The Pain that "Just Wouldn't Go Away"
Facilitator's Guide

Case Authors:
Greg Blaschke, MD, MPH
Carolyn Frazer, MD
Harvard Medical School
Children's Hospital, Boston

Topic: Recurrent Abdominal Pain

Abstract:
Recurrent abdominal pain (RAP) is the most common (10-15% prevalence) chronic pain syndrome in childhood. This clinical entity is frequently encountered by primary care providers in daily practice. Evaluation, management and etiologic principles used for RAP can be generalized to other chronic pain syndromes of childhood including headache, limb pain, and chest pain. Each clinical entity has unique history and physical exam "red flags" suggestive of possible organic disease. This case presents the story of an 8 year old girl with typical history and physical findings for non-organic etiology in an attempt to allow discussion of management principles for these syndromes.

Goal:
To provide learners with a basic understanding of the management of chronic recurrent pain syndromes during childhood.

Objectives:
By the end of this session, learners will be able to:
1. Describe typical signs and symptoms of recurrent abdominal pain.
2. List historical and physical exam findings suggestive of identifiable organic etiology.
3. Discuss appropriate diagnostic evaluation.
4. Describe the clinician's role in management of this disorder.

Prerequisite Cases: N/A

Related Cases: N/A

Themes: Child Development and Behavior

Key Words: Recurrent abdominal pain, functional pains, headache, limb pain, abdominal pain, chest pain

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Bright Futures Core Concepts:
While all of the Core Concepts are included in each case, this particular case can be used to highlight communication, partnership, and prevention/health promotion.

Materials Provided:
- Facilitator's Guide
- 3-part Case Narrative: Part I, Part II, Epilogue
- Handout #1: Contextual Model for Pain
- Handout #2: Amy's Growth Chart
- Handout #3: Sample Symptom Diary
- Handout #4: Recurrent Abdominal Pain Summary
- Bibliography

Facilitator Preparation:
Facilitators should thoroughly review this guide and the other materials provided. At the end of the guide we have included a section entitled, "**Independent Learning/Prevention Exercises**," that will further stimulate group and individual education on this topic.

Suggested Format for a One Hour Session:
We anticipate that case facilitators will modify implementation of the case session to best fit their educational setting and learners. For detailed recommendations on case facilitation, please see the chapter entitled, "A Brief Guide to Facilitating Case-Discussion," found in *The Case Teaching Method; and Growth in Children and Adolescents* (book 1 of this series).

Introduction: Recurrent abdominal pain (RAP) is the most common (10-15% incidence) chronic pain syndrome of childhood and least likely to have an identified organic etiology. Children with recurrent pain can be challenging patients due to lack of an identified etiology, fear of missing a serious or treatable condition, and the chronic nature of the condition. By using a structured management approach, primary care providers can manage most cases of RAP successfully in the ambulatory setting. In addition, general management principles can frequently be applied to other chronic pain syndromes of childhood including headache, limb pain, and chest pain. Each of these clinical entities has its own unique historical and physical exam "red flags" suggestive of possible organic disease. This case presents the story of an 8 year old girl with typical history and physical findings for non-organic etiology in an attempt to allow discussion of management principles for these syndromes. Part I of the case provides history, and Part II provides the physical examination.

Open the Discussion: Introduce the case title and the session goal. Explain that this will be an interactive case discussion and not a lecture. Distribute Part I of the case and ask one or more of the participants to read it aloud.

Part I

Amy is an 8 year old girl who presents to your office with a chief complaint of intermittent episodes of abdominal pain for the past 9 months. When you walk into the room, her mother immediately states "*I've heard what a wonderful pediatrician you are from my friends! I hope you can figure out what is causing Amy's pain?!*"

"Thanks you, Mrs. Smith. You know, the best way to understand what is going on is to have Amy answer my questions to the best of her abilities. After talking with Amy, I'll ask you to clarify or address any of her answers."

"Can you tell me about your pain today, Amy?"

"It's not hurting today."

"Tell me about the last time your stomach hurt."

"It was about 1 week ago. The pain happened all over."

Amy vaguely describes the pain as "*sometimes sharp and sometimes dull*" but never crampy. It usually lasts less than 30 minutes and goes away if she lies down. Sometimes the pain is so bad that she comes in from playing with her neighborhood friends. She denies any "warning signs" prior to the painful episodes. Amy reports daily, soft bowel movements. She has no urinary symptoms of dysuria, frequency or hematuria. She has never had associated fever, nausea or vomiting, diarrhea, hematochezia or headache with the episodes.

