholders in this credentialing program, that the tests have been developed in a manner that meets the most recent National Commission for Certifying Agencies (NCCA) standards. For example, the NCCA Standard 11 requires that "certification programs must follow a valid development process" (p. 15). Standard 12 deals with setting cut scores and requires that "the organization must make available a summary of the cut score study to candidates and other interested stakeholders" (p. 17). Standard 13 deals with documentation of the psychometric procedures to score, interpret, and report assessment results. Standard 14 requires sufficient reliability of the test forms and Standard 15 requires that "candidates are not disadvantaged" (p. 19) by the form of the assessment instrument.

The development of the Associate Healthcare Interpreter™ (AHI™) examination and the Certified Healthcare Interpreter™ (CHI™) examination is reported in separate sections of this report. The methodology used to develop each examination is summarized in the report. The methodology represents sound psychometric principles to assure the development of a valid examination (as required by Standard 11). As a psychometrician, I was especially pleased at the exceptional efforts made by CCHI to involve a number of subject matter experts (SMEs) in the development process. The extensive involvement of subject matter experts began with the Job Task Analysis, which included nearly 2,500 people from across the country (see http://www.healthcareinterpretercertification.org/images/webinars/cchi%20jta%20report-public.pdf). From this wide involvement of subject matter experts, the test specifications were determined and then additional subject matter experts were recruited to help in the development of each of the examinations, in the setting of the standards, and in the scoring of the performance examination. New certification programs are often tempted to narrow the involvement of subject matter experts

since widespread involvement involves time, money, and the identification of SMEs who are willing to donate their time on a new effort. CCHI took the time and expense to identify subject matter experts who widely represented the field. This effort to involve a wide representation of experts is one excellent mechanism for assuring that the examination content is appropriate, that the examination questions are well written, and that the scores are fair. Expanding the involvement of subject matter experts increases the validity of an examination and shows that the items for the examination were selected to meet the requirements of the specifications (which came from the earlier Job Task Analysis).

The report also discusses how the cut scores were set (Standard 12), how scoring was done (Standard 13), and the reliability (Standard 15) of the resulting examinations. By providing a standardized training for examination raters (the individuals who score CCHI's oral performance examinations), using two raters for each of the vignettes on the oral performance examination, and using different raters for different vignettes (rather than the same 1 or 2 raters for the entire examination), CCHI has made maximum efforts to minimize rater biases in the grading process. This increases the validity of the performance scores.

The Institute for Credentialing Excellence defines validity as "the degree to which accumulated evidence supports specific interpretations of all components of a certification program (e.g., education, experience, and assessment instruments)." This report, along with the previous report on the Job Task Analysis, is an excellent accumulation of evidence showing the validity of CCHI's certification process using the CCHI application, examination, and pass scores.

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Cheryl L. Wild, PhD[1]
President
Wild & Associates, Inc.

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Reference:
Knapp, J., Anderson, L. & Wild, C. (Eds.) (2009) *Certification: The ICE Handbook.* Washington, DC: Institute for Credentialing Excellence.

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[1]Dr. Cheryl Wild has worked in the testing industry for 35 years and is editor of *Improving Testing: Applying Process Tools and Techniques to Assure Quality*. Her expertise in psychometrics, process management, certification standards and quality provide a wide range of skills. As an assessor for ISO/IEC 17024 standard for bodies who certify people, Dr. Wild has an in-depth understanding of the standards for certification bodies. She has seen the difficulties that organizations have when trying to retrofit certification programs to testing standards and has seen how the right design of a program can prevent numerous problems. In Improving Testing: Applying Process Tools and Techniques to Assure Quality, Dr. Wild has shown that quality in certification goes beyond just developing a good test – it requires effective leadership, design and planning, process management and improvement and implementation of standards.

Summary of CCHI's Job Task Analysis Study

The Certification Commission for Healthcare Interpreters (CCHI) was launched in September 2009 to develop a national, valid, credible vendor-neutral certification program for healthcare interpreters. These four adjectives define CCHI's approach, guide their process, and are the critical elements that differentiate CCHI interpreters and the stakeholders who are counting on them to provide a trained, qualified, and certified population of healthcare interpreters.

CCHI's credentials for healthcare interpreters are not branded to or licensed from any vendor of language services. CCHI developed a certification from the ground up, not relying on any commercially-oriented certification, training, assessment developed by other organizations. CCHI is not derived from or related to a commercial owner/sponsor.

CCHI's process of developing a national certification program for healthcare interpreters began with a Job Task Analysis (JTA) study of the profession of healthcare interpreters. The results of this national survey provide the overarching framework for CCHI's certification program. The JTA is the primary mechanism for establishing the job-relatedness of decisions concerning standards for professional certification and for supporting arguments of content validity for examinations. The process started with the JTA panel defining the tasks performed by Healthcare Interpreters and the knowledge, skill and ability (KSA) believed to be important for competent performance of those tasks. The panel came to consensus on the characteristics of individuals for whom CCHI's first certification is designed - the entry level healthcare interpreter:

A survey was then developed to gather information on the KSAs identified by the JTA panel. Close to 2,500 responses, representing healthcare interpreting services in 141 languages, were received during the survey period. This represented an excellent response rate and well exceeded the minimum required for statistically reliable results for the study. The distribution of the demographic characteristics of the respondent population was reviewed by subject matter experts and is representative of the breadth of the profession.

The analysis of the data collected through the Job Task Analysis study confirm that the study appropriately and accurately identified the tasks performed by entry level healthcare interpreters and the KSAs required to perform those tasks. Therefore, CCHI had what it needed in an examination specification document to achieve valid, fair and legally defensible certification examination.

CCHI's Job Task Analysis provided the overarching framework – the test blueprint – for CCHI's certification examination. The test blueprint reflects the intent of the knowledge, skills, and abilities defined through the JTA process as being important for competent performance of the job of healthcare interpreters and how those KSAs should be grouped and weighted to produce a valid and reliable examination.

CCHI's comprehensive job task analysis study and results conducted on behalf of CCHI by The Caviart Group, LLC under the supervision of Clarence "Buck" Chaffee, is available on CCHI's website or through written request.

Summary of Test Specifications

Associate Healthcare Interpreter™ – Managing Healthcare Interpreter Functions

Manage an Interpreting Encounter   30-35%

- Manage the healthcare encounter
- Maintain ethical standards in the encounter
- Establish ground rules for the healthcare encounter with all participants
- Explain rules of confidentiality to the patient
- Introduce yourself to the patient according to protocols
- Document healthcare encounters on paper
- Position yourself relative to other participants to manage room dynamics and support communication

Healthcare Terminology   20-24%

Interact with Other Healthcare Professionals   20-24%
- Advocate for the patient (e.g., take action on behalf of the patient that goes beyond communication)
- Assist patients in navigating the healthcare care system (i.e., structure, procedures, protocols, regulations)
- Debrief with other interpreters or clinicians
- Instruct healthcare providers in how to work with interpreters and patients with limited English proficiency
- Participate in community outreach efforts
- Interpret during patient check-out process (e.g., assisting with prescriptions, appointments, financial)
- Determine interpreting needs of inpatients

Prepare for an Interpreting Encounter   16-20%
- Determine interpreting mode to be used
- Confirm dialect or regional language issues
- Assess need for personal protective gear and/or universal precautions.
- Determine your ability to interpret a healthcare encounter (i.e., an interpreting session)
- Initiate or respond to telephone calls from off-site patients

Demonstrate Cultural Responsiveness   3-6%
- Perform cultural brokering (e.g., determine, convey and mediate patient's cultural values)

Certified Healthcare Interpreter™ – Performing Healthcare Interpreting

Perform consecutive interpreting   75%

Perform simultaneous interpreting   14%

Sight Translate/Translate Healthcare Documents   11%
- Perform Sight Translations of Healthcare Documents
- Perform Written Translations of Healthcare Documents

Technical Report Introduction

The Certification Commission for Healthcare Interpreters (CCHI) is a credentialing agency responsible for the development and implementation of all policies related to the credentialing and certification of healthcare interpreters. As part of this responsibility, CCHI creates standards for, tests, credentials and certifies the professional competence and ethical standards of healthcare interpreters. Healthcare interpreters relay messages accurately from a source language to a target language in a culturally competent manner and in accordance with established ethical standards. The proficiency statement as defined in the job analysis is as follows:

> *A person who is able to perform the functions of an entry-level healthcare interpreter competently and independently in a healthcare setting with the knowledge, skill, and ability required to relay messages accurately from a source language to a target language in a culturally competent manner and in accordance with established ethical standards.*
>
> *(Entry level means "the level required to be able to begin to perform unsupervised healthcare interpreting competently.")*

To be eligible for certification, candidates must meet the following criteria before they qualify to take the examination:

- Minimum age of 18 years.
- Have a minimum of U.S. high school diploma (or GED) or its equivalent from another country.
- Have at least 40 hours of healthcare interpreter training (academic or non-academic program).
- Have linguistic proficiency in English and Spanish (for the Certified Healthcare Interpreter™ examination).

