The CSI-CY: A New Tool to Aid in Communication Goal Development

Charity Rowland
Melanie Fried-Oken
Sandra M. Steiner
Don Lollar
Oregon Health & Science University
Portland, Oregon USA

ISAAC 2014
Lisbon, Portugal
Goals today

1. Justify use of the ICF-CY for AAC
2. Present a description of the instrument
3. Go through a guided completion of the CSI-CY
3. Discuss research findings and the usefulness of the CSI-CY for AAC goal development
THE CHALLENGE

There is no standard developmental set of skills that can guide AAC goal development.
The Problem

- Don is a 4 year old child who relies on AAC with Down Syndrome and Metabolic Strokes
- The ICD-10 describes him as 758.0
- What does this say about Don’s functional communication?
ICD codes ≠ child’s functional communication

• Individuals with CCN have communication difficulties related to a variety of different health conditions
• Health condition alone → intervention methods? NO!
• Function in different environments + health condition = appropriate intervention methods
A Solution: The ICF-CY

- ICF-CY: International Classification of Functioning, Disability and Health - Child & Youth version
- Developed by the World Health Organization (WHO) to complement the ICD
- Designed to describe the *functional status* of individuals in a standardized manner
Why ICF-CY?

- **Systematic** coding scheme
- *Function*, instead of etiology or diagnosis (unlike ICD)
- *Common language* for professionals, persons with disability, family members & the public worldwide
- Can be used across *education, medical and social services.*
The ICF works especially well for AAC learners, because it separates speech functions from communication functions.
ICF-CY system

- **Body Structures** sometimes different or not present
- **Body Functions** may vary due to structure
- **Activities and Participation** may be limited and life situations restricted due to functions
- **Environment**: facilitators and barriers in every environment that affect participation
“The ICF fits our international AAC community like an old shoe that we have been wearing for many years.”  Fried-Oken and Granlund (2012)
From WHO document to CSI-CY Profile

Published manual of codes

On-line interactive CSI-CY Inventory

ISAAC 2014
Using the ICF as an Organizational Framework to Improve Communication Goals for AAC Users

- Population: School-aged children (in U.S.) who use AAC or are candidates for AAC
- Goal 1: Develop and evaluate the CSI-CY to describe communication strengths and needs of children who use AAC
- Goal 2: Use the CSI-CY to guide communication goal development
Two-part CSI-CY

1. **Code Set surveys:**
   – participation restrictions,
   – communication limitations,
   – functional reasons for them,
   – environmental facilitators and barriers

2. **Report:** prioritizes identified items to facilitate IEP goal development process

ISAAC 2014
Current Version

• 112 items in 14 sections
• Plus 1 open-ended text box for each of 14 sections
• Total items = 126
• The ICF-CY codes are listed next to each item
www.csi-cy.org

CSI-CY

Communication Supports Inventory- Children & Youth (CSI-CY)

For children who rely on augmentative and alternative communication (AAC)

Authors: Charity Rowland, Ph. D., Melanie Fried-Glenn, Ph. D., CCC-SLP and Sandra A. M. Steiner, M. A., CCC-SLP

The Communication Supports Inventory- Children & Youth (CSI-CY) is a tool to help professionals working with students with complex communication needs make educational plans that are comprehensive enough to capture their strengths and restrictions. The CSI-CY is designed to make goal writing easier for teachers and speech-language pathologists who work with students who are augmentative and alternative communication (AAC) users or potential users. By itself, it is not an assessment, but rather a guide to organize the professional's understanding of the impact of a student's communication strengths and limitations on their participation at school and home. The Inventory consists of a survey and a report. The World Health Organization developed the International Classification of Functioning, Disability and Health-Children and Youth Version (ICF-CY) in 2007 to provide a global common language for describing the impact of health conditions and disabilities on human functioning. This Inventory uses that same global common language. It utilizes the broad perspective on function and disability of the ICF-CY to characterize students who use AAC.

