The Child and Adolescent Psychiatric Assessment (CAPA)

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SYNOPSIS Great advances have been made during the last 20 years in the development of structured and semi-structured interviews for use with psychiatric patients. However, in the field of child and adolescent psychiatry there have been weaknesses in the specification and definition of both symptoms and the psychosocial impairments resulting from psychiatric disorder. Furthermore, most of the available interviews for use with children have been tied to a single diagnostic system (DSM-III, DSM-III-R, or ICD-9). This has meant that symptom coverage has been limited and nosological comparisons have been inhibited. The Child and Adolescent Psychiatric Assessment (CAPA) represents an attempt to remedy some of these shortcomings. This paper outlines the principles adopted in the CAPA to improve the standardization, reliability and meaningfulness of symptom and diagnostic ratings. The CAPA is an interviewer-based diagnostic interview with versions for use with children and their parents, focused on symptoms occurring during the preceding 3 month period, adapted for assessments in both clinical and epidemiological research.

INTRODUCTION

There are two basic types of structured diagnostic interview for use with children and adolescents—respondent-based interviews and interviewer-based interviews (Harrington et al. 1988). This distinction is important in that it encapsulates rather different approaches to the collection of information. In a respondent-based interview the interviewer directs a series of questions to the interviewee, which should be delivered verbatim. Such interviews have the advantage that variability due to differences in the phrasing of questions is reduced, and so long as the interview is properly conducted, exactly what has been asked of each subject is known. In addition, similar responses will be coded in the same way by different interviewers, because variations in ‘clinical judgement’ have been eliminated by the format of the interview. If such interviews are to work well, the questions need to be very carefully phrased to be suitable for use with children of varying ages, but once good questions have been prepared, the interviewers need relatively little training, and do not need to be clinically experienced (Edelbrock & Costello, 1988). The disadvantage here is that, in general, one has simply to accept the interviewee’s assessment of whether a symptom is present or not, and each interviewee may be using a scale of symptom severity that is different from that employed in clinical practice, or simply misunderstanding the intention of the questions. Problems may arise at both ends of the spectrum of symptom frequency, though for rather different reasons. It has been shown, for example, that children’s responses to the original version of the Diagnostic Interview Schedule for Children (DISC) (Costello et al. 1982) inflated estimates of the prevalence of rare phenomena that lie outside the realm of normal experience (such as manic, obsessive–compulsive, and psychotic symptoms) (Breslau, 1987). It seems that, when asked about experiences they have never
had, people respond with an answer that reflects their nearest approximation to that experience. For instance, the notion of an ‘obsession’ has a public meaning that is rather different from its particular use in psychiatry. Furthermore, the form of an obsessional idea in psychiatric terms involves a rather complex series of judgements about an individual’s experience of that idea, involving its seeming intrusive, ridiculous or ‘ego-alien’, and often being resisted. Experience with the training of clinicians suggests that it is not a simple matter to draw the boundaries between worries, obsessional ideas and delusions. Clinical practice also dictates that careful cross-questioning and the elicitation of detailed descriptions of the phenomena are required if these distinctions are to be made. However, if interviewers are instructed to ask unspecified clarifying questions, when they doubt the validity of the answer to a previous question, the opportunity for variations in interview content becomes greater and a major advantage of the respondent-based format is lost.

At the other end of the spectrum lie experiences that are universally experienced at low levels of severity, such as anxiety or distressed mood. Here the need is to identify pathological levels of intensity, duration, and frequency of the experience. The respondent-based approach deals with duration and frequency without too much difficulty, by using simple questions about how long the experiences last, and how many days per week the subject is affected. However, the determination of symptom intensity presents greater difficulties. In clinical practice, judgements are made on the basis of detailed questioning leading to clear descriptions of the phenomena. These descriptions are then matched against the clinician’s knowledge of what constitutes pathological intensity. In a respondent-based interview it is to be expected that different individuals will have different views of what constitutes a reportable level of depressed mood or misery, and there is no choice but to accept each individual’s internal scale. This may result in considerable variability in phenomena that are coded identically.

It is also the case that careful attention to determining the frequency with which a symptom occurs can lead to boringly repetitive sets of questions. As a result of this problem, most respondent-based interviews resort to the use of questions involving non-specific frequency items such as ‘often’ and ‘a lot’. It is likely that these words have different meanings for different individuals, and so once again uncontrolled and unmeasured variability may creep in.