The Associate Healthcare Interpreter™ (AHI™) component of the CCHI examination is an Internet-based, multiple-choice examination designed to assess whether a candidate possesses the knowledge required of a minimally proficient healthcare interpreter. It includes 100 questions that meet specifications defined by the CCHI Job Analysis. A subset of these questions is used to try out new questions for future test forms and are not included in the total score. The test covers knowledge that is required to manage the functions of healthcare interpreters as defined by the following domains:

I.	Manage an Interpreting Encounter	30 – 35%
II.	Healthcare Terminology	22 – 25%
III.	Interact with Other Healthcare Interpreters	20 – 24%
IV.	Prepare for an Interpreting Encounter	16 – 20%
V.	Demonstrate Cultural Responsiveness	3 – 6%

The Certified Healthcare Interpreter™ (CHI™) component of the CCHI examination is a performance test designed to assess the candidate's ability to interpret in healthcare encounters at a level of ability that is commensurate with certification. It addresses the interpretation of spoken communication as well as the sight translation and translation of healthcare documents. The performance test is delivered by computer through the Internet and scored by trained evaluators, who use four anchored rating scales for each problem. Specifically, the test is structured and weighted (by percents) in accordance with specifications based on the CCHI Job Analysis, as follows:

VI. Interpret Spoken Communication
     Perform Consecutive Interpreting (four problems)   75%
     Perform Simultaneous Interpreting (two problems)   14%
VII. Sight Translate/Translate Healthcare Documents   11%
     Perform Sight Translations of Healthcare Documents
     Perform Written Translations of Healthcare Documents

CCHI contracted with Castle Worldwide, Inc., (Castle) for the development, administration, and scoring of two versions, or forms, for the AHI™ and CHI™ examinations. This report provides comprehensive information about these processes and their results.

Of paramount importance in all phases of work related to the CCHI examination program was the plan to file for accreditation through the National Commission for Certifying Agencies (NCCA). NCCA requirements concerning psychometrics, which concern how items are developed and validated, how tests are designed and assembled, how standards are set, how tests are scored (including the training of raters for performance tests), and how forms of a test are equated, provided direction throughout test design, development, administration, scoring, and equating of the pilot examination. The following report illustrates how CCHI has addressed NCCA standards.

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James P. Henderson, Ph.D.[2]
Executive Vice President
Castle Worldwide, Inc.

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[2]Dr. James Henderson is a senior psychometrician with extensive experience in the development and administration of both multiple-choice and performance-based examinations for certification and licensure. Dr. Henderson's psychometric expertise is widely recognized. He has served as Chair and Psychometrician to the National Commission for Certifying Agencies (NCCA), which is the accreditation body of the Institute for Credentialing Excellence (formerly known as the National Organization for Competency Assurance - NOCA). He also is a member of ICE's Leadership Council and was a member of ICE's Board of Directors.

Associate Healthcare Interpreter™ Examination

Design and Development

The Associate Healthcare Interpreter™ (AHI™) examination is the first part of the CCHI examination and consists of 100 four-option, multiple-choice items and measures knowledge that is essential to competence in managing the functions of healthcare interpreters. The examination is entirely in English. Castle implemented the examination specifications as provided by CCHI, based on the job analysis that CCHI completed in early 2010.[3] Examination specifications detail the content validated for the role and the number of examination questions for each domain and task. Requirements for item format include short-text stimuli and written scenarios. The design of the examination allows for the possibility of visual images and audio/video media as stimuli, but all items in the pilot test forms were text-based.

During the period of June 3 - 5, 2011, Castle worked with 10 subject matter experts[4] representing a variety of languages, healthcare settings, and geographic locations in the United States to write and review 230 questions. Castle provided the panelists with an overview of the CCHI credentialing program; the role, nature, and purpose of the examination in that program; and key elements of security that had to be followed during and after the meeting. Castle further provided panelists with detailed information on the elements of high quality multiple-choice questions, with attention both to desirable and undesirable traits, as well as the item analysis statistics that would be used to understand the quality and performance of every question. Training for the panel included practice writing and reviewing questions as a group, both at the beginning of the meeting and as it progressed. Finally, Castle circulated among panelists, reviewing their work and offering suggestions for improvement, and then coordinated the review of questions within the panel.

A second meeting of 8 subject matter experts occurred on July 7 and 8, 2010.[5] During this meeting, expert panelists and Castle worked together to review questions that had been preassembled in two forms that met the requirements for equating. The most important objective of this meeting was to ensure that the questions were all clear, fair, and compliant with psychometric and editorial guidelines. In order to be considered for use in the examination, the questions had to be linked to the job analysis, referenced to published materials in healthcare interpreting (provided by CCHI), and reviewed and revised by qualified individuals not involved in writing the questions. Further, the questions had to be evaluated with acceptable ratings by members of the panel, using scales for importance, criticality, and frequency. The questions then were entered into Castle's item banking system and reviewed for conformity to psychometric criteria for multiple-

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[3] For a complete report of CCHI's Job Task Analysis, see
http://www.healthcareinterpretercertification.org/certification/apply-nowith136.html.
[4] For more details on the Subject Matter Experts involved in test development, see Appendix D.
[5] For more details on the Subject Matter Experts involved in test development, see Appendix D.

choice questions and to grammatical conventions. The questions were also reviewed by a professional linguist that CCHI approved and with whom Castle contracted.

Throughout the examination assembly process, Castle worked with the variety of questions available to create two forms of the examination and ensure that those forms met content specifications by domain, that the requirements of the equating design for the pilot test were met, and that within each form, the broadest coverage of content was achieved while maximizing item independence. Castle cooperated closely with two designated CCHI Commissioners throughout the examination assembly process. After initial reviews were completed, the CCHI Commissioners reviewed questions, working closely with Castle to ensure the accuracy and quality of all questions. This working relationship continued throughout the assembly and loading of two parallel forms for Internet-based examination administration.

Pilot Test Administration

Sample

CCHI recruited 361 qualified individuals to participate in the pilot test of the AHI™ examination. These individuals met the eligibility criteria and represented 26 languages, including languages of major and lesser diffusion. In recruiting the sample for the pilot test administration, CCHI indicated that all participants who achieved a passing score would receive recognition as an Associate Healthcare Interpreter™. Participants made appointments to take the examination at Castle testing centers throughout the United States under secure, proctored arrangements by computer. The examination was administered using PASS, Castle's test administration driver. Castle maintained a constant check on data quality throughout the examination administration window. Participants understood that they would receive their scores only after Castle had completed all statistical studies and quality checks.

Analysis

Upon closure of the examination administration window, Castle reviewed all answer strings again and conducted the first of several item analysis studies. Item analysis is the statistical study of responses provided by the candidates to the questions on the examination. Statistics include the classical item difficulty estimate (percent correct), discrimination index (point biserial correlation), number and percent choosing each response option, and distractor effectiveness (point biserial correlation). Castle's review of the first item analysis identified questions whose statistical properties suggested the need for review by subject matter experts. Criteria by which items were flagged for review by subject matter experts for the purpose of key validation were classical item difficulty below 35%, item discrimination at or below +0.15, and instances in which the percent of candidates

choosing an incorrect option represented the majority of candidates.
Subject matter experts working with Castle reviewed the selected items and their item statistics. Castle then implemented all decisions made during key validation and conducted a second item analysis study to verify correct implementation.

