

The Child-Adult Medical Procedure Interaction Scale (CAMPIS)

and

The Child Adult Medical Procedure Interaction Scale-Revised (CAMPIS-R)

The CAMPIS was first used in the study by:

Blount, R.L., Corbin, S.M., Sturges, J.W., Wolfe, V.V., Prater, J.M., James, L.D. (1989). The relationship between adult's behavior and child coping and distress during BMA/LP Procedures: A Sequential analysis. *Behavior Therapy*, 20, 585-601.

The CAMPIS-R was first used in the paper by:

Blount, R.L., Sturges, J.W., & Powers, S.W. (1990). Analysis of child and adult behavioral variations by phase of medical procedure. *Behavior Therapy*, 21, 33-48.

The validity study associated with the CAMPIS-R is:

Blount, R. L., Cohen, L. L., Frank, N. C., Bachanas, P. J., Smith, A. J., Manimala, M. R., & Pate, J. T. (1997). The Child-Adult Medical Procedure Interaction Scale-Revised: An assessment of validity. *Journal of Pediatric Psychology*, 22, 73-88.

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CAMPIS CONTENT CODES**ADULT VOCALIZATIONS*****ADULT TO ADULT***

1. HMA Humor Directed to Adults
2. NPTA Nonprocedure-Related Talk To Adults
3. PTA Procedure-Related Talk To Adults
4. SMC Commands For Managing Child's Behavior

***ADULT TO CHILD***

5. HMC Humor Directed To Child
6. NPTC Nonprocedure-Related Talk To Child
7. CCS Command To Use Coping Strategy
8. CPA Command To Engage In Procedural Activity
9. PRAS Praise
10. CRIT Criticism
11. NPC Notice Of Procedure To Come
12. REASU Reassuring Comment
13. GCC Giving Control To The Child
14. APOL Apology
15. BCC Behavioral Commands To The Child
16. CST Checking Child's Status
17. EMP Empathy

***ADULT TO EITHER ADULT OR CHILD***

18. CGST Child's General Condition Related Talk
19. CGSC Current General Status Comments

**CHILD VOCALIZATIONS**

20. CRY Crying
21. SCRM Scream
22. VRES Verbal Resistance
23. EMSUP Emotional Support
24. VFEAR Verbal Fear
25. VPAIN Verbal Pain
26. VEMOT Verbal Emotion
27. INSEK Information Seeking
28. CIA Child Informs About Status
29. RRD Request Relief From Nonprocedural Discomfort
30. MCOP Making Coping Statement
31. NPTC Nonprocedural-Related Talk By The Child
32. APV Assertive Procedural Verbalizations
33. CGCT Child's General Condition Related Talk
34. BRTH Audible Deep Breathing
35. HUM Humor By The Child

**Codes for Staff/Parent Behaviors during BMA/LPs**

Speaker Codes: Resident (1)  
Nurse (2)  
Mother (3)  
Father (4)  
Child (5)  
Other (8)

## Verbal Codes

Humor directed to adults (HMA) or Humor directed to child (HMC). Any statement that is clearly intended to be humorous and is primarily lighthearted in tone. Humor is often accompanied by laughter from the person making the statement and may evoke laughter in the patient or in other staff members. Sarcasm may be coded as humor if it is accompanied by laughter on the part of the speaker or on the part of the listener. Sarcasm is not coded as humor if it is accompanied by an anger or harsh tone of voice.

1. Outright jokes of the "one-liner" variety.
2. Statements that suggest purely facetious, outlandish, or outrageous ideas.
3. Statements that emphasize the humorous aspects of a situation or problem.
4. Statements which present lighthearted criticism of someone else in such a manner that would be lightly received (e.g., "Oh you silly duck!").
5. "Sure, working on Sunday is my top priority."
6. Laughter (generally coded + for affect).

Nonprocedure-related talk directed toward child (NPTC). Talk that does not pertain to the treatment procedure or about the child's illness.

1. Conversations about the child's pet, siblings, parents, school, motorcycles, toys, etc.
2. Questions, unrelated to the child's illness or treatment, about the child's plans, wants, desires, etc.
3. Conversations about activities on the ward or about other children or staff members on the ward.

Non-procedure related talk directed toward other adults (NPTA). Talk that does not pertain to the treatment procedure or the child's illness.