Interviewer-based interviews employ a rather different approach to the standardization of information collection. The interviewer is expected to pursue questioning until s/he has determined whether or not a particular symptom or behaviour is present. A definition of each symptom is usually provided, in order to guide the questioning, and quite detailed questions are usually available on the interview schedule, but the interviewer is expected to use whatever questioning seems necessary to come to a final decision as to the presence or absence of symptoms. However, such an interview differs from the unstructured clinical interview in two very important respects. First, it ensures detailed coverage of pre-specified content areas, in an attempt to avoid some of the well-known biases of clinical interviewers, such as the tendency to collect diagnostically confirmatory information. Secondly, in providing a degree of operationalization of the symptom constructs being measured, it attempts to reduce the variance in codings due to variability in the clinicians’ internal definitions of those constructs. An important test of the adequacy of an interviewer-based interview, therefore, lies in the clarity and specificity of its operationalizations of symptom constructs. In fact, the structure in such an instrument principally lies in its operationalization of the criteria for deciding that a symptom is present. Thus, the interviewer-based interview can be seen as a ‘questionnaire’ directed to the interviewer on the topic of what the interviewer knows about the interviewee. The respondent-based interview is a ‘questionnaire’ aimed directly at the interviewee. Not surprisingly, therefore, interviewer-based interviews have previously called for more highly clinically qualified (and therefore more expensive) interviewers, and greater amounts of specific interviewer training, before field work could begin (Edelbrock & Costello, 1988). On the other hand, the advantage of this approach lies in the fact that complex judgements and discrepant information may be explored more fully, and the final coding may be more confidently seen as reflecting clinical severity judgements. The danger with the inter-
viewer-based approach is that unless the interviewers are rigorously trained to make their judgements in the same way, variability in their 'clinical judgement' may lead to variability in different interviewers' ratings of the same phenomena. Several studies have demonstrated the unreliability of clinical diagnosis unaided by structured assessments (Cantwell, 1988; Gould et al., 1988; Remschmidt, 1988).

Several detailed reviews of the structure and psychometric properties of the most widely-used interviews have appeared recently (Costello, 1986; Edelbrock & Costello, 1988; Angold, 1989; Hodges, 1993) and readers are referred to these for further information. It has become common to refer to what we call interviewer-based interviews as 'semi-structured', and respondent-based interviewers as 'highly-structured' or 'fully-structured'. However, we would argue that the issue here is not one of the degree of structure, but of what exactly is structured. In a respondent-based interview, the specific wording of questions is structured, whereas in the interviewer-based interview the mind of the interviewer is structured to detect the presence of symptoms and behaviours of interest. In each case, the aim of the structure is to reduce information variance, with a view to improving reliability and validity.

In an interviewer-based interview the definition of each item, and each interviewer's adherence to its definition is a central issue. Review of the available instruments indicates that, though great progress has been made in the area of defining symptoms and symptom severity, a number of problems have remained to be addressed (Edelbrock & Costello, 1988; Angold, 1989; Hodges, 1993). In particular, the use of 'clinical' judgement represents an unstructured component, since to fall back on clinical training is to introduce a major source of unreliability. The real need is to operationalize the criteria for making symptom judgements so clearly that a clinical training is not necessary for completion of an interviewer-based interview. Non-clinicians may be taught 'clinical' concepts without undue difficulty so long as their meaning is clearly spelled out. It is also our experience that even psychiatrists trained at major academic centres may have forgotten important psychopathological distinctions or recognize only hazy boundaries between diagnostically important constructs such as worrying, obsessional thoughts, anxiety and nervous tension.

A further problem with existing interviewer-based interviews has been the fact that level of psychosocial impairment is often involved in rating the severity of individual symptoms, though these two aspects of psychiatric disorder may be seen as being rather different.

In general, the respondent-based interviews have been principally developed for, and used in, epidemiological studies, while the interviewer-based interviews have been preferred in clinical settings. However, there is no real evidence that one interviewing strategy is invariably preferable to the other for either of these purposes (Angold, 1989) and at the present time both clinical and epidemiological studies are being performed using both types of interview. In the face of these considerations, it seems appropriate to attempt to combine the strengths of the respondent-based and interviewer-based approaches to structured psychiatric diagnosis, while attempting to avoid their weaknesses. The remainder of this paper describes the development of the Child and Adolescent Psychiatric Assessment (CAPA) and details its approach to the collection of psychiatric diagnostic data in combining certain respondent-based approaches with interviewer-based techniques. A companion paper describes the test-retest reliability of the methods described in this paper.

THE DEVELOPMENT OF THE CHILD AND ADOLESCENT PSYCHIATRIC ASSESSMENT (CAPA)

In developing a new assessment tool for child psychiatry, we wished to cover a broad range of childhood and adolescent disorders. The DSM-III, DSM-III-R, ICD-9 and draft ICD-10 glossaries provided the core group of diagnoses and items, but a variety of symptoms not mentioned there that are of psychopathological interest were also included. We aimed to develop an instrument that would serve both as a clinical research and an epidemiological tool, in order to enhance comparability between these two major lines of investigation in psychiatry. The pervasive developmental disorders were excluded, since they require specialized assessments (Rutter et
**Fig. 1.** A schematic overview of the organization of the interview.
al. 1990), as were the specific developmental delays, for which standardized psychoeducational testing is needed.

Organization of the interview

The interview is broadly divided into three phases: (1) the introduction; (2) the symptom review; and (3) the incapacity ratings.