Examination-level statistics were generated following the second item analysis. Form 1 statistics (See Appendix B) are based on the 202 candidates who were scored. The mean raw score (average number correct) was 71.45. Raw scores on this form ranged from a low of 39 to a high of 82. The standard deviation of raw scores was 6.75, indicating that the dispersion of scores around the mean was rather modest; that is, scores were not widely dispersed. Internal consistency reliability was estimated using the Kuder Richardson (20) formula. Accordingly, the possible range of statistics is 0 to 1, and it is desirable that statistics approach 1. Guidelines for interpreting internal consistency reliability hold that 0.80 is acceptable for certification examinations. Form 1 achieved 0.84. The standard error of measurement estimates the range within which candidates' true scores lie. For form 1, that statistic is 2.67. Decision consistency reliability estimates the accuracy of pass/fail classifications and is determined using the Brennan Kane formula. Because of the location of the passing standard on the score distribution, the decision consistency reliability was quite high. Average discrimination was quite strong at 0.29.

Examination level statistics for form 2 are also provided in Appendix B. The mean raw score was 72.33, with a low score of 44, high score of 82, and a standard deviation of 5.99. Internal consistency was 0.80 (KR-20), the standard error of measurement was 2.63, and the decision consistency was very high at 0.99. Average discrimination was quite strong at 0.25.

Determination of the Passing Standard

Accreditation standards for certification examinations indicate that the method used to determine the level of performance required to pass an examination be consistent with the design and purpose of the examination. CCHI employed the Angoff Modified Technique, which is thought to be the most widely used procedure for establishing criterion-referenced passing points. Castle conducted the standard setting study on November 15, 2010, working with a panel of 6 expert interpreters[6] representing a variety of languages, healthcare settings, and geographic locations in the United States.

Based on the data collected from the panel, using the Angoff Modified Technique, Castle computed a recommendation that CCHI considered during a conference call on December 3, 2010, and then the resulting decision, expressed as the minimally acceptable raw score for form 1, was implemented in scoring the examination and

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[6] For more details on the Subject Matter Experts involved in test development, see Appendix D.

making pass/fail decisions. The passing standard established for form 1 was applied to form 2 through equating.

Scoring and Equating

Forms 1 and 2 of the CCHI examination were developed using the same examination specifications to ensure comparability in content. To achieve comparable difficulty between the two forms, Castle adhered to design requirements for equating using the Rasch model, for which the number of candidates qualified minimally. In this design, a set of items (43 items, approximately 50% of the examination) was common between the two forms, such that these questions were identical on form 1 and form 2 and located in close proximity in the sequence of items as a control for fatigue as an influence on item difficulty. As such, because the questions are the same and in the same position ordinally, it is reasonable to think that variation in the difficulty obtained for these questions is largely due to differences in the group of candidates taking the forms.

After the second item analysis had been completed on both forms, Castle calibrated form 1 and anchored form 2 to form 1 using the Rasch model. Scores were scaled to the distribution of 300 to 600 with the passing standard anchored at 450.

Certified Healthcare Interpreter™ Examination

Design and Development

The Certified Healthcare Interpreter™ (CHI™) examination is an oral performance examination that assesses interpretation for spoken communication and translation for written communication, skills that (as specified in the job analysis study [2010]) are essential to competence. The pilot test focuses only on interpreting for Spanish-speaking candidates; however, long-range plans include other languages that are commonly spoken in the United States. Weights applied in scoring align emphasis for the various problems to the specified percentage allocations. The first four problems assess consecutive interpreting and consist of typical dialog involving a healthcare provider and a Spanish-speaking patient, sometimes with family members or care givers. The next set of two problems assesses simultaneous interpreting, one from English to Spanish and one from Spanish to English. The sight translation problem includes three brief sections of three documents that are typical of those used in healthcare: educational, legal, and institutional. Finally, written translation is assessed that requires candidates to recognize the best translation for a passage. The examination is administered by computer in secure, proctored settings, with responses stored immediately as they are given on Castle servers.

Examination development took place in two item development meetings (June 7 – 9, 2010, and July 15 – 17, 2010) and one item review meeting (September 16 – 17, 2010). Ten subject matter experts participated in the item writing meetings and twelve in item reviewing. The SMEs represented a variety of healthcare settings and geographic locations in the United States. While the majority of these were Spanish interpreters, CCHI also involved interpreters who interpret in other languages since an English template of the CHI™ examination was first developed which will be used for all future CHI™ examinations and then trans-adapted into Spanish during this phase of test development.[7] The development of each problem adhered to a template developed in the first item development meeting in order to ensure consistency in format, length, and difficulty and to ensure appropriate representation of the variety of healthcare providers, settings, and conditions. The item development panel was essentially the same for the two item development meetings, both of which involved small group work to write and revise problems and model responses and whole group work to review and suggest revisions for problems and model responses. The review panel was largely a different group of people, and they reviewed and revised the problems and model responses extensively.

In order to be included in the examination, the problems had to be aligned to the

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[7] For more details on the Subject Matter Experts involved in test development, see Appendix D.

template, specifications for length, lexical demand, and delivery time. Problems had to have been developed by item writers who were trained in essential concepts and strategies; reviewed and validated by the group for importance, criticality, and frequency; and coded to examination specifications. As with the multiple-choice questions, CHI™ problems were reviewed by a qualified linguist, whose suggestions were considered carefully and implemented as agreed upon with CCHI representatives. Throughout the examination assembly phase, Castle used examination specifications and various measures of length (word count, number of seconds for read prompts, number of seconds to deliver response) and difficulty (number of medical terms, preliminary rating of difficulty) to select problems that would result in two comparable forms. The two forms represented the greatest breadth of content possible, as determined by the type of healthcare provider, setting, and patient conditions. Finally, to provide common items as the basis for an equating study, there were two consecutive problems and one simultaneous problem in common, presented in the same sequential location, on the two forms.

Recordings were made by expert interpreters, assisted by Castle staff and by a CCHI Commissioner. Each was timed carefully and re-recorded as necessary to ensure that members of the target audience could perform them as intended. After the recordings had been made, another subject matter expert reviewed them in a separate room to double check that candidates could perform them and that they met essential requirements for speed of delivery and clarity.

Pilot Test Administration

Sample

CCHI recruited 229 qualified individuals to participate in the pilot test of the CHI™ examination. In recruiting the sample for the pilot test administration, CCHI indicated that all participants who achieved a passing score would receive certification. Participants made appointments to take the examination at Castle testing centers throughout the United States under secure, proctored arrangements by computer. Participants understood that they would receive their scores only after Castle had completed all statistical studies and quality checks.

Examination Administration

The CHI™ examination is an Internet-based examination delivered to candidates in secure, proctored settings (20 different Castle testing centers were used). Candidates used headsets supplied by Castle with earphones and microphones through which they could listen and record their responses. After being admitted, candidates were logged into the system and given instructions and a short practice

examination. After completing the practice problems, candidates started the actual examination, for which they were permitted 60 minutes. Candidates were responsible for monitoring their own time during the examination, assisted by on-screen timers. Each of the four problem types had unique functionality in the pilot test administration.

For the four consecutive problems, each problem screen opened with a written statement of the scenario follow by the vignette that required interpretation of all utterances in English and Spanish. Candidates were presented with two opportunities to play each recorded utterance, though they were not required to play an utterance twice. After playing an utterance, candidates could click to record their interpretation. The delivery system recorded the interpretation immediately on Castle servers.

Simultaneous problems also started with a written scenario, and when candidates were ready, they clicked to begin the problem in which the source material was delivered and the interpretation was recorded simultaneously. Rules for the examination established by CCHI were that candidates could not play the source material more than a single time, and that they were expected to record their interpretation during the playback.

The sight translation problem on each form had three components, each presented in writing on the screen. When they were ready, candidates could click to record their interpretations. This was done separately for each component of the problem. Finally, the written translation was presented and candidates recorded their response by clicking a response button.