1. "Did you drive in this morning?"
2. "How is the new baby doing?"
3. Questions about parents, other child, spouse, home, garden, the nurse on 3-south, etc.
4. "Susie embarrassed me last night with her comments about the lady across the hall."

Procedure-related talk-Adult to Adult (PTA). Any talk that directly pertains to the current treatment procedures. Comments about past treatment procedures are included in this category only if they relate to what is going on now. Commands included in this category may related to actual physical manipulation of the child (ex. "Help him curl up in a ball."), as this relates to the ongoing procedures and is not issued as a result of child distress behavior. Not included in this category are commands or suggestions related to managing the child's distress behaviors during the procedures ("Hold his legs."). The implication is that he is moving about and should be restrained–Code this a s Commands or suggestions for Managing the Child's Behavior.)

5. "Hand me the betadine, please."
6. "Give me a swave."
7. "I can't find the marrow."
8. "How much spinal fluid do you need?"
9. "Is it dripping?"
10. "Are you using lidocane today?"
11. "It's not dripping yet."
12. "I'm Dr. Smith. I will be doing the procedure today."
13. "You need to stand over here."
14. "Would you hand me some #7 gloves?"
15. "How many of these tubes do we use?"
16. "This isn't the usual bone marrow procedure!"
17. "Is it dripping yet?"
18. "Roll him over."
19. "Curl him up in a ball."

Child's general physical condition related talk (CGCT). Questions or comments about the child's history or future health care. For example, comments could refer to the BMA if that procedure is done and resident is currently conducting the LP. These comments must relate to the child's illness or treatment.

1. Questions about the child's history.
2. Parent's request for information.
  - A. "How long does it take to get results back?"
  - B. "Will she have to come back tomorrow?"
  - C. "She thought she was going to have to have this every week."
  - D. "How many visits do we have to make?"
  - E. "When does Dr. Grush believe her medication will be changed?"
  - F. "Does Janie have to have chemo next time we visit?"
  - G. "Is she having any problems with vomiting?"
  - H. "How does she like her wig?"
  - I. "Last time he got too much valium, he didn't do too well during the procedures."
3. Child comments such as:
  - A. "That time it took a long time." (Referring to something about the procedure.)
  - B. "The other doctor washed too hard last time."

Current general status comments (CGSC). Comments by adults regarding the child's current physical, emotional and/or behavioral status. Merely an observation rather than a comment directed toward changing that which is observed would qualify for this category.

1. "She seems to have labored breathing today."
2. "He has stiff muscles."
3. "Johnny, your muscles are tight."
4. "He is upset today."
5. "Boy is she out of it."

Command to use coping strategy (CCS). Any orders, suggestions, or statements of a rule, which direct the child to engage in a coping behavior. These strategies are generally issued immediately prior to a painful event, and may suggest one (but not exclusively one) of the following: relaxation, distraction, use of coping statements, or deep breathing. An example such as "Can you breath now" is coded CCS in spite of it giving he impression of control to the child (GCC).

1. "Use you deep breathing now."
2. "Would you like to count backwards from 10 very slowly?"
3. "Imagine you are Superman and this is a test of your strength."
4. "Squeeze your mother's hand when you feel the bumble bee."
5. "Just relax, alright?"

Command to engage in procedure-related activity (CPA). Any orders, suggestions, or statements of a rule, which directs the child to engage in some procedure-related activity. Common commands might include asking the child to prepare his/her pajamas for the wash, telling the child to curl up for the LP, asking a child to move a part of his/her body, or asking the child to tell them when something hurts.

1. "It's time to roll up in a ball for the LP."
2. "Could you move your hand so that I can fix the IV?"
3. "You need to turn over for the wash."
4. "Tell me when this hurts, OK?"

Praising (PRAS). Any statement referring to the child or the child's prior, ongoing, or future behavior that is positive in evaluation, shows approval or is rewarding.

1. The positive behavior is specified: e.g., "You used your deep breathing very well."
2. The positive behavior is not specified: e.g., "Great." "There you go!"
3. Descriptions of child's behavior denoting better-than-average performance: e.g., "Tommy is doing so well!" or "You are really being braver than ever!"