Use the CSI-CY Online Now | Download a PDF of the CSI-CY
Download the CSI-CY Code Set:

www.icfcy.org/aac

(ISAAC handout)
Participation Restrictions:

1. School-related Activities
2. Interpersonal Relationships
Communication Limitations:

Rate limitations in...

1. Receptive Language and Literacy
2. Expressive Language and Literacy
3. Functions of Communication
4. Rules of Social Interaction in Conversation
5. AAC: Receptive Communication
6. AAC: Expressive Modes and Strategies
7. AAC: Motor Access
Body Functions:

Rate impairments that limit communication...

- Hearing
- Vision
- Touch
- Oral Motor
- Respiratory
- Intellectual
- Gross and Fine Motor

ISAAC 2014
Environmental Barriers and Facilitators*

1. Physical environment
2. Assistive technology
3. People
4. Services and policies

*This often corresponds to the special education and related services and supplementary aids and services sections of the IEP.
64. Other social interaction rules? Write in response.

Augmentative and Alternative Communication: Receptive Strategies

Considers the student’s understanding of the symbols included in a particular AAC system, such as understanding the meaning of PECS cards or manual signs.

65. Comprehending the meaning of body gestures (eg., facial expressions, posture, hand gestures, movements)

- Skills are above those of typical peer
- No limitation
- Mild limitation
- Moderate limitation
- Severe limitation
- Complete limitation
- Not applicable
- Don’t know

ICF-CY Code: d3150
HELP?

66. Comprehending 3-dimensional objects/representations used to communicate

- Skills are above those of typical peer
- No limitation
- Mild limitation
- Moderate limitation
- Severe limitation
- Complete limitation
- Not applicable
- Don’t know

ICF-CY Code: d3150
HELP?

67. Comprehending the meaning of drawings and photographs used to communicate

- Skills are above those of typical peer
- No limitation
- Mild limitation
- Moderate limitation
- Severe limitation
- Complete limitation
- Not applicable
- Don’t know

ICF-CY Code: d3152
HELP?
Take a trip with us through the CSI-CY

Let’s describe Nicole, a 6 year old girl with Rett Syndrome....
Meet: Nicole  
Age: 6 years  
Medical Diagnosis: Rett Syndrome

CURRENT COMMUNICATION IMPAIRMENT  
• Profound expressive and receptive communication impairment

BACKGROUND INFORMATION  
• **Personal/Social:** Nicole was born prematurely and was diagnosed with Rett Syndrome at the age of two years. Due to this neurodevelopmental condition, she has orthopedic impairments, constant hand wringing, inability to speak, and digestive issues. She has received speech therapy for three years and recently received a Tango speech generating device, which she brings to school. She is non-ambulatory and non-verbal, but definitely can get her needs met by vocalizing with laughter, protests, crying, smiles, and eye contact. She presents as a happy child who loves attention. She enjoys human contact and only complains when she is in discomfort.
Complete CSI-CY at www.csi-cy.org

Communication Supports Inventory- Children & Youth (CSI-CY)

For children who rely on augmentative and alternative communication (AAC)

Authors: Charthy Rowland, Ph. D., Melanie Fried-Giken, Ph. D., CCC-SLP and Sandra A. M. Steiner, M. A., CCC-SLP

The Communication Supports Inventory- Children & Youth (CSI-CY) is a tool to help professionals working with students with complex communication needs make educational plans that are comprehensive enough to capture their strengths and restrictions. The CSI-CY is designed to make goal writing easier for teachers and speech-language pathologists who work with students who are augmentative and alternative communication (AAC) users or potential users. By itself, it is not an assessment, but rather a guide to organize the professional's understanding of the impact of a student's communication strengths and limitations on their participation at school and home. The Inventory consists of a survey and a report. The World Health Organization developed the International Classification of Functioning, Disability and Health—Children and Youth Version (ICF-CY) in 2007 to provide a global common language for describing the impact of health conditions and disabilities on human functioning. This Inventory uses that same global common language. It utilizes the broad perspective on function and disability of the ICF-CY to characterize students who use AAC.