Determination of the Passing Standard

Accreditation standards for certification examinations indicate that the method used to determine the level of performance required to pass an examination be consistent with the design and purpose of the examination. CCHI employed the Extended Angoff Technique, which is a criterion-referenced procedure adapted from the Angoff Modified Technique. Castle conducted the standard setting study on December 3, 2010, working with a panel of 6 subject matter experts representing a variety of healthcare settings and geographic locations in the United States.[8]

Based on the data collected from the panel, using the Angoff Modified Technique, Castle computed a recommendation that CCHI considered during a conference call on December 14, 2010, and then the resulting decision, expressed as the minimally acceptable raw score for form 1, was implemented in scoring the examination and making pass/fail decisions. The passing standard established for form 1 was applied to form 2 through equating.

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[8] For more details on the Subject Matter Experts involved in test development, see Appendix D.

Rating, Scoring, and Equating

Trained raters (n = 15) used four 4-point behaviorally anchored rating scales to evaluate candidate responses. The rater training program, which occurred November 8 -9, 2010, was designed to standardize rater attention to specific criteria for each and to create a shared understanding of the appropriate standard for points of the scales. Fifteen raters were selected because of their expertise in Spanish-language interpreting. Half of the raters had experience in the item development process and the other half were new to the examination.[9] This panel worked to refine the focus for each scale, negotiate how the scales were to be interpreted (criterion ratings), and reach consensus on a number of principles that guided the scoring process.

Rater training began first with lecture and discussion on key concepts and threats to the validity of ratings. Alignment of raters to the process was accomplished through listening first to model responses for each problem type and then to several actual candidate responses for each problem. For all of these, the group agreed on criterion ratings (correct ratings) and then practiced applying the scales and standards to problems independently. The agreement of raters to criterion ratings was monitored throughout rater training in order to ensure that a consistent interpretation of the standard was applied. With only one exception, the group's preliminary ratings were within one point of the rating scale. Through consensus, all agreed with the resulting standard. An important point to understand about the rating system is that raters applied the four scales to the response(s) for each problem as a whole, not for the separate utterances of consecutive and sight translation problems. Castle recorded ratings as they were given through the online system, identifying them with a response identification number, rater identification number, and problem identification number. Each problem was scored independently by two raters.

Raters worked independently for several weeks following the training session to score responses. The scoring process was designed so that problems were assigned to raters randomly, meaning that the problems constituting a candidate's examination were broken up among raters. The benefit of this strategy was to minimize the impact of intra-rater tendencies (sources of variation within a rater, e.g., central tendency) in the scoring process, and by minimizing it, enhancing alignment to the agreed-upon standards. When scoring, raters could play the source material and then listen to the candidate's interpretation. For consecutive and sight translation problems, raters listened to the entire set of utterances that make up the problem before recording the appropriate rating by clicking the radio button that corresponded with their assessment.

During the scoring cycle, raters were given model, or anchor, responses to score. The anchor responses were administered to raters randomly, such that all raters

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[9] For information on rater qualifications, see Appendix E.

had to score all anchor problems. This process enabled Castle to give raters feedback at several points during the scoring cycle about their ongoing agreement with criterion ratings for anchor responses, one for each problem. The feedback represented the percent of instances in which the ratings given to anchor responses in that period were in disagreement with the agreed upon rating. In general, raters were very successful in maintaining agreement within one scale point throughout the scoring process. Raters showed the highest conformance to the criterion standard for the Register scale when expressed as an exact match and for the Quality of Speech when expressed as within +/- 1 scale unit of the criterion.

Castle loaded the answer records into Microsoft Excel for scoring purposes. The first step was to validate the data, that is, to verify that the ratings were present and within the specified range. Then for each candidate and problem, Castle averaged the ratings across all four scales for each rater. Castle then applied the weighting as dictated by examination specifications for each problem using multiplication and added in the weight for the written translation problem, such that a perfect response across all problems for a candidate would total 100. Examination specifications were established in CCHI's Job Task Analysis for testable sections of the outline for the CHI™ examination and distributed evenly among the problems in each section Castle negotiated a range of scores below and just above the passing standard for the selection of candidates for rescoring by a third rater.

After the third ratings had been accomplished, Castle averaged them in equally with those of the first two the raters, applied the weights, added in the weight for the written translation problem, and developed the final weighted raw score for each candidate. Castle then employed classical linear equating for form 2 of the examination to calculate the scores that candidates on this form would have earned if they had taken form 1.

Statistical studies were also performed. Interrater reliability is the estimation of consistency between raters when they are scoring an examination that using subjective methods, such as anchored rating scales. Based on the ratings provided for each scale, Castle computed an overall Cronbach's alpha of 0.71, which estimates internal consistency, and the standard error of measurement at the cut score of 4.1. The intraclass correlation statistic that describes the relationship between ratings given by the two raters in the main scoring round is 0.73. Finally, the intraclass correlation that describes the relationship between mean problem scores for each rater is 0.85. These statistics are generally reasonable for the type of subjectively scored assessment that the CHI™ examination is.

After determining weighted raw scores, Castle computed descriptive statistics. The mean (average) weighted raw score, which conceivably could range from 0 to 100, for form 1 was 77.87 with a standard deviation of 17.23. For form 2 it was 77.01 with a standard deviation of 17.30.

When the two forms were assembled, every effort was made to ensure comparability in content and difficulty. Forms assembly also adhered to a common items design to permit statistical equating, and after weighted raw scores were computed, Castle loaded the scores into equating software it has developed for classical linear equating following the Tucker model. The common problems were identical for each form and located in precisely the same sequence to control for fatigue. As a result, differences that are found in candidate performance on the common items can be attributed to actual differences in the candidate groups taking each form. Linear equating uses candidate performance on the common items as a statistical control for candidate ability in computing the equated scores. Form 1 was established as the base form, and form 2 was equated to form 1.

The pass/fail standard for the CHI™ examination was established for the pilot test using the Extended Angoff Technique, a method that in recent years has become the standard for examinations of this type. The final step scoring the CHI™ examination was to scale the final equated, weighted raw scores to a range of 300 to 600, with the passing standard anchored at 450.

Appendix A: Timeline

AHI™ Examination Development

Exam Development	May-July, 2010
CCHI selects Subject Matter Experts (SMEs) for Item Writing Assignments & Distribution of Instructional Materials	
Castle Prepares Multiple-Choice Item Writing Instructional Materials & Submits to CCHI for Review with Approval	
Castle Distributes Multiple-Choice Item Writing Instructional Materials to CCHI Item Writer SMEs	
Castle Facilitates a 3-day Item Development Meeting with CCHI SMEs	
Castle Enters Multiple-Choice Items into Item Bank, Conducts Psychometric, Linguistic & Editorial Review & Prepares for Linguist Review	
Castle Prepares for Multiple-Choice Exam Assembly Meeting	
Exam Assembly & Content Review	**July-August, 2010**
Castle Facilitates a 2-day Multiple-Choice Exam Review and Assembly Meeting with CCHI SMEs	
Castle Updates Multiple-Choice Exam Items Based on Meeting Revisions & Conducts Psychometric & Editorial Review of the Assembled Exam Forms	
Castle Prepares & Submits Multiple-Choice Exam Forms to CCHI for Review with Approval	
CCHI Reviews and Approves Multiple-Choice Exam Forms	
Castle Updates Multiple-Choice Exam Forms (Based on CCHI Feedback)	
Second CCHI Review of Multiple-Choice Exam Forms	
Exam Loading & Quality Assessment	**August-September, 2010**
Castle Makes Final Revisions and Prepares Multiple-Choice Exams for Pilot Testing	
CCHI Reviews Loaded Multiple-Choice Exam Forms (Secure Online Access)	
Castle Makes Final Revisions to Multiple-Choice Exam Forms & Conducts Psychometric Quality Assurance	
Castle Conducts Internal & External Testing/Verification of Examination Scheduling, Examination Delivery, Scoring & Reporting Functions	
Computer-Based Pilot Testing	**October-November, 2010**
Castle & CCHI Collaborate to Define Appropriate Pilot Testing Population	
Deadline for CCHI to Provide Contact Information to Castle for Pilot Test Candidates	
Castle Issues Notice to Schedule to Pilot Test Candidates	
Castle Begins Scheduling Candidates for Pilot Testing	
Castle Administers Multiple-Choice & Oral Exams at Castle Proctored Testing Facilities	
Statistical Analysis of Pilot Test Results & Passing Point Determination	**November, 2010-January, 2011**
Castle Conducts Preliminary Statistical Analysis of Multiple-Choice Pilot Test Results	
Castle Facilitates Conference Call with CCHI to Verify Scoring Key & Identify Poorly Performing Items & CCHI Responds to Key Verifications	
Castle Makes Revisions to Scoring Key & Notifies IT to Rescore AHI™ Exam	
Castle IT Rescores AHI™ Exam & Submits Data to Psychometrician for Standard Setting Meeting	
Castle Facilitates 1-day Multiple-Choice Exam Passing Point Determination Meeting with CCHI Appointed SMEs	
Castle Compiles & Calculates Angoff Data & Provides CCHI with Recommended Passing Score for Form 1 of Multiple-Choice Exam	
CCHI Approves Form 1 Multiple-Choice Exam Passing Point	
Castle Equates Multiple-Choice Exam Form 2 (Form 2 Equated to Form 1 Passing Standard & Pilot Test Results)	