For the most part, the parent and child interviews are organized in a very similar manner, and the principles underlying the symptom and incapacity rating are the same in each case. In some areas there are more substantial differences between the parent and child interviews and these will be noted in the relevant sections. A schematic overview of the organization of the interview is presented in Fig. 1, which also indicates the main diagnostic categories covered by the CAPA.

The introduction

In order to introduce the subject to the style of the interview and set him/her at ease, the introductory section is designed to elicit an overall picture of any problems in a non-threatening manner. A conversational style is adopted, and detailed probing is avoided, unless the interviewee is very keen to go into details.

A period of about 10 min is spent gaining a picture of the child’s life, in three areas paralleling the subdivision of the incapacity section (see below). These three areas are (i) home and family life; (ii) school life; and (iii) peer groups and spare-time activities.

Many children show disturbances only in particular settings, and so this division provides an important reminder that the sphere of life in which a disturbance occurs is as important as its specific form.

The symptom review

Once a rapport has been established, and the interviewer has begun to get an outline of the child’s problems, s/he moves into the symptom review.

Detailed notes of actual examples of symptoms or problems are made. These provide an important resource for data checking and cleaning at a later stage, and also allow anyone reading through the completed schedule to get a much richer picture of the nature of a child’s difficulties.

The symptom review is subdivided into a number of domains as shown in Fig. 1. Attention-deficit hyperactivity disorders are only covered in the parent interview. In early testing of a child self-report revision of this section, we found that children’s reports were often dramatically at variance with actual behaviour during the interview. We, therefore, removed this section from the child interview. On the other hand, we found that parents were often a poor source of information about the precise details of their children’s substance use, and so this section is abbreviated in the parent interview. Similarly, while delusions, hallucinations and thought disorder are covered in the parent interview, the very detailed subtyping of these phenomenon (based heavily on the PSE, Wing, 1974) in the child interview is not included in the parent version.

Thus, the arrangement is broadly disorder-based, which means that the interview may be used in a modular fashion, with areas that are not of interest to a particular investigator being left out. However, in the interests of rationalizing the process of questioning, items that are involved in more than one diagnosis are represented in only one place. For instance, though sleep disturbances occur in depression, anxiety, mania, and primary sleep disorders, all the items relating to sleep disturbance are collected together in the sleep disorders section.

The incapacity section

Once the symptom review has been completed, the interviewer briefly reviews with the subject the symptom information already obtained, and then questions about the effects of symptoms in each of 16 symptoms domains for each of 17 areas of psychosocial impairment (which we refer to as incapacity) (see Table 1). In practice much of this information will already have been elicited during the interview, so the task is much less tedious than it sounds.

The conduct of the interview

CAPA probes

A detailed series of questions is provided for each item, using a combination of the attention to specific question structures characteristic of respondent-based interviews, and the clarification techniques of interviewer-based interviews. The interviewer is expected to ap-
Table 1. Areas of potential incapacity in the CAPA

<table>
<thead>
<tr>
<th>Family life and relationships</th>
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<tbody>
<tr>
<td>1. Relationship with mother</td>
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<tr>
<td>2. Relationship with father</td>
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<tr>
<td>3. Relationships with siblings living at home</td>
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<tr>
<td>4. Relationships with siblings not living at home</td>
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<tr>
<td>5. Self-care</td>
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<td>6. Chores</td>
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<td>7. Homework</td>
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<td>8. Ability to venture from home</td>
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<table>
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<tr>
<th>School life and relationships</th>
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<tr>
<td>9. Academic performance</td>
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<tr>
<td>10. Relationships with teachers</td>
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<tr>
<td>11. Relationships with peers at school</td>
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<td>12. Suspension from school</td>
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<td>13. Expulsion from school</td>
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<tr>
<th>Spare time activities</th>
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<tr>
<td>14. Performance of spare-time activities</td>
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<td>15. Relationships with adults in spare-time activities</td>
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<tr>
<td>16. Relationships with peers in spare-time activities</td>
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<td>17. Performance in employment</td>
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approach questioning in a flexible, but disciplined way. Questions are not completely fixed in format, but the presence or absence of all the items in a section must be ascertained. In questioning about a symptom, the interviewer must ask about the context in which it has occurred, aggravating and ameliorating factors, and the consequences it has entailed. Subjects are allowed to answer questions in their own words and to describe their experiences and behaviour in their own way. When a symptom has been thoroughly investigated, all the information obtained is used to match the behaviour, emotion, or thought described by the subject to appropriate glossary definitions and levels of severity. It is especially important to elicit detailed descriptions and examples of symptoms, since this is often an efficient way to collect a large amount of information in a short time. The interviewer is expected to continue with appropriate questioning until all the necessary information for making a rating has been obtained.

There are three levels of questions. First, there are ‘Screening questions’, which serve as entry points to certain sections of the interview where the presence of a subsequent item is dependent on the presence of a preceding item; as, for instance, in the case of several features of depressed mood (such as diurnal variation) or the characteristics of stealing behaviour. All the screening questions are asked verbatim unless the subject has already provided the necessary information to determine the likely presence or absence of symptoms in the section. Interviewers are trained to take special care to ensure that younger subjects understand what they are being asked about. However, in most cases the questions as set are quite appropriate.