Amy's mother "*agrees with most of what she said.*" *"Sometimes Amy will point to her belly and complain that it 'hurts' during the episodes. Sometimes she seems to writhe in pain. I usually have her lie on the couch and rub her tummy. Sometimes I give her tylenol. The pain occurs about 2-3 times per week, but there have been times that she has gone a month without any pain. I don't think there is a pattern to the time of day it happens, other than it only occurs during the school week. It's been so bad that she's been sent home from school 4 times in the past month."*

Amy has no associated symptoms at the times of these episodes and is completely asymptomatic between episodes. In fact, she usually is "*back to normal within an hour after they occur*." Her mother noted no relation to meals, although she wonders if it is caused by "*allergies to foods*."

Her mother states that Amy is a healthy child overall. Her past medical history is really very unremarkable. She has had no surgeries and has never been hospitalized. She has no chronic illnesses. Her immunizations are up to date. The family history is only remarkable for a sibling with asthma. She is an A student in 3rd grade. Her mother, father and brother all live at home. She has multiple friends in school and in the family's neighborhood. She is active in Girl Scouts and likes school.

Following this reading, ask all participants "So what do you think about this case? What would you like to focus on during our discussion today?" List agenda items on a blackboard or flipchart. There are 2 possible ways to proceed with group discussion following Part I of the case. The first option would be to use the first question below and discuss the differential diagnosis for Amy. The second would be to focus on what is suggestive about RAP in Amy's case. Deciding which question to use depends on the group's experience and learning agenda as well as the amount of time for discussion.

Remember that the key to successfully leading a small group is facilitation of the discussion rather than lecture. Draw as many participants as possible into the discussion. Allow silences while group members think about questions. Present material from the discussion guide only when needed to complement or redirect the group discussion.

Guiding Questions for Discussion:

Given the history provided, what is the most likely diagnosis?

Differential Diagnosis

The differential diagnosis for abdominal pain is very broad and includes distinctions between acute and chronic recurrent pain. The child who presents during an acute episode of abdominal pain often has a more extensive differential. Inclusion of all these possibilities is outside the realm of this discussion. One way to lead this discussion is to ask participants to list on a blackboard or flipchart what they would like to rule out by history, physical and targeted lab evaluation. The following is a partial list.

Gastrointestinal: ulcer, cholelithiasis, dysfunctional bowel motility, lactose intolerance, constipation, inflammatory bowel disease
Infectious: urinary tract infection (UTI), parasitic infections (e.g., giardia)
Genitourinary: infection, obstruction, ovarian cyst, tumor or torsion
Neurological: abdominal migraine
Psychological: depression, somatization, anxiety
Social: school avoidance, abuse/neglect

What in the history is suggestive of RAP?

In recurrent abdominal pain, the child's description (and subsequently the parents') may be vague. Pain is often described as occurring 2-3 times per week for several weeks but then can be absent for months. Generally, the episodes are described as rather sudden in onset. The location is said to be "all over" or periumbilical. The duration of pain is generally less than 1 hour. The quality may be described as dull, crampy or occasionally sharp. It may often interfere with normal activities such as play, which can confuse parents. Parents seldom identify a specific trigger. The children seem completely normal between episodes. There is no temporal relationship to activity, meals, or bowel habits.

What is the definition and cause of RAP?

RAP is still best defined by Apley's definition[1]:

- Pain occurs at least monthly
- Pain of at least 3 months duration
- Pain interferes with daily functioning (home, school, and/or social relationships)

Distribute Handout #1: Contextual Model for Recurrent Pain and review the contents.

The cause of RAP is not entirely clear. The ***Contextual*** view suggested by *Bright Futures* is helpful in the evaluation and treatment of many recurrent pain syndromes: "Since health, educational, and social issues are strongly interrelated, they cannot be assessed in isolation from each other." The provider must be sensitive to the world of the child and comprehensively assess and intervene at the child, family, school and community level. Intrinsic factors that may influence the manifestation and source of RAP include the child's innate temperament and perception or response to pain. Extrinsic factors include environmental factors such as the response to episodes of pain by parents and teachers.