Castle Conducts Pilot Test Scoring & Proposes Scaled Scoring Method To CCHI	
Castle Submits Final Score Results for Pilot Test Candidates to CCHI in Electronic Format	
Castle Submits Cut-Score Report with Passing Score for AHI™ Multiple Choice Exam	
Castle Prepares & Submits Multiple-Choice Pilot Test Statistical Analysis Report to CCHI	

CHI™ Examination Development

| Exam Development	May-July, 2010
CCHI selects Subject Matter Experts (SMEs) for Item Writing Assignments & Distribution of Instructional Materials for CHI™ examination	
Castle Prepares CHI™ Oral Exam Instructional Materials	
Castle Distributes Oral Exam Instructional Materials to CCHI SMEs	
Castle Facilitates first 3-day Oral Exam Development Workshop with CCHI SMEs	
Castle Facilitates second 3-day Oral Exam Development Workshop with CCHI SMEs	
Castle Conducts Psychometric, Linguistic & Editorial Review of Oral Exam Prompts/Model Responses & Prepares for Linguist Review	
Castle Prepares for Oral Exam Assembly Meeting	
Exam Assembly & Content Review	**September-October, 2010**
Castle Facilitates 3-day Oral Prompts/Model Responses, Evaluation Scales/Scoring Criteria Review, Selection & Validation Workshop with CCHI SMEs	
Castle Updates Scenarios/Model Responses Based on Meeting Revisions & Conducts Psychometric & Editorial Review of the Prompts/Model Responses	
Castle Prepares & Submits Oral Exam Prompts/Model Responses to CCHI for Review with Approval	
CCHI to Reviews/Approves Oral Prompts/Model Responses & Scoring Criteria	
Finalization of Evaluation Scales with Rationales	**September 2010**
Castle Prepares Translated & Linguistically Approved Content for Validation Meeting	
Castle Facilitates 2-day Meeting to Finalize Evaluation Scales & Criterion Ratings with Rationales for Minimally Acceptable Performance and Establish the Passing Point with CCHI SMEs	
Castle Produces Audio Components of the Oral Exam (Including Scenarios/Model Responses for Evaluator Training & the Candidate Warm-up)	
Exam Loading & Quality Assessment	**September-October, 2010**
Castle Loads Audio Clips & Prepares Oral Exam Forms for Pilot Testing	
CCHI Reviews Loaded Oral Exam Forms (Secure Online Access)	
Castle Makes Final Revisions to Oral Exam Forms & Conducts Psychometric Quality Assurance	
Castle Conducts Internal & External Testing/Verification of Examination Scheduling, Examination Delivery, Scoring & Reporting Functions	
Computer-Based Pilot Testing	**October-November, 2010**
Castle & CCHI Collaborate to Define Appropriate Pilot Testing Population	
Deadline for CCHI to Provide Contact Information to Castle for Pilot Test Candidates	
Castle Issues Notice to Schedule to Pilot Test Candidates	
Castle Begins Scheduling Candidates for Pilot Testing	
Castle Administers Multiple-Choice & Oral Exams at Castle Proctored Testing Facilities	
Oral Exam Evaluator Training Program & Passing Point Determination	**November, 2010- January, 2011**
CCHI Identifies SMEs to be trained as Oral Exam Evaluators	
Castle Prepares Evaluator Training Manual & Scoring Worksheets for Oral Exam Evaluators	
Castle Submits Oral Evaluator Training Materials to CCHI for Review with Approval	
CCHI Approves Evaluator Training Materials	
Castle Facilitates 3-day Oral Exam Evaluator Training and Pilot Test Scoring Meeting with CCHI SMEs	

Castle Monitors Inter-rater Reliability of Evaluators
CCHI Evaluators Complete Independent Scoring Activities
Castle IT Submits CHI™ Stats to Psychometrician for Review
Castle Reviews CHI™ Stats & Identifies Evaluator Inconsistency in Rating Scale Performance & Submits Feedback to CCHI
CCHI Responds to Evaluator Inconsistencies in Rating Scale Performance
Castle Makes Revisions to Scoring & Notifies IT to Rescore CHI™ Exam
Castle IT Rescores CHI™ Exam & Submits Data to Psychometrician for Standard Setting Meeting
Castle Analyzes Score Results & Inter-rater Reliability Performance
Castle Facilitates 1-day Passing Point Determination Meeting for CHI™ Exam with CCHI SMEs
Castle Prepares & Submits CHI™ Cut-Score Report & CHI™ Pilot Statistical Analysis to CCHI (Report to Include Inter-Rater Reliability Analysis & Recommendations Regarding Oral Exam Revisions)

Appendix B: AHI™ Exam Statistical Analysis

Multiple-Choice Exam Statistical Analysis AHI™
Report Created: 22-FEB-2011

|			
Exam Analysis ID:	5927	Form Description:	CCHI Examination Part 1- Form 1
Examination ID:	334	Form ID:	1
Analysis Start Date:	18-Oct-10	Analysis End Date:	14-Nov-10
Number Candidates:	202	Scored Question Count:	82
Mean Score :	71.446	Low Score:	39
Variance:	45.532	High Score:	82
Standard Deviation :	6.748	Average Item Difficulty:	0.871
KR20:	0.843	Average Item Discrimination:	0.289
Brennan Kane :	0.999	Skewness (SE)	-2.010 (0.171)
Standard Error of Measurement (SEM) :	2.674	Kurtosis (SE)	5.165 (0.341)
SEM at Cut Score	3.671		
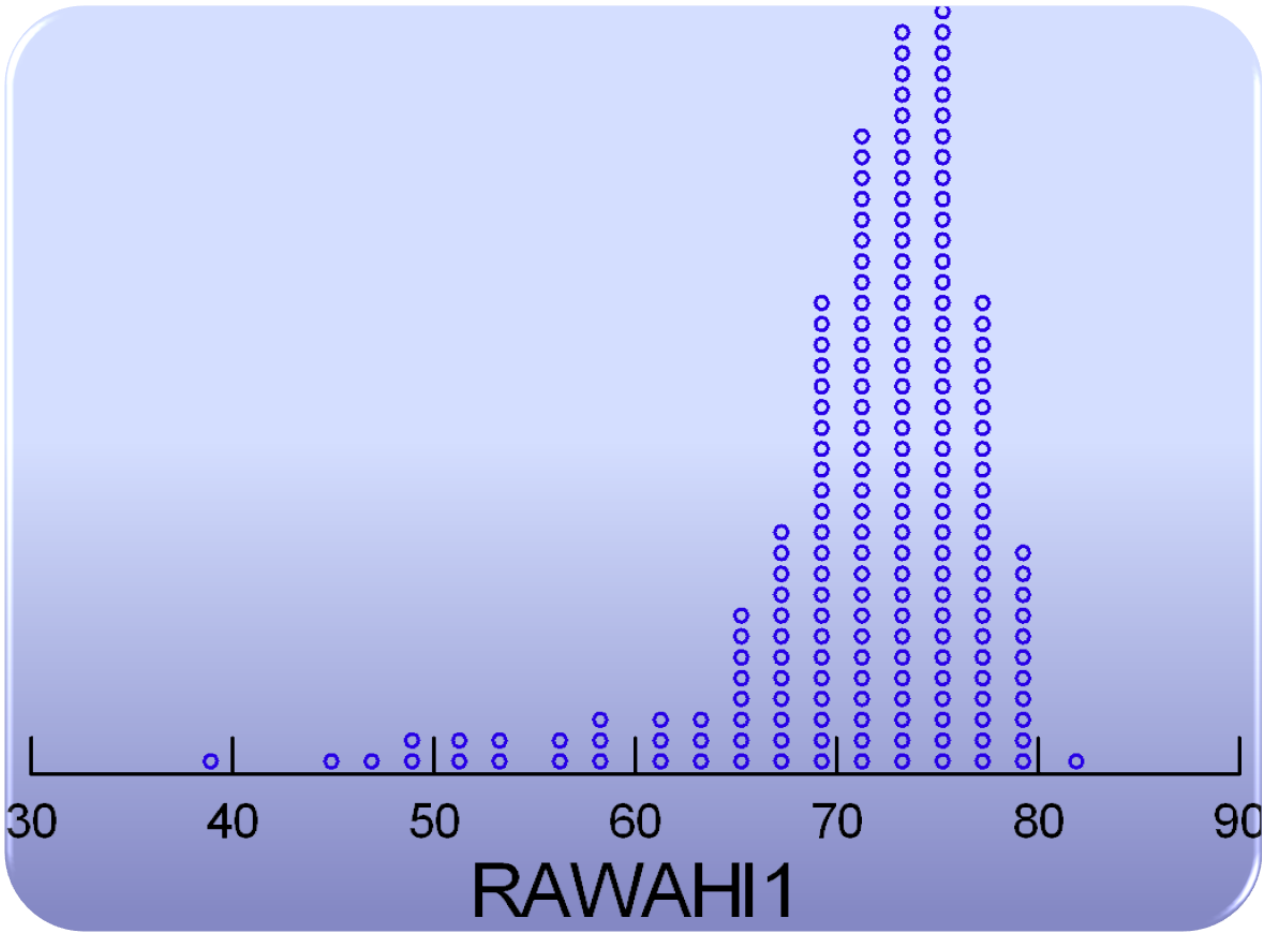
RAWAHI1