If the answers to the screening questions are convincingly negative, then further questioning in that area is unnecessary and the interviewer moves on to another symptom section. However, subjects sometimes change their minds or provide contradictory information, and interviewers must be willing to return to sections that have already been covered or skipped if new or better information comes to light as the interview proceeds. The aim is to encourage children to think hard about their experiences rather than providing glib yes/no answers.

Two levels of probes are provided for each individual symptom: (1) emphasized probes (these are questions that must be asked of all subjects who enter the section, unless the information has already been provided); and (2) discretionary probes (these are suggested for additional questions that provide guidance for the clarification of details about symptoms). These questions, or similar questions, are asked, as appropriate, in order to collect the details necessary for the symptom ratings. The CAPA schedule contains 1401 emphasized probes and 2571 discretionary probes.

A further set of optional screens (which have been employed in some studies using the CAPA and not others, depending upon the investigator’s needs) consist of questions on which positive responses were found to be particularly strongly associated with high symptom scores using an earlier version of the CAPA that avoided the use of screens for most sections. The use of such a screening structure obviously shortens the time required to complete the interview very considerably. Such optional screens are available for the depression and hyperactivity sections. The hypomania and mania section is completed only if irritability, elated mood or episodic overactivity is present. Similarly, detailed questioning about psychotic symptomatology is only pursued if hallucinations, delusions or thought disorder are present. The somatization disorder section is
**IRRITABILITY**

Increased ease of precipitation of externally directed feelings of anger, bad temper, short temper, resentment, or annoyance; total daily duration of at least 1 hour. (Change may predate the primary period and continue into at least part of the primary period.)

N.B. INFORMATION OBTAINED HERE MAY ALSO BE RELEVANT TO LOSING TEMPER (PAGE 190) AND TEMPER TANTRUMS (PAGE 190)

*Have you been more irritable than usual in the last 3 months?*

*Or made angry more easily?*

What have you been "touchy" about?
Is that more than usual?
What do you do when you feel like that?
Do you keep it to yourself?
How long does it last when you feel like that?

Have you been snappy with friends or family members?

Have you gotten into arguments lately?
What has happened?
What did you say?
What did you do?

Have you hit or broken anything when you were angry?

When did you start to get *irritable* like that?

**IF PRESENT, ASK:**

*Was there a week when you felt *irritable* most days?*

*Were there two weeks when you were *irritable* on at least 8 days?*

*Has there been a period of at least 2 months in the last year when you didn’t feel like that?*

**IF PRESENT AT LEAST 4 HOURS A DAY, ASK:**

*In the last 3 months has there been a week when you were irritable like that every day?*

**IF IRRITABLE 4 HOURS A DAY FOR A WEEK (7 CONSECUTIVE DAYS), REMEMBER TO COMPLETE MANIA SECTION (PAGE 121)**

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**EPISODE OF IRRITABLE MOOD**

2 = At least 1 week with 4 days with irritable mood

3 = Period of 2 consecutive weeks where irritable mood present on at least 8 days

**PERIOD OF 2 CONTINUOUS MONTHS WITHOUT IRRITABLE MOOD IN LAST YEAR?**

0 = Yes

2 = No

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**IRRITABILITY**

2 = Iritable mood present in at least 2 activities manifested by at least one instance of snappiness, shouting, quarrelsome ness and at least sometimes uncontrolable by subject

3 = Iritable mood present in most activities, accompanied by snappiness, shouting, quarrelsome ness, and nearly always uncontrolable by subject
completed only if the subject reports at least three somatic symptoms in response to a series of health-related screening questions.

Open questions that leave room for describing emotions and behaviour are widely employed, and interviewer training strongly emphasizes the development of a conversational probing style, avoiding barrages of closed questions. Similarly, the need to maintain a comfortable conversational interaction precludes completing most of the codings during the interview. For instance, the format of the frequency codings often requires some simple calculations to convert frequencies given by the child in units of number of times per week to the standard CAPA units of number of times in the last 3 months. This task is performed in the office on the basis of notes taken during the interview and the interview tapes. Audiotapes of interviews greatly facilitate the completion of coding and provide material for quality control checks.

Fig. 2 shows a typical page of the CAPA. Emphasized probes are in italic boldfaced type and preceded by an asterisk, while discretionary probes are in regular italic type.

Observations of interview behaviour

The final section of the CAPA consists of ratings of 67 items of observable behaviour. This is completed by the interviewer at the end of the interview, or as soon as possible thereafter. These items are defined in the glossary in ways that, as far as possible, follow the general principles of rating outlined above. They cover: (1) level of activity; (2) the child’s apparent mood state; (3) the quality of the child’s social interaction during the interview; and (4) psychotic behaviour. Interviewers are instructed to be alert to the behaviour of the child throughout the interview, and to make the behavioural codings immediately after they have completed it.