Use the CSI-CY Online Now | Download a PDF of the CSI-CY
Finish Nicole’s CSI-CY

To resume the survey where you left off, please go to
Profile Report

ICF-CY for AAC, survey 1028

Areas of Concern

Communication Limitations
Receptive Language and Literacy
22. Intentionally attending to human, text and/or voice

Expressive Language and Literacy
32. Using body language, facial expressions and gestures to communicate

Functions of Communication
45. Refusing or rejecting something

Rules of Social Interaction in Conversation
55. Orienting towards communication partner through eye contact or body positioning

Augmentative and Alternative Communication: Neoeptive Strategies
56. Comprehending the meaning of manual sign language (e.g., ASL, finger spelling, signed English, etc.)
57. Comprehending the meaning of body gestures (e.g., facial expressions, posture, hand gestures, movements)
58. Comprehending the meaning of AAC signs/symbols (e.g., MinSpeak icons, Bliss symbols)

Augmentative and Alternative Communication: Expansive Modes and Strategies
71. Using 3-dimensional objects/representations to communicate

Impairments in Body Functions that Limit Communication

Hearing function
91. Hearing function

Environmental Factors that Serve as Barriers or Facilitators for Communication

Assistive Technology
109. Assistive products and technology for generalized use in school (e.g., prosthetic and orthotic devices; glasses, hearing aids, cochlear implants, etc.)

People
113. Knowledge of skills needed to support communication in school (e.g., knowing manual sign language, knowing how to use the communication device, etc.)

Better than average skills and environmental facilitators

Environmental Factors that Serve as Barriers or Facilitators for Communication

Assistive Technology
154. Adapted or specially designed HOH tech products/technology developed for the purpose of improving communication (e.g., speech generating device, FM system, specialized writing device)

People
111. Providing physical support at school (e.g., supporting body posture appropriately, making glasses available, etc.)
112. Providing emotional support at school
114. Providing physical support at home

ISAAC 2014
Research Studies
What is the relationship between items prioritized on *CSI-CY* and goals on pre-existing IEPs?

- Do IEPs include goals that relate to items in the CSI-CY subsections?

- Do the items prioritized in the CSI-CY also appear as IEP goals for the student?
Who participated?

- **N =** 35 SLPs and Special Educators (40% SE; 54% SLP; 6% other)
- From 15 states
- **Work settings:** Elementary (34%), Middle School (29%), Secondary (37%)
- **Knowledge of AAC:** Expert/Great deal (33%), Moderate (58%), Little (7%)
- **Disability of targeted students:** autism (31%), CP (20%), intellectual disability (17%), other (31%)
IEP data

• Great variety in the 35 IEPs

• #Goals & objectives per IEP:
  – Mean = 9.2; range = 1-20

• #Accommodations/Services per IEP:
  – M = 3.7; range = 1-11
What’s missing from the current IEPs?

- These CSI-CY subsections were prioritized BUT had no or few IEP goals:
  - Rules for social interaction
  - AAC- Motor
  - Body functions*
  - Environment: People
  - Environment: Services and policies*

* May be difficult to address in IEPs.
What overlaps are there in IEP goals and CSI-CY priorities?

<table>
<thead>
<tr>
<th>CSI-Subsection</th>
<th>% participants who prioritized subsection and included IEP goals</th>
</tr>
</thead>
<tbody>
<tr>
<td>School Activities</td>
<td>31%</td>
</tr>
<tr>
<td>Interpersonal Relationships</td>
<td>14%</td>
</tr>
<tr>
<td>Receptive Language &amp; Literacy</td>
<td>31%</td>
</tr>
<tr>
<td>Expressive Language &amp; Literacy</td>
<td>26%</td>
</tr>
<tr>
<td>Functions of Language</td>
<td>40%</td>
</tr>
<tr>
<td>AAC-Receptive Language &amp; Literacy</td>
<td>11%</td>
</tr>
<tr>
<td>AAC-Expressive Language &amp; Literacy</td>
<td>40%</td>
</tr>
<tr>
<td>Environment/AT</td>
<td>40%</td>
</tr>
</tbody>
</table>