Multiple-Choice Exam Statistical Analysis
Report Created: 22-FEB-2011

|			
Exam Analysis ID:	5928	Form Description:	CCHI Examination Part 1 – Form 2
Examination ID:	334	Form ID:	2
Analysis Start Date:	18-Oct-10	Analysis End Date:	14-Nov-10
Number Candidates:	159	Scored Question Count:	82
Mean Score :	72.333	Low Score:	44
Variance:	35.857	High Score:	82
Standard Deviation :	5.988	Average Item Difficulty:	0.882
KR20:	0.807	Average Item Discrimination:	0.248
Brennan Kane :	0.999	Skewness (SE)	-1.616 (0.192)
Standard Error of Measurement (SEM) :	2.634	Kurtosis (SE)	4.248 (0.383)
SEM at Cut Score	3.589		

Figure:
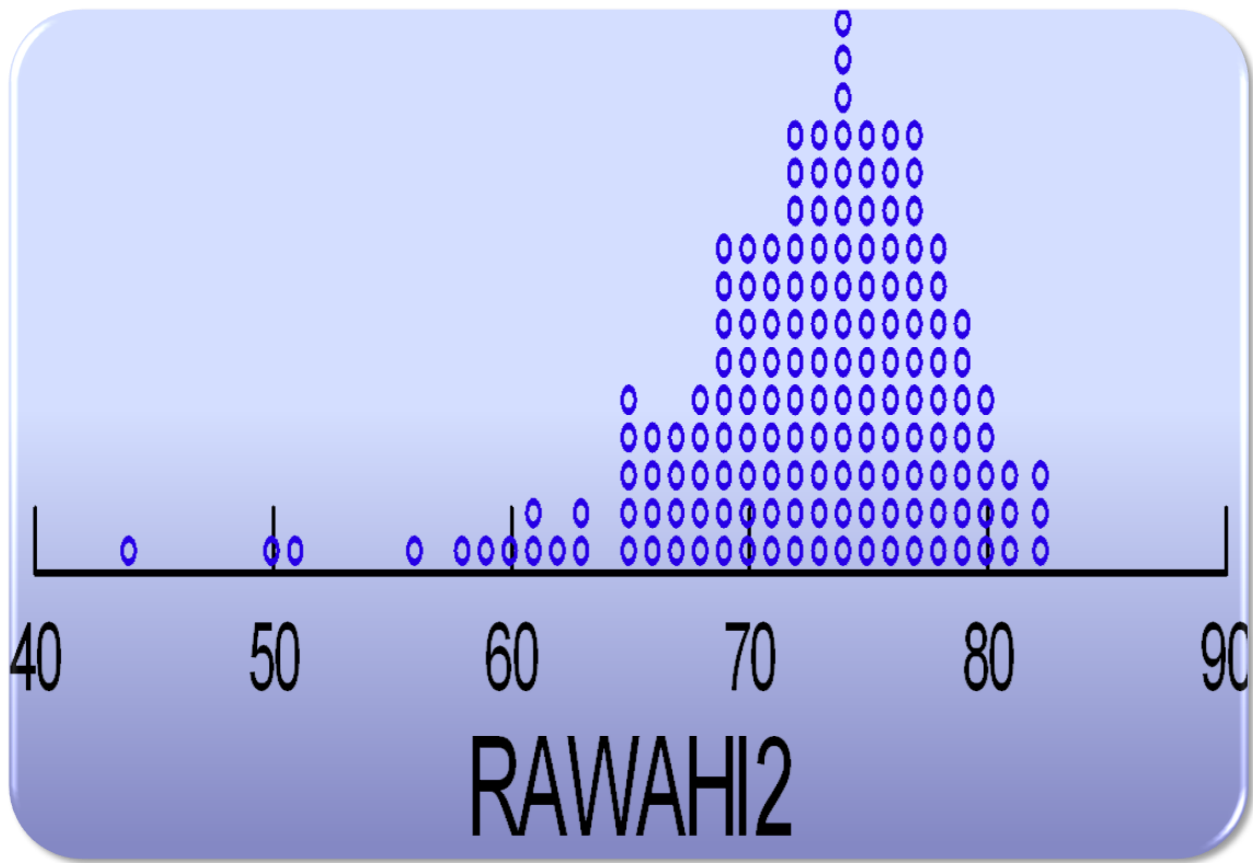
Appendix C: CHI™ Exam Statistical Analysis