What additional historical information would help confirm the diagnosis?
The diagnosis is made clinically by thorough history and physical exam. Techniques that may help confirm the diagnosis, aid in excluding other pathologic diagnoses, and uncover underlying etiologic elements include:

- Obtain a complete past medical history, review of systems, and family history both for organic disease, functional complaints, and/or similar symptoms.

- Ask the child/parent to describe the first, last and most severe episode of pain. Often the first or most severe episode will be the most "pathologic". Following these episodes, children may be "set up" to have recurrent, less severe episodes. The first, most recent and most severe are also generally the most vividly recalled.

- Ask about the overall functioning of the child and his/her family. Some Bright Futures examples include:
  "How are things going in your family?"
  "Tell me about your friends."
  "How is school going? What do you like the most about school?"
  "What are you best at?"
  "If you had 3 wishes, what would they be?"

- Ask if there are eating, sleeping and/or other behavior changes.
  "*How is Amy's appetite and sleep?" "Do you have any concerns about Amy's behavior?"*

- Explore the child's temperament and response to pain and/or stress.
  "How does Amy respond to pain or stress?"

- Find out how the parents, day care provider(s), and/or school teacher/nurse respond to the episodes of pain.
  "What do you do when Amy has pain?" Family experiences mold one's expectations

of what it means to be healthy. The day to day practices of families have a profound effect on individual well being. There may also be secondary gain from the child's pain.

- Ask the parent and child what they are most worried about. Also ask why they sought this evaluation now.

- Remember to ask the child if someone or something is hurting, frightening, or touching them in a way they do not like. In young children, these questions may be asked in context of other safety issues (i.e. ask about street, car, fire safety as well as your key questions.)

  "It's important that kids are safe. I'm going to ask you some questions about knowing how to keep yourself safe."

  "What do you do when you cross the street?"
  "What about if your house was on fire?"
  "Have you ever had pain in your private parts? Has anyone ever touched you in a way you didn't like? What would you do?"
  "What should you wear when the car is moving?"

Distribute Part II of the case and have participant(s) read it aloud. Distribute Handout #2: Amy's Growth Chart.

Part II

Amy is quite talkative during her physical exam. She has no difficulty climbing onto the exam table when asked. She clearly is in no distress.

Her height and weight growth curves are at the 50th percentile. Her vital signs are normal.

Amy has no dysmorphic features. Her head and neck exam is unremarkable. Her chest is clear. Her cardiovascular exam includes normal heart sounds and normal pulses. Her abdomen is soft and nontender with active bowel sounds. There is no organomegaly and no masses. When asked, she points around her umbilical area as the place of her pain. A rectal exam is normal and stool guaiac negative. Her genitalia appear normal. She is Tanner stage I for pubic hair and breast development. She has no birth marks or rashes.

Amy's cranial nerves are intact. She has normal tone and muscle mass. She has no cerebellar signs. Her deep tendon reflexes are equal and symmetrical. Her extremity exam including joints is completely normal.

What historical information and physical exam findings would make you suspect an identifiable organic etiology?

History "Red Flags":

Apley's law is that the more localized the pain and the further from the umbilicus, the more likely an organic explanation (e.g., acute pain in the right lower quadrant may be a sign of appendicitis). Associated symptoms are concerning but NOT diagnostic of organic etiology. These include:

change in bowel habits
vomiting
dysuria
rectal bleeding
joint involvement
systemic/constitutional symptoms
constant pain
duration of minutes or days
radiation of pain
awakening at night
less than 4 or more than 15 episodes
family history (Inflammatory Bowel Disease)

Physical Exam "Red Flags":

Systemic or constitutional signs of disease would be concerning. These include:

weight loss
organomegaly
oral ulcers or lesions
anal fissure
joint swelling, pain
ocular findings
hernia
fistula
perirectal ulceration
occult blood in stool
skin rash

What laboratory or radiographic tests (if any) would you like to obtain?

The following tests would likely be obtained on all patients with clinical suspicion of chronic recurrent abdominal pain:

- *Complete blood count (CBC)*
- *Erythrocyte sedimentation rate (ESR)*
- *Urinalysis/urine culture (girls)*
- *Stool occult blood*

It is crucial that **targeted** lab tests be obtained based on clinical suspicion. The following tests should be considered and ordered **only** if clinical suspicion indicates:

- *Giardia antigen*
- *Stool for ova and parasite (O&P)*
- *Abdominal radiograph (KUB)*
- *Lactose breath test (bloating, diarrhea)*
- *H. pylori antibody titer (epigastric pain)*
- *Abdominal and pelvic ultrasound (for specific GU/GI concerns)*

How would you proceed with treatment?