Criticism (CRT). Any verbalization that finds fault or implies fault with the (a) activities, (b) products, or (c) attributes of the child. Criticisms include negatively evaluative adjectives or adverbs referring to the child, statements of disapproval, statements pointing out something wrong about the child or the child's behavior, and statements pointing out that the child is not doing something positive. Also included as Criticism are obvious sarcastic statements, if these are unaccompanied by laughter on the part of either the speaker or listeners. Usually, criticism is accompanied by a harsh voice tone.

1. "Timmy has not been going to school the way he should have."
2. "Boy, you are in a bad mood today."
3. "That was not a very nice thing to say."
4. "That was not very funny."
5. "You didn't use you breathing that time like I told you to."
6. "Boy, you really controlled yourself that time." (After child let out a big scream).
7. "You're being a pain."

Notification of procedure to come (NPC). Any statement denoting that a procedure is about to occur, including the wash, the "bee sting," the "stick," etc. If the same information is repeated by the parents or staff, either without the child's request for reassurance or emotional support, or with the child asking for mere repetition of the information, code the subsequent notification as NPC.

1. "Okay, here comes the wash."
2. "Now, it gonna be just a little bee sting."
3. "One more stick."
4. "This is going to feel cold."
5. "Dr. Powell is going to put on her gloves now, O.K."
6. "It's that soap."
7. "I'm going to give you a little break" (to let the anesthetic work).

Reassuring Comment (REASU). Procedures related comments that are directed toward the child with the intent of reassuring the child about his/her condition, or the course of the procedure. These may be volunteered by staff and/or parents and may be in response to questions by the child or may reflect the child's comments. If procedure related information is repeated in response to the child's request for reassurance or emotional support, code these procedural notifications as RC.

1. "A little bit of exercise will take care of that." (In response to the child's comment re. some soreness)
2. "You're O.K."
3. "It's almost over."
4. "We're hurrying."
5. "Honey, it's just soap. O.K."
6. "I'm not doing anything."
7. "Just touching honey."

Giving control to child (GCC). Any statement to child denoting that child has control over some event to occur

with relation to the procedure. Generally this includes staff suggestions where the child is given a choice about the procedure. "Can you breathe now?" is coded CCS even though it has the impression of giving control to the child.

1. "Let me know when you are ready to start."
2. "Which side would you like to lie on?"
3. "Do you want a pillow for your head?"
4. "Do you like it better when we tell you or don't tell you?"
5. "Can you start now?"
6. "Are you ready?"

Apologizes (APOL). Any statement relating a sense of sorrow or a sense of responsibility for the pain the child is expressing. These statements may occur prior to, during, or after a painful event, and may occur in conjunction with other verbal codes.

1. "Timmy, we don't like doing this either."
2. "I'm sorry this is taking so long."
3. "I wish I didn't have to hurt you."

Commands or suggestions for managing child's distress behavior (SMC). Statements suggesting methods for controlling the child's behavior while in the treatment room. Suggestions may include direct demands to treat the child in a particular way, or stating alternatives for managing the child, such as referring to methods that have or have not worked well in the past or "wondering aloud" whether different methods might result in less stress.

1. "I think she does better when she knows what is going to happen."
2. "When he gets too upset, if you'll just stop a few seconds he'll calm down."
3. "He does best with Dr. Horne."
4. "Hold his legs."

Behavioral commands to the child (BBC). Commands by adults toward the child which direct the child to change some aspect of his or her behavior. This category is designed to include the limits that parents typically set on their child's behavior and behavioral request/commands of the child. This category is distinguished from CRIT in that the focus of BBC is toward managing the child's behavior, whereas the focus of CRIT is to find fault with the child and/or has an evaluative nature to the verbalizations. BBC is distinguished from CPA in that CPA is directed toward some specific procedural activities.

1. "No, don't hurt your mom."
2. "Don't slap me, you're not allowed to hit me."
3. "Shhh..."
4. "Wipe the tears."
5. "Ralph, you need to talk to us."
6. "Ralph, talk to your dad."
7. "Ralph, you have to behave."
8. "Sit down and be quiet."

Checking child's status (CST). Any question directed toward child which asks for his or her opinion about his or her status. Inquiries may refer to how the child is feeling, whether the child is afraid, whether the pain is too bad, etc. Also included are reflections of the child's answers to adults questions regarding his or her status. Examples such as "Can you breathe now?" even though they do in a sense inquire about the child's condition, are coded as CCS because they are suggesting to the child the use of a coping strategy.