Performance Exam Statistical Analysis
Report Created: 22-FEB-2011

|			
Exam Analysis ID:		Form Description:	CCHI Examination Part 2 – Form 1
Examination ID:	334	Form ID:	1-Feb
Number Candidates:	118	Scored Question Count:	8 Problems
Mean Score :	77.871	Low Score:	13.281
Variance:	296.697	High Score:	96.365
Standard Deviation :	17.225	Average Item Difficulty:	0.599
Coefficient Alpha:	0.71	Average Item Discrimination:	0.198
Brennan Kane :	0.714	Skewness (SE)	-1.72 (0.22)
Standard Error of Measurement (SEM) :	6.86	Kurtosis (SE)	2.71 (0.44)
SEM at Cut Score	4.118		
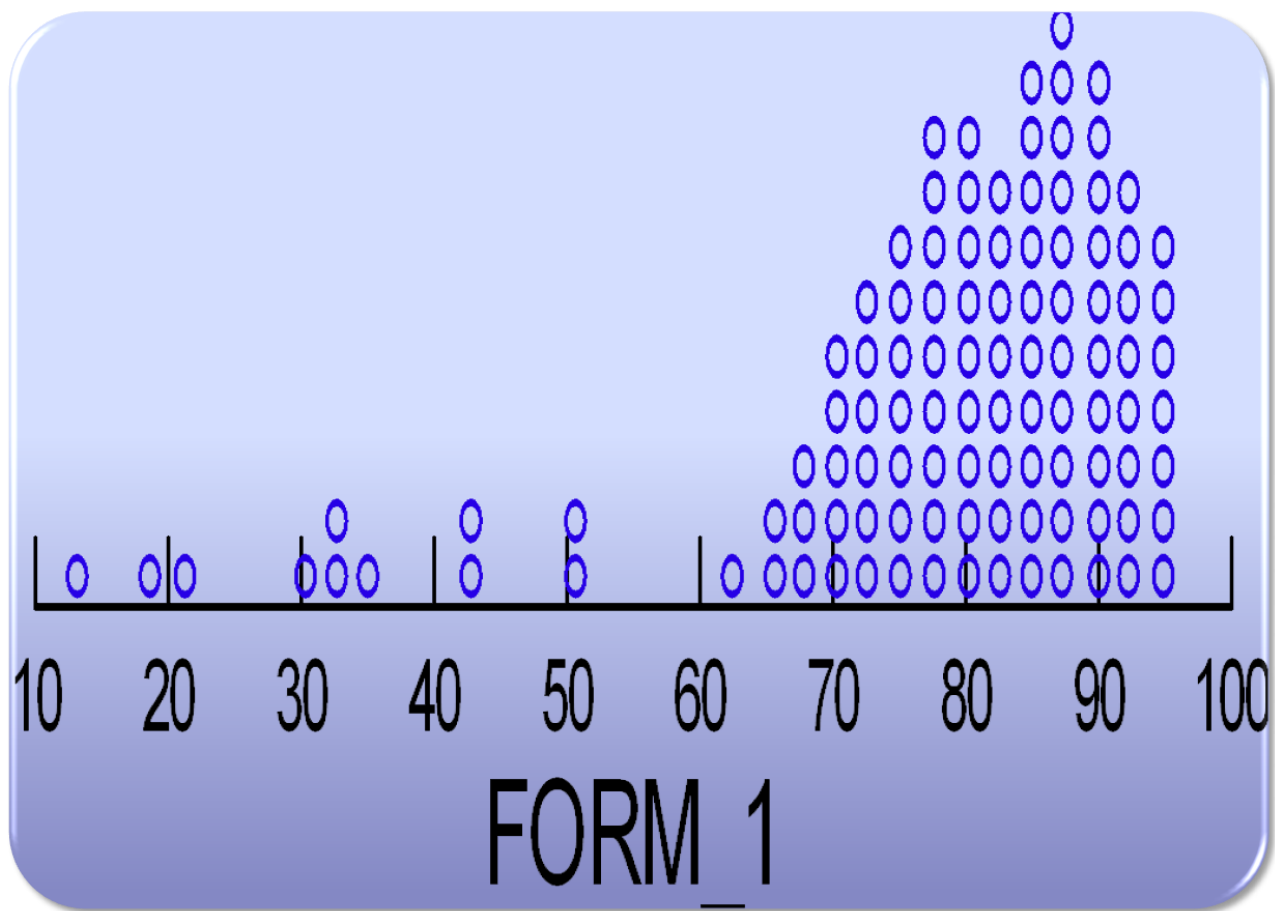
FORM_1

Performance Exam Statistical Analysis
Report Created: 22-FEB-2011

Exam Analysis ID:		Form Description:	CCHI Examination Part 2 – Form 2
Examination ID:	334	Form ID:	2-Feb
Number Candidates:	108	Scored Question Count:	8
Mean Score :	77.01	Low Score:	9.375
Variance:	299.233	High Score:	96.542
Standard Deviation :	17.298	Average Item Difficulty:	0.563
Coefficient Alpha:	0.734	Average Item Discrimination:	0.173
Brennan Kane :	0.745	Skewness (SE)	-1.57 (0.23)
Standard Error of Measurement (SEM) :	8.921	Kurtosis (SE)	2.45 (0.46)
SEM at Cut Score	4.118		

FORM_2
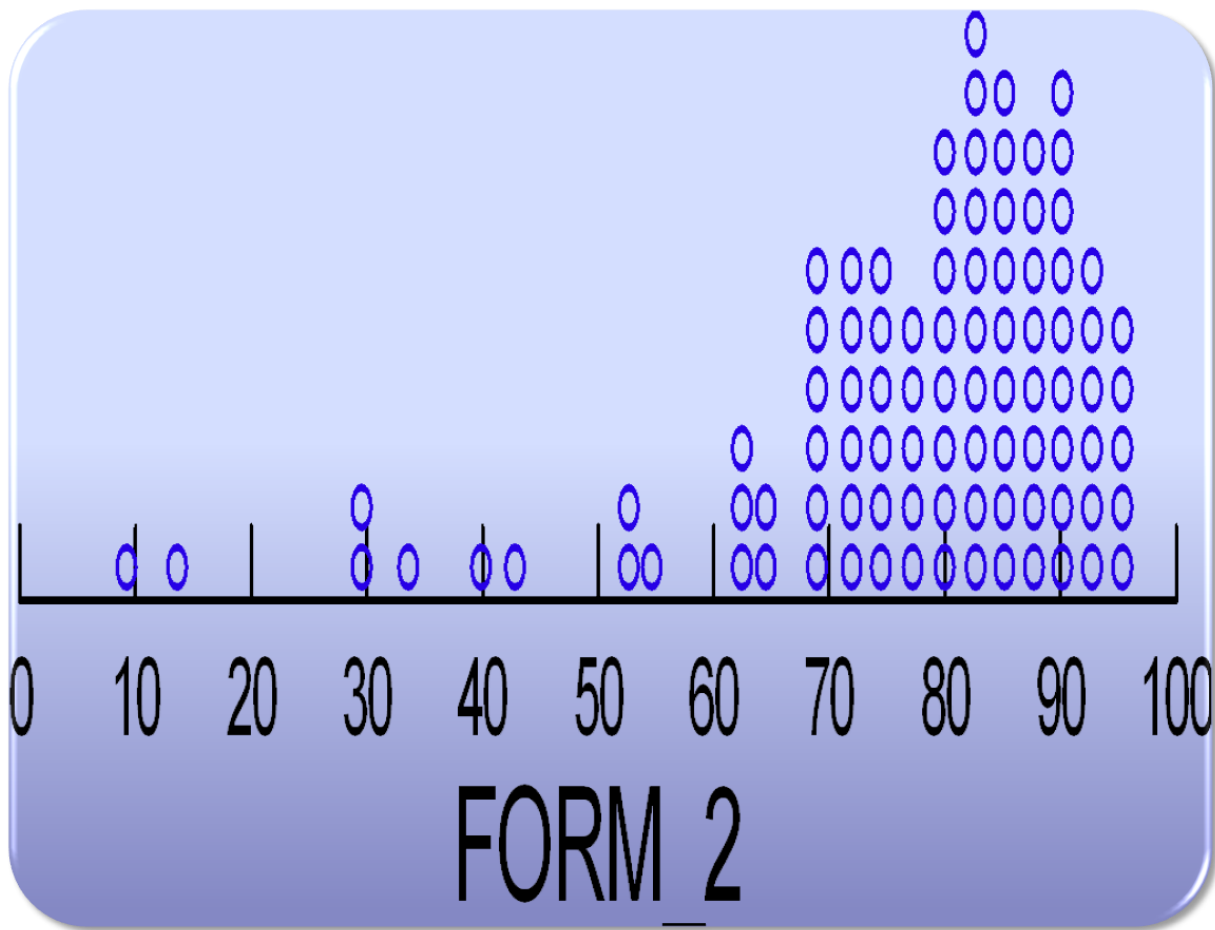
Appendix D: Qualifications of Subject Matter Experts

CCHI engaged in a rigorous process to screen and select all of its Subject Matter Experts to represent the depth and breadth of the interpreting profession. A national call for Subject Matter Experts was posted in CCHI's monthly newsletter, on its website, and on various other listservs.

Each Subject Matter Expert had to agree to CCHI's "Criteria &Policies for Advisors, Committee/Working Group Members and Subject Matter Experts" and sign CCHI's "Participation Agreement for Advisors, Committee/Working Group Members and Subject Matter Experts" in addition to specific Confidentiality Agreements required by Castle Worldwide.

Subject Matter Experts donated their time and experience. CCHI reimbursed Subject Matter Experts only for reasonable travel expenses.