THE GLOSSARY

The glossary provides the central organizing principle of the CAPA, since it contains the operational definitions of the symptom items. The interview schedule itself may be regarded simply as providing a means for the interviewer to compare the child’s mental state and behaviour with the glossary definitions in order to determine the appropriate codings.

In developing the glossary, we undertook an extensive review of the available interviews, paying particular attention to the Isle of Wight Interview (Graham & Rutter, 1968; Rutter & Graham, 1968), the K-SADS (Chambers et al. 1985), the Child Assessment Schedule (CAS) (Hodges et al. 1981, 1982a, b, 1987, 1989, 1990; Hodges & Saunders, 1989), the Interview Schedule for Children (ISC) (Kovacs, 1983), the Diagnostic Interview Schedule for Children (DISC) (Costello et al. 1985; Fisher et al. 1993; Piacentini et al. 1993; Schwab-Stone et al. 1993; Shaffer et al. 1993), the Diagnostic Interview for Children and Adolescents (DICA) (Herjanic & Campbell, 1977; Herjanic & Reich, 1982) and the Present State Examination (PSE) (Wing, 1974). We also extracted symptom definitions from various textbooks of psychopathology and relevant papers.

Rating principles embodied in the CAPA glossary

We wished, as far as possible to separate out several different dimensions of the severity of symptomatology; accordingly in defining each item for the CAPA we considered the following dimensions of severity: (1) the formal definition; (2) the severity of the symptom itself; (3) the duration of bouts or episodes of the symptom; (4) the frequency of bouts or episodes of the symptom; (5) the length of time the symptom had been occurring (i.e. the time elapsed since the onset of the symptom); and (6) psychosocial impairment related to the presence of the symptom (incapacity).

Separating out dimensions of severity in this way has two considerable advantages. First, it provides a very flexible data base for scoring symptoms and diagnoses, so it is relatively easy to encompass different sets of diagnostic criteria. Secondly, it allows for examination of the relationships between the different dimensions, which may be helpful for nosological research. A sample page of the glossary is presented in Fig. 3.

The formal definition

Each item is provided with a definition that describes the form of the symptom. In addition to this formal definition, the glossary provides
THINKING ABOUT DEATH

Thoughts about death and dying, whether referred to the self or others. Include thoughts about being the passive subject of a fatal accident or murder and thoughts about how sorry others will be when the subject is gone. Include thoughts about not being able to go on any longer and life not being worth living in this rating. If the subject has thoughts specifically about taking his/her own life, code under Suicidal Thoughts.

2 = Present but not including thoughts about wanting to die. The thoughts should be intrusive into at least 2 activities and at least sometimes uncontrollable.

3 = Including thoughts about wanting to die. The thoughts should be intrusive into at least two activities and at least sometimes uncontrollable. Do not include thoughts about taking one's own life, these are coded under Suicidal Thoughts.

SUICIDAL THOUGHTS

Refers to thinking specifically about killing oneself, by whatever means. This may accompany thinking about death in general, or may be present if a subject reports a suicidal plan or past attempt.

Do not include suicidal plans.

2 = At least sometimes uncontrollable suicidal thoughts, recurring in at least two activities.

3 = Usually uncontrollable suicidal thoughts intruding into most activities.

SUICIDAL PLANS

Refer to suicidal thoughts in which the subject considers plans for a suicidal act. If a suicidal attempt has been made, determine whether a plan was present prior to the attempt.

2 = A specific plan, considered on more than 1 occasion, over which no action was taken.

3 = A specific plan, considered on more than 1 occasion, with preparatory action taken, for example storing up tablets.

Note that each of these definitions is mutually exclusive by definition. Obviously, a suicidal plan is a form of suicidal thought in ordinary speech. However, by the specificity coding rule, consideration of a plan for killing oneself is coded only as a Suicidal Plan, and not as Suicidal Thoughts.

Fig. 3. Reproduction of a sample page from the glossary of the CAPA.
detailed notes for differentiating between symptoms that may be confused with one another. The interviewer's first task is to determine whether a child's state or behaviour conforms to the formal definition of any symptom. If it does, then the other dimensions of severity are assessed. The formal definition often also includes a threshold below which items are not considered to be of clinical importance. This is necessary because many 'symptoms' (e.g., anxiety or depression) represent states that are both common and normal when present at a lower intensity. For each symptom, an abbreviated version of the glossary definition is provided on the schedule to reduce the load on the interviewer's memory (see Fig. 2 for an example).

**Intensity**

Intensity refers to the strength or force of the symptom itself, without consideration of features such as frequency or duration. Throughout the interview, precise rules for coding the intensity of each item are specified in the glossary and on the schedule (see Fig. 2). For the most part, symptoms and behaviours are scored on a 4-point scale of 'intensity'.