1. "Did you feel that?"
2. "Do you think you sleepy medicine is wearing off?"
3. "Are you comfortable?"
4. "That didn't hurt, did it?"
5. Reflecting to the child, "Sore all back there," in response to the child's comment about being sore.

Empathy (EMP). Statements which show an appreciation for the frame of reference of the person being spoken to.

1. "I know this is hard."
2. "I know this is taking a long time."
3. "I know it hurts."
4. "This must be hard."
5. "You must be getting tired."
6. "You must be getting sick of this."

Other (OT). Code other when ever verbal behavior does not fit any other categories. This includes verbalizations that are not clear enough for accurate recording, sentences that are cut off in mid-stream before the meaning can be ascertained. Use this as a last result when audible, complete sentences are issued. Excluded from this category are “Yes”, “No”, “Shoot”, “Huh”, “Aw-shoot”, “What”, etc. These should be coded according to the context of the conversation, if possible.

1. “Can you . . . . “
2. “Ummm”
3. Mumbling
4. “I think that you . . . . “
5. “Honey”

## Codes for Child Behaviors during BMA/LP Procedures

Cry (CRY)  
Scream (SCRM)  
Verbal Resistance (VRES)  
Emotional Support (EMSUP)  
Verbal Fear (VFEAR)  
Verbal Pain (VPAIN)  
Verbal Emotion (VEMOT)  
Information Seeking (INSEK)  
Child Informs About Status (CIA)  
Request Relief From Nonprocedural Discomfort (RRD)  
Making Coping Statement (MCOP)  
Nonprocedure-Related Talk by Child (NPTC)  
Assertive Procedural Verbalizations (APV)  
Child's General Condition Related Talk (CGCT)  
Audible Deep Breathing (BRTH)  
Humor (HUM)

Cry (CRY). Crying sounds—usually unintelligible but can be double coded with verbal categories.

1. “Sobbing”
2. “Booohooohooo”
3. Crying sounds

Scream (SCRM). Vocal expression of pain at high pitch/intensity, usually nonintelligible but can be coded with other verbal categories. Not included in this category is loud yelling at a low pitch.

1. Sharp, shrill, harsh, high tones
2. Shrieks
3. “Owwwh”

Verbal resistance (VRES). Any verbal expression of delay, termination, or resistance. It must be intelligible.

1. “Stop”
2. “No more”
3. “Don’t”
4. “Let me rest”
5. “Take the needle out”
6. “I don’t want it”
7. “Take me home”
8. “I have to go to the bathroom”

Emotional support (EMSUP). Verbal solicitation of hugs, hand holding, physical or verbal comfort by the child. Do not code EMSUP for “Mommy” if part of statement requires another code. For example, “Mommy, get me out of here” is coded as Verbal Resistance.

1. “Hold me”
2. “Mommy and Daddy”
3. “Momma please”
4. “Help me”
5. “I want my pacifier”

Verbal fear (VFEAR). Statement of being apprehensive or in fear. The statement must be intelligible.

1. “I’m afraid”
2. “I’m scared”

Verbal pain (VPAIN). Statement of pain, damage or being hurt. May be in any tense. Can be anticipatory as well as actual. Has to be a statement, not a question.

1. "That hurts"
2. "It stings"
3. "Owwwh" or "Owwhee"
4. "You're killing me"
5. "You are pinching me"
6. "Don't hurt me"

Verbal emotion (VEMOT). Statements other than VFEAR or VRES which express the child's emotional state. Anger, self-pity, or resentment would be emotions conveyed here. This category is reserved for negative emotions only.

1. "Why does this have to happen to me."
2. "I hate you."
3. "I don't like doing this."

Information seeking (INSEK). The child asks questions about the medical procedures.

1. "When will you stick me."
2. "When will you be finished."
3. "Will you let me know when you're ready to start?"
4. "Will you tell me when you are going to do something?"
5. "Is the needle in?"
6. "Is the drip coming?"

Child informs about status (CIA). The child either volunteers or answers questions about his or her current status.

1. "I'm sore back there."
2. "I'm sleepy," or "Yes, a little," in response to the question, "Are you sleepy?"
3. "Yes," or "No," to the question, "Are you numb yet?" or "Can you still feel it?"