Management:

During your first visit with this family, it is crucial that you communicate that you have listened carefully to the history. Having both adequate time and an organized and comprehensive approach is important. The first visit may need to be limited to an initial history and thorough physical examination in order to identify "red flags". Selected, targeted lab and radiographic tests may then be ordered. A second visit should then be scheduled, during which a more thorough assessment can be completed. This plan should be made clear during the initial visit so that realistic expectations are set.

It is imperative that the history be obtained in a careful, nonjudgmental, objective, thorough and thoughtful way. Repeating or summarizing the history provided by the child and/or parent is one way to communicate that you are listening carefully. Ask them for feedback about your summary. Making empathic statements like "*That must have been hard to watch as a parent. What did you do?*" will communicate that you understand the difficult nature of this problem and allow you to discover the family's response to these episodes. Praise good insights or management by parents even if they occurred accidentally. Always identify the parent and child's underlying concern and remember they may not be the same! What made evaluation imperative now?

Follow up is crucial. You should communicate that this pain is real and that you will help Amy learn to manage it. If the family has an identified follow up plan, and you have communicated that you plan to solve this as a team, they are less likely to "doctor shop".

Treatment:

A. "**Demystification"** or explanation of the diagnosis itself can be quite therapeutic. The parent and child need to understand that this is a common clinical entity. Explain your provisional diagnosis with confidence. Management of entities that involve some uncertainty (or are diagnoses of exclusion) require a trusting team approach that includes the patient, parents, teachers and health care providers. Emphasize the need for continuity. "Demystify" the process by explaining that this is a common diagnosis and suggest that parents ask other parents who have children the same age about abdominal pain. Most will find that what you told them is true; this is a common problem and underlying organic pathology is rare!

B. **Address the fears and concerns** of the child and parents. Summarize the normal history and physical findings, but avoid doing this too early in the evaluation. You must first emphasize your ability to listen and conduct a thorough assessment.

C. **Behavior management** includes suggesting that Amy can rest in her bed until the symptoms improve (unless avoiding school). Parents and day care providers should emphasize the importance of maintaining a normal routine. Returning to play or school as soon as possible is best. Involving school personnel in the treatment plan can prevent prolonged school absences. Lying down for 20-30 minutes at school is more helpful than sending the child home. It may be helpful to require a visit to your

office for any missed days of school. It is crucial that adults praise signs of progress or coping in the children. Finding ways to celebrate when the pain has resolved (or has minimal impact) can be a helpful positive reinforcement.

D. **Start a symptom diary**. This will help the child and parents avoid any triggering activities that may be identified. Avoid drawing attention to the symptoms (similar to management of temper tantrums), but focus attention and praise on progress and coping. Do NOT have parents query the child about pain episodes. ("Did you have pain today?") Symptoms are a sign to look for triggers and to decrease stressor(s). **Distribute Handout #3: Sample Symptom Diary.**

E. Help the child take **responsibility** for coping and/or adapting. The parents should not focus on the symptoms, but acknowledge their child's ability to cope, adapt and function. Emphasize maintaining a normal routine/schedule as much as possible.

F. **Dietary suggestions** that may prove helpful in recurrent abdominal pain include a short trial period of avoiding all dairy products. An increase in dietary fiber is a useful approach (See reference 2). Minimize use of analgesics.

G. **Psycho-social support** and parent guidance will also help. Discussions with the primary care provider, as well as with other parents, school personnel, and child mental health professionals are important. Teaching children biofeedback mechanisms (relaxation, hypnosis) is another way to enhance coping.

When should you follow up and what should you do at these visits?

Follow-up should be initially arranged for 2-3 weeks, and then monthly.
Each subsequent visit should include reassessment.

- Update the history by asking about interim "severe" and "most" recent episode of pain
- Review the symptom diary
- Repeat the physical examination
    - To uncover hidden or occult organic pathology.
    - To reassure yourself, your patient and her parents.
- Review the treatment plan (steps A-G above)
- Keep an open mind. A diagnosis of RAP does not exclude the possibility of identifying pathology in the future.

What is the prognosis?