- 0 = Symptom absent
- 1 = Symptom conforming to the glossary definition in form, and meets most, but not all, of the criteria for '2' on intensity, but because of the unavailability of information, it cannot be definitively decided whether or not the criteria for coding a '2' are met. Interviewers are strongly discouraged from using this scale point, unless they simply cannot collect the information necessary to determine that the symptom is definitely present.
- 2 = Symptom present at least at the minimum level of intensity as defined in the glossary.
- 3 = Symptom present at higher intensity level, as defined in the glossary.

Some items depart from this format (for instance being coded simply: 0, 1, and 2), but in these cases the glossary again provides definitions.

The criteria for intensity are necessarily different for different types of symptoms. The first group of symptoms consists of those intrapsychic phenomena that are normal when present in lesser degree (such as worrying) so that their pathological status is largely a quantitative matter. For these items a symptom's intensity is usually evaluated according to three dimensions: (1) its *intrusiveness* into other mental activities (as, for instance, in the case of worries intruding into other thoughts or activities); (2) its *lack of modifiability*, or the child's inability to modify the phenomenon by action, thought, behaviour, or environmental manipulation (as when a miserable child fails to cheer herself up by going out to play with her friends); (3) its *generalization* (i.e., the degree to which symptomatic thoughts or emotions are present across a range of activities that may be quite unrelated to the content of the symptom, as in the case of the child who feels afraid of parental separation in situations where separation is not threatened), as a minimum, symptoms are usually required to be present in two activities.

The second group of symptoms comprises conduct disturbances that are considered abnormal only when they are frequent and associated with a negative response to admonition. This applies, for example, to such items as disobedience. The reason for including unresponsiveness to admonition in such items is to prevent such phenomena as having to be told to do something twice before doing it from being included as 'disobedience'. The notion here is that disobedience must include actual failure to comply with instructions to prevent every child from being rated as being often disobedient.

The third group of symptoms comprises those where there is a qualitative difference that defines the feature as symptomatic whenever it occurs. This applies to most psychotic phenomena, and certain relatively uncommon, or usually covert behaviours (such as fire-setting). For such symptoms notions such as unresponsiveness to admonition are unhelpful. In the case of psychotic symptoms, response to admonition is not a relevant construct, while authority figures are not usually around to admonish when fires are being set.

Though we have referred to intensity as a single dimension, it will be clear by now that multiple criteria are actually being applied to determine whether a symptom meets the minimum threshold or a higher threshold level. These thresholds also contain arbitrary (but, we hope, not unreasonable) cut-points and combinations of requirements. At many points we considered alternative definitions, and experimented with them in use. The glossary
represents our current position on these topics, but we are well aware that there is much room for debate over the most appropriate definitions for every item.

In the case of antisocial behaviour, the following three additional features are recorded.

(a) **Directedness**, i.e. whether the behaviour was directed: (1) against common property (as in vandalizing a telephone box); (2) against persons unknown or property not belonging to a previously identifiable person or persons (as in stealing the car of an unknown owner); or (3) against a specific person or persons (as in smashing an enemy’s bicycle).

(b) **Solitary/accompanied**, i.e. whether the activity was performed alone or in company.

(c) **Setting**, the occurrence of the behaviour is rated in three settings, school, home and elsewhere.

**The primary period**

The interview was designed to focus on the 3 months immediately preceding the interview – this is called the ‘primary period’. This time period was chosen in order to reduce the memory requirements of the interview, while providing a sufficiently long period for a reasonable assessment of a subject’s current functioning. At the beginning of the interview, a brief period is spent in discussing time markers for the primary period. In the case of a few symptoms, involving infrequent discrete acts such as fire-setting or suicidal acts, information is sought on symptoms whether or not they occurred during the primary period.

**Duration**

For those symptoms that exhibit a meaningful degree of continuity over time (usually emotional symptoms such as depressed mood), the duration of each episode or bout is recorded. In this context, a symptom bout refers to each episode of continuous occurrence or ‘attack’ of the particular symptom. The duration is recorded as the length of time (in hours and minutes) of the average bout during the last 3 months.

**Frequency**

Ratings of frequency are required for most symptoms. Frequency refers to the number of symptom bouts or discrete acts that have occurred during the last 3 months. In a few cases, such as suicidal acts, or legal prosecutions, which are relatively uncommon, and likely to be highly memorable, ratings of frequency during the subject’s lifetime are made.

**Symptom onset**

The date from which the subject has suffered from a symptom that has been present during the primary period is also recorded.

**The accuracy of duration, frequency and onset ratings**

We do not suppose that reports of duration, frequency and onset represent precisely accurate accounts. However, we have found that, in practice, detailed questioning elicits a good sense of ‘how much’ a symptom is present, and there is a lot of difference between 3 h of depression per day for the last 5 days and all day, every day, for the last 3 months. Persistence with date questioning, tied into markers such as holidays, birthdays, and the season of the year often proves surprisingly effective in getting interviewees to remember onset dates they were, at first, quite sure they could not specify so exactly.