For each panel of Subject Matter Experts, CCHI strove to ensure diversity based on a number of demographic factors including:

- Geography – diversity by areas of the country as well as diversity by urban, suburban and rural;
- Gender;
- Race and ethnicity;
- Age;
- Education;
- Languages in which SMEs interpret;
- Language background – native speakers, non-native speakers, and heritage speakers;
- Years of experience in healthcare interpreting;
- Consecutive and simultaneous interpreting;
- Interpreting mode – face-to-face/in-person, telephonic, video; and
- Practice setting – hospital, outpatient clinic, small private practice, public health, health plan/insurer.

Some SMEs participated in more than one panel so that they could help inform new SMEs of the prior work and answer any questions that arose. CCHI Commissioners did not serve as SMEs but attended SME meetings to assist with logistical matters or answer questions related to CCHI's operations.

The identification of CCHI's Subject Matter Experts is confidential information to ensure that candidates do not attempt to contact Subject Matter Experts to obtain confidential examination information.

CCHI Item Writers

Nine individuals participated as SMEs during a three-day workshop to write items for CCHI's AHI™ examination. These SMEs interpret in six different languages, including languages of broad, moderate and limited diffusion. These included: Bosnian, Russian, Spanish, Taiwanese and Vietnamese. Collectively, these individuals have over 84 years of interpreting experience. They also represent a mix of native, heritage and non-native English speakers. The SMEs came from all parts of the country with seven different states represented. SMEs also had experience in face-to-face, telephonic and video interpreting. SMEs worked in a variety of healthcare settings including hospitals, public health settings, small private practices, outpatient clinics, and in health education.

Ten individuals participated as SMEs during two, three-day meetings to write items for CCHI's CHI™ examination. While the majority of these were Spanish interpreters, CCHI also involved interpreters who interpret in other languages since an English template of the CHI™ examination was first developed which will be used for all future CHI™ examinations. That template was then trans-adapted into Spanish during this phase of test development. In addition to Spanish, these SMEs interpret in six languages including languages of broad, moderate and limited diffusion. These included: Cantonese, Hindi, Indonesian, Malaysian, Portuguese and Punjabi. Collectively, these individuals have over 108 years of interpreting experience. They also represent a mix of native, heritage and non-native English speakers. SMEs came from all parts of the country with ten different states represented. SMEs also had experience in face-to-face and telephonic interpreting. SMEs worked in a variety of healthcare settings including hospitals, small private practices, health plans, outpatient clinics, and in health education.

CCHI Item Reviewers

Nine individuals participated as SMEs during a two-day workshop to review items for CCHI's AHI™ examination. These SMEs interpret in six different languages including Arabic, French, Portuguese, Russian, Spanish and Taiwanese. Collectively, these individuals have over 83 years of interpreting experience. The SMEs came from all parts of the country with nine different states represented. SMEs also had experience in face-to-face and telephonic interpreting. SMEs worked in a variety of healthcare settings including hospitals, public health settings, small private practices, outpatient clinics, and in health education.

Twelve individuals participated as SMEs during a two-day workshop to review items for CCHI's CHI™ examination. These SMEs all interpret primarily in Spanish. Collectively, these individuals have over 111 years of interpreting experience. They also represent a mix of native, heritage and non-native English speakers. SMEs came from all parts of the country with ten different states represented. SMEs also had experience in face-to-face

and telephonic interpreting. SMEs worked in a variety of healthcare settings including hospitals, small private practices, health plans, outpatient clinics, and in health education.

CCHI Cut Score Participants

Six individuals participated as SMEs during a one-day workshop to determine the cut score for CCHI's AHI™ examination. These SMEs interpret in five different languages including Arabic, Bosnian, Romanian, Russian, and Spanish. Collectively, these individuals have over 38 years of interpreting experience. The SMEs came from all parts of the country with six different states represented. SMEs also had experience in face-to-face, telephonic and video interpreting. SMEs worked in a variety of healthcare settings including hospitals, small private practices, outpatient clinics, and in health education.

Seven individuals participated as SMEs during a one-day workshop to determine the cut score for CCHI's CHI™ examination. These SMEs all interpret primarily in Spanish. Collectively, these individuals have over 55 years of interpreting experience. The SMEs came from all parts of the country with six different states represented. SMEs also had experience in face-to-face and telephonic interpreting. SMEs worked in a variety of healthcare settings including hospitals, public health settings, small private practices, and outpatient clinics.

Appendix E: Qualifications of CHI™ Raters

CCHI engaged in a rigorous process to screen and select all of its CHI™ examination raters. A national call for raters was posted in CCHI's monthly newsletter, on its website, and on various other listservs.

Each rater had to agree to CCHI's "Criteria & Policies for Advisors, Committee/Working Group Members and Subject Matter Experts" and sign CCHI's "Participation Agreement for Advisors, Committee/Working Group Members and Subject Matter Experts" in addition to specific Confidentiality Agreements required by Castle Worldwide.

Raters donated their time and experience to score the examinations during the first administration of CCHI's CHI™ examination. CCHI reimbursed raters only for reasonable travel expenses.

The identification of CCHI's raters is confidential information to ensure that candidates do not attempt to contact raters to obtain confidential examination information about the examination or influence rating.

Raters who were selected to rate CCHI's CHI™ oral performance examination had to meet certain prerequisites. These prerequisites included:

- Minimum age of 18 years.
- At least five years of experience working as a healthcare interpreter as one of the following:
  - Staff – working in a full- or part-time (minimum .5 FTE) position (at a healthcare facility/provider or working for a language services agency)
  - Freelance – the majority of interpreting work must be health care-related.
- Have a minimum of U.S. high school diploma (or GED) or its equivalent from another country.
- Have at least 40 hours of healthcare interpreter training which may include any combination of the following:
  - adding up hours from multiple academic/non-academic courses;
  - completing continuing education courses;
  - attending interpreter conferences at which individual participated in workshops that discussed issues related to the practice of interpreting (rather than on issues related to policy developments or general research on language access);
  - developing and/or teaching healthcare interpreter training courses; or
  - on-the-job training.
- Have linguistic proficiency in English and Spanish (see description at http://www.healthcareinterpretercertification.org/certification/apply-now/143.html).

- Agree to abide by CCHI's *Conflict of Interest Policies* and sign CCHI's *Participation Agreement for Advisors, Committee/Working Group Members, and Subject Matter Experts.*
- Agree to all requirements to keep exam and scoring materials confidential.
- Not currently involved in training healthcare interpreters (or expected to be involved throughout 2011).
- If involved in training of healthcare interpreters after 2011, agree not to utilize information received as a rater to adapt a training program to help candidates prepare for CCHI's examination.
- Agree to all of the following:

  - Not to inappropriately discuss the performance of an examinee.
  - Not to intentionally score an examinee's performance differently from other examinees.
  - Participate in all required training.
  - Not to use any examination content in a way that compromises the integrity and confidentiality thereof.
  - Not to willfully or negligently compromise the security of any examination materials including, but not limited to, examination CDs and examination scripts.
  - Comply with the rules, scoring mechanics, and directions contained in the Rater Manual.

CCHI strove to ensure diversity of raters based on a number of demographic factors including:

- Geography – diversity by areas of the country as well as diversity by urban, suburban and rural;
- Gender;
- Race and ethnicity;
- Age;
- Education;
- Languages in which SMEs interpret;
- Language background – native speakers, non-native speakers, and heritage speakers;
- Years of experience in healthcare interpreting;
- Consecutive and simultaneous interpreting;
- Interpreting mode – face-to-face/in-person, telephonic, video; and
- Practice setting – hospital, outpatient clinic, small private practice, public health, health plan/insurer.

CCHI Raters

Sixteen individuals participated as SMEs for a three-day workshop to review and score items for CCHI's CHI™ examination. These SMEs all interpret primarily in Spanish. Collectively, these individuals have over 145 years of interpreting experience. SMEs came from all parts of the country with eleven different states represented. SMEs also had experience in face-to-face, telephonic and video interpreting. SMEs worked in a variety of healthcare settings including hospitals, small private practices, health plans, outpatient clinics, and in health education.