Request relief from nonprocedural discomfort (RRD). The child request relief from something that is clearly not procedurally related.

1. "Prop up my pillow."
2. "My elbow hurts."
3. "The light's too bright."
4. "You're squeezing my hand too hard."
5. "I can't move my foot."

Making coping statements (MCOP). The child makes some statements which indicates courage or attempts to

soothe himself or herself verbally.

1. "I'll be O.K."
2. "I'm Superman/woman."
3. "I can take it."
4. "It won't hurt."
5. "It won't last long."
6. "Superman would not cry."
7. "I can get an ice cream afterward."
8. "I get a band-aid."
9. "I did good."

Nonprocedure related talk by child (NPTC). The child engages in talk that is in no way related to his or her current physical condition or the procedure.

1. "That cat was a girl."
2. "I was watching He-man the other day."
3. "School is going OK."
4. "We exercise some at home."

Assertive procedural verbalizations (APV). Commands, statements, or requests by the child which seek to direct the course of the procedure, or some aspect of the adult's behavior as it relates to the procedure, without attempting to terminate the procedure or some aspect of the procedure. The essence of what is being targeted here is the child exercising some aspect of control over the course of the procedure without trying to terminate the procedure.

1. "Don't mash too hard."
2. "Count to three, then stick it in there, okay?"
3. "Push it in fast."
4. "Please tell me when you are ready."
5. "Can you hurry?"
6. "Go slow."

Child's general condition related talk (CGCT). This is the same category as in the Codes for Staff/Parent Behaviors, but with the child doing the talking.

Audible deep breathing (BRTH). Deep breathing that is used to cope with the procedures. Breathing that is part of the child's distress does not count as B. This gets a O affect code.

Humor (HUM). This is the same category as in the Codes for Staff/Parent Behaviors, but with the child doing the talking.

### Acknowledgments

Parts of the CAMPIS were derived from the work of other investigators. The affect codes were borrowed from the work of

Arthur, J., Hops, H., & Biglan, A. (1982). LIFE (Living In Familial Environments) coding system. Unpublished

manuscript available from H. Hops, Oregon Research Institute, 195 West 12<sup>th</sup> Street, Eugene, OR 97401.

The child verbal distress codes, with the exception of Verbal Emotion, were modified from the work of

Jay, S. M., Ozolins, M., Elliott, C.H., & Caldwell, S. (1983). Assessment of children's distress during painful medical procedures. Health Psychology, 2, 133-147.

Some of the adult codes were derived from the work of

Hops, H., Wills, T., Patterson, G. R., & Weiss, R.L. (1972). Marital interaction coding system. Unpublished

manuscript. Oregon Research Institute. Eugene.

and

Wieder, G. B., & Weiss, R.L. (1979) Marital interaction coding system: A user's guide. Available from R.L. Weiss, Marital Studies Program, University of Oregon, Eugene.

Child-Adult Medical Procedure Interaction Scale-Revised (CAMPIS-R)

Adult Neutral Behavior (AN)

Humor Directed to Adults  
Nonprocedure-Related Talk to Adults  
Procedure-Related Talk to Adults  
Command to Engage in Procedural Activity  
Notice of Procedure to Come  
Behavioral Commands to the Child  
Checking Child's Status  
Child's General Condition Related Talk  
Child's General Status Comments  
Commands for Managing Child's Behavior  
Praise

Adult Coping Promoters (CP)

Humor Directed to Child  
Nonprocedure-Related Talk to Child  
Command to Engage in Coping Strategy

Adult Distress Promoters (DP)

Criticism  
Reassuring Comment  
Giving Control to the Child  
Apology  
Empathy

Child Neutral Behaviors (CN)

Child Informs About Status  
Request Relief From Nonprocedural Discomfort  
Assertive Procedural Verbalization  
Child's General Condition Related Talk

Child Coping Behaviors (CB)

Making Coping Statement  
Nonprocedural-Related Talk by the Child  
Audible Deep Breathing  
Humor by the Child

Child Distress Behaviors (DB)

Crying  
Screaming  
Verbal Resistance  
Emotional Support  
Verbal Fear  
Verbal Pain  
Verbal Emotion  
Information Seeking