**Incapacity ratings**

Psychosocial impairment is a primary indicator of caseness in many diagnostic systems (see, e.g. the Research Diagnostic Criteria, Robins & Guze, 1970), and is also a major focus for treatment in many children. The most widely used measure of overall psychiatric impairment, the Child Global Assessment Scale (CGAS) (Shaffer et al. 1983; Bird et al. 1987), requires a combined rating of the severity of symptomatology and the degree of impairment in psychosocial functioning. This makes it impossible to separate these two rather different aspects of a subject’s psychiatric status. The question of what patterns of symptomatology are most strongly associated with psychosocial impairment is significant in itself, and one that can only be answered if the distinction between symptoms and psychosocial impairment is maintained.

Given that problems in multiple diagnostic areas are the order of the day in clinical child and adolescent psychiatry, it is also worthwhile to attempt to assess which areas of psychopathology are contributing most to psychosocial impairment. In order to fulfil both of these
requirements, the CAPA contains codings for incapacity in each of the 17 areas listed in Table 1. Once again, the criteria for incapacity are defined in the CAPA Glossary. These areas are formally assessed at the end of the interview after all symptom data have been collected. However, interviewers are trained to remain alert for evidence of psychosocial incapacity throughout the interview.

For problems in relationships, two forms of incapacity are recognized: (1) withdrawal, involving refusal or inability to be involved with, or to talk to others involved in the relationship; and (2) discord, involving aggression, arguments, fights, or undisciplined behaviour towards others involved in the relationship.

Two levels of severity of incapacity are recognized: (1) partial incapacity, referring to significant reduction of function in a particular area; and (2) severe incapacity, indicating a complete, or almost complete, inability to function in a particular area.

If an incapacity is detected in one of the 17 areas, then an attempt is made to determine which of 16 symptom domains are responsible for the problem. Each incapacity must be linked to the problems that seem to have generated it. Often this is difficult when children have multiple problems and incapacities, but the attempt is made nevertheless. However, this does not mean that a particular incapacity has to be assigned to one single problem. It is sometimes the case that several symptoms of different types contribute to a particular incapacity, and then each contributing problem is recorded. The dates of onset of incapacities are also recorded.

A number of general principles apply to the incapacity ratings: for incapacity to be rated it must demonstrably arise from the presence of some particular symptoms or disordered behaviours. For instance, a child who had lost friends because of maternal disapproval of the friends, would not have that loss of friends rated as an incapacity here. Although, of course, it might have had crippling effects on the child's social life, it would not count as an incapacity because it was not secondary to any psychopathology of the child's. On the other hand, if the child was too frightened to leave the house and lost the friends because of it, that would count as an incapacity.

It follows that if an incapacity is to be seen as being secondary to other symptoms, then the incapacity cannot have preceded those symptoms. They must also have resulted in a fall-off from a previous level of attainment or proficiency. Thus, a child who had previously been able to work well enough in class might show a reduced ability to produce an acceptable standard of work, because of feeling too miserable to concentrate properly on the lessons. This would be regarded as an incapacity secondary to the affective symptoms. On the other hand, if a child had always been a poor worker and later became depressed, an incapacity in relation to the school work, secondary to depression, would be recorded only if the child's work suffered a further decrement from its already low level.

However, a problem arises in the case of symptoms that have been present throughout life or for as long as the subject can remember, since it is impossible to show a decrement secondary to the symptoms, because both the symptoms and the putative incapacity will have been present simultaneously. In this situation, provided always that the incapacity can be directly related to the symptoms, it is acceptable to rate it as such.

If the subject has not entered a particular social situation (e.g. school) during the preceding 3 months, but there is clear evidence from past experience that incapacity would have been manifested had s/he been in the situation (e.g. that discordant peer relationships would have been present) then that incapacity is rated as being present, at the previous actually occurring highest intensity.

**Diagnostic severity**

So far we have only addressed the severity of individual symptoms and incapacities, but we must also consider the overall severity of the child's clinical syndrome. It is important to note that this is no concern of the CAPA interviewer. The determination of diagnostic severity is a matter for computerized data manipulation. The extensive symptom and incapacity ratings provide a flexible basis for examining diagnostic severity in terms of: (1) number of diagnoses; (2) number of symptoms per diagnosis; (3) the amount of time that the symptoms contributing to each diagnosis have been present; (4) the
length of time each individual disorder has been present; and (5) the amount of psychosocial incapacity resulting from disorders in particular symptom areas.

**DIAGNOSTIC ALGORITHMS**

We have prepared a personal computer-based (for use with IBM compatible) data double-entry package using the PARADOX software system. A total of 3222 variables result from the child interview, while 3287 are coded in the parent interview. From this raw database, a series of diagnostic algorithms (the CAPA Originated Diagnostic Algorithms—CODA), written in SAS, can be accessed. These algorithms also contain a wide range of logical and range checks on the data. The CODA provides diagnoses according to the DSM-III, DSM-III-R, DSM-IV and ICD-10 systems, plus a range of symptom scores for depression, anxiety, attention-deficit hyperactivity disorder, oppositional disorder and conduct disorder. The DSM-III-R scale scores include the frequency and symptom duration requirements mentioned in DSM-III-R. The Incapacity ratings are scored to produce a variety of categorical and scalar variables.