ISAAC 2014
Data Interpretation

• Some prioritized CSI-CY items do appear as goals in many IEPs.
• There are ICF constructs that do not appear in IEP goals.
• There is great variability in goal development for children who rely on AAC.
Does the **CSI-CY** Influence Development of *Subsequent* IEP goals?

- Does use of the CSI-CY affect goal development?
- Will we see a difference in goals if SE/SLPs complete the CSI-CY before an IEP meeting?
- Do SLPs and SEs report that using the CSI-CY helps with goal development?
Methods

- 61 SLPs and Special Educators (69% SE; 30% SLP)
- Experimental group (N=36): Complete the CSI-CY before attending an IEP meeting
- Control group (N=25): ‘Business as usual.’
- All participants: Send the completed new IEP after meeting.
- Outcome: Ratings of IEP goals developed with vs without use of CSI-CY
Data Sources

• Coders were blinded to whether the IEP came from the experimental or control groups.

• From each IEP, all communication-related goals & objectives, accommodations, modifications and services were extracted.

• Each item was coded with the 14 CSI-CY subsections.

• The # of CSI-CY subsections addressed per IEP was calculated.
IEP data

• Great variety in the 35 IEPs
• #Goals & objectives per IEP:
  – Mean = 8.7; range= 1-22
• #Accommodations/Services per IEP:
  – M= 6.3; range= 1-15
IEP trends: Goals that appeared in IEPs more after CSI-CY completion

<table>
<thead>
<tr>
<th>Subsection</th>
<th>Control IEPs (no CSI-CY use)</th>
<th>Experimental IEPs (after CSI-CY use)</th>
</tr>
</thead>
<tbody>
<tr>
<td>School Activities</td>
<td>35%</td>
<td>47%</td>
</tr>
<tr>
<td>Interpersonal Relationships</td>
<td>23%</td>
<td>33%</td>
</tr>
<tr>
<td>Receptive Lang &amp; Literacy</td>
<td>65%</td>
<td>75%</td>
</tr>
<tr>
<td>Expressive Lang &amp; Literacy</td>
<td>77%</td>
<td>83%</td>
</tr>
<tr>
<td>Functions of Language</td>
<td>77%</td>
<td>94%</td>
</tr>
<tr>
<td>AAC-Motor</td>
<td>0%</td>
<td>6%</td>
</tr>
</tbody>
</table>
Data Interpretation

• An attitude shift? It’s reinforcing to see that the participation subsections increased in IEPs. We need to stress function and integration of AAC, not just learning to use the device.

• The neurotypical language and function subsections increased for AAC IEPs. Perhaps the IEPs are reflecting the importance of language foundation, and how to apply developmental language and literacy skills to device use for AAC implementation.
Future Options

• Codify the iterative PROCESS that we have developed for use by other groups to generate code sets for a specific health condition or functional problem

• Apply the AAC codes to electronic medical records

• Develop a parent version of Profile that could be used to mediate conflicts between home/school

Murphy, J. and Boa, S. Using the WHO-ICF with Talking Mats as a goal setting tool.


Granlund, M., and Pless, M. Implementation of the International Classification of Functioning, Disability and Health (ICF/ICF-CY) and how this relates to Augmentative and Alternative Communication.

Simeonsson, R., Bjork-Akesson, E. and Lollar, D. Communication, disability and the ICF-CY.
Our team

Funded by:
The Institute of Education Sciences
U. S. Dept. of Education
Grant #R324A090028
Charity Rowland, PI

www.icfcy.org/aac

• Code Set
• Reference list
• Publications
• Presentations

ISAAC 2014