As with any computerized diagnostic system, the CODA contains a large number of judgements about how to operationalize words such as ‘often’ or ‘most of the day’ which appear quite frequently in diagnostic manuals. However, CAPA codings have been specifically designed to allow flexibility in these judgements, and investigators using the CAPA have the opportunity to try alternative algorithms of their own devising. Though the algorithms implement disorder duration requirements as outlined in say the DSM-III-R manual, there is also room for experimenting with the effects of varying these criteria. Separate scores and diagnoses by parental and child report are generated, which may then be combined to produce overall diagnoses. In addition, for DSM-III-R diagnoses, algorithms for combining parent and child data at the symptom level are available. Here if a symptom is reported as being present by either the parent or the child then it is counted as being present for the purpose of making a ‘joint’ diagnosis on the basis of the DSM-III-R rules for combining symptoms.

**INTERVIEWER SELECTION AND TRAINING**

We have now had experience of training around eighty CAPA interviewers at six different sites in the UK and USA, to work with psychiatric patients, chronically medically sick children, and in large (N > 1000) general population samples. We have trained individuals from a variety of backgrounds, including psychiatrists, psychologists, social workers, nurses, and graduate level personnel with little or no previous clinical experience. The principal requirement for CAPA interviewers is that they should be willing to abide by the structure provided by the interview, while showing sensitivity and intelligence in questioning to obtain descriptions of behaviour. Training requires approximately 1 month to 5 weeks with considerable emphasis on practice and group ratings of tapes. CAPA interviews are hard work, requiring considerable intelligence, concentration, and an ability to focus on details without seeming unsympathetic, or boring the child or parent. The interviewer must be able to grasp and apply the concepts embodied in the glossary and develop an understanding of the fine-grained distinctions between related symptoms. Not everyone has these abilities, and a clinical training by no means guarantees them. It certainly helps if the trainee interviewers have had previous contact with disturbed children, but sensitivity and a willingness to learn and operate according to the structure of the interview are even more important. It is our experience that after a month of training, a picture of the interviewer’s final capabilities can be obtained. In about 20% of cases, it is clear that the individual simply has not ‘got it’. Informal discussions with colleagues (e.g. E. J. Costello, personal communication) indicate that similar ‘wastage’ rates occur even with respondent-based interviews. We have found that intensive efforts to bring failing interviewers up to the mark with additional training prove fruitless, so it seems better to terminate what will be a frustrating business for all concerned as quickly as possible. Following training, continued quality-control monitoring is mandatory (as with all interviews) to prevent interviewers from drifting into idiosyncratic techniques. We recommend that every interview be checked by a supervisor to maintain con-
CONCLUSION

Interviews are the standard diagnostic tools in most areas of child and adolescent psychiatric disorder, and great progress has been made in improving the reliability of such interviews over the last 20 years. However, there is general agreement that further progress is necessary (Edelbrock & Costello, 1988; Hodges, 1993). The CAPA represents a synthesis of what we have learned from our experience with the two major strands of interviewing technology—the interviewer-based and respondent-based approaches. The overall style is solidly interviewer-based, but with more detailed specification of symptom ratings than has yet been available. However, the organization of emphasized probes reflects the appropriate concerns of the developers of respondent-based interviews with maintaining control of the form of questioning.

Our experience in training interviewers is that both lay-people and clinicians may make good CAPA interviewers, and the test–retest stability results support the idea that they can be trained to high levels of consistency (see accompanying paper, Angold & Costello, 1995).

It is important, however, to address certain limitations with this method. First, it is time-consuming, with each interview in a general population sample typically lasting about 1 h. Interviews with clinical samples and those with parents who are keen to talk often take longer. In fact, however, the DISC now takes about the same length of time to complete (E. J. Costello, personal communication), so length seems to be more a question of the need to cover a lot of ground rather than a problem specific to the CAPA. However, CAPA training is more demanding than training on a respondent-based interview. Our experience is that the cognitive demands placed on the child by the CAPA make it unsuitable for use with children under the age of about 8. There seems to be no obvious reason why the parent version should not be used with the parents of younger children, but it has not yet been tested in this way. We have also found that the approach to symptom severity ratings used in the CAPA is useful in training clinicians (Angold, 1994). There is no reason to suppose that the CAPA will be an appropriate form of evaluation for all psychiatric diagnostic purposes, and a good deal of further methodological research is needed to elucidate the strengths and weaknesses of different interview procedures. However, experience with the CAPA to date has suggested that it has certain theoretical and practical strengths that make it appropriate for use in many types of research. In the companion paper that follows, we document the test–retest reliability of these approaches and procedures in interviewing children about their psychopathology.

An information packet containing details about the CAPA and its training requirements may be obtained from the first author (A. Angold) for those from non-European countries at a cost of $35.00; Europeans should obtain this packet from the fifth author (E. Simonoff).

REFERENCES