Patients with chronic recurrent abdominal pain may be divided roughly into thirds. One third will have their symptoms resolve. One third will remain the same. One third will likely have persistent symptoms into adulthood. Some theorize that this syndrome may be part of a life-long continuum of dysfunctional motility syndromes, starting with colic, and progressing to toddler's diarrhea, recurrent abdominal pain, and adult irritable bowel syndrome.

What will you say to Amy? And her mother?
Facilitators may wish to role play this conversation with learners.

Ask the group members the following questions as if you were the parent. Have them practice how they would respond. Ask other group members how they would respond. Have audience members who have cared for children with RAP discuss how they have responded to these questions.

Common questions / challenges :
Are you sure there is nothing wrong with Amy?
So you are saying this is all in her head?
What do I do when she is having the pain?
Will this ever go away?
What are the treatments?

Distribute Handout #4, the Bibliography page and Epilogue. Ask someone to read the Epilogue aloud.

Epilogue

After emphasizing Amy's normal physical exam, you discuss the diagnosis of recurrent abdominal pain. You decide to order a CBC, ESR and UA with urine culture. Amy's mother agrees to help Amy keep a symptom diary and to return to your office for follow up in 2-3 weeks.

Amy's mother calls your office 3 days later to review the lab results. You explain the results were normal and remind her about keeping a symptom diary. You see Amy 3 weeks later and her diary reveals approximately 1 episode per week. Amy and her mother report that she has had some episodes of pain since her last visit but she has not missed any school. Amy has been eating a bran muffin or bran cereal every morning and states that the pain is less frequent and does not keep her from playing. There are no new symptoms. You support Amy and her mother in their management of her pain, remind them of the chronic but not dangerous nature of the condition, and schedule another visit for the following month.

Over the next 3 months, the number of episodes remains about the same. However, Amy seems to be coping better and has fewer interruptions to her routine.

Refer back to group's learning agenda and summarize the key teaching points that were made. This will give the group a sense of accomplishment and emphasize the important messages. Suggest further sources of reading or other information if there are agenda items that were not covered in the discussion.

Independent Learning/Prevention Exercises: Facilitators may wish to assign "Independent Learning/Prevention Exercises" to the group, particularly if time constraints hinder the completion of the case. The following list includes suggestions to explore the available community resources that focus on Recurrent Abdominal Pain that can be integrated during or after the session. If the exercise is done in the absence of the facilitator, learners should take notes on their experience, then discuss with a faculty member for feedback.

1. Talk with a school nurse; ask how s/he handles students who come in with somatic complaints (headache, stomach ache, limb pains).
2. Go through the symptom diary with a patient.

The Pain that "Just Wouldn't Go Away"

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Part I

Amy is an 8 year old girl who presents to your office with a chief complaint of intermittent episodes of abdominal pain for the past 9 months. When you walk into the room, her mother immediately states "*I've heard what a wonderful pediatrician you are from my friends! I hope you can figure out what is causing Amy's pain?!*"

"Thanks you, Mrs. Smith. You know, the best way to understand what is going on is to have Amy answer my questions to the best of her abilities. After talking with Amy, I'll ask you to clarify or address any of her answers."

"Can you tell me about your pain today, Amy?"

"It's not hurting today."

"Tell me about the last time your stomach hurt."

"It was about 1 week ago. The pain happened all over."

Amy vaguely describes the pain as "*sometimes sharp and sometimes dull*" but never crampy. It usually lasts less than 30 minutes and goes away if she lies down. Sometimes the pain is so bad that she comes in from playing with her neighborhood friends. She denies any "warning signs" prior to the painful episodes. Amy reports daily, soft bowel movements. She has no urinary symptoms of dysuria, frequency or hematuria. She has never had associated fever, nausea or vomiting, diarrhea, hematochezia or headache with the episodes.

Amy's mother "*agrees with most of what she said.*" *"Sometimes Amy will point to her belly and complain that it 'hurts' during the episodes. Sometimes she seems to writhe in pain. I usually have her lie on the couch and rub her tummy. Sometimes I give her tylenol. The pain occurs about 2-3 times per week, but there have been times that she has gone a month without any pain. I don't think there is a pattern to the time of day it happens, other than it only occurs during the school week. It's been so bad that she's been sent home from school 4 times in the past month."*

Amy has no associated symptoms at the times of these episodes and is completely asymptomatic between episodes. In fact, she usually is "*back to normal within an hour after they occur*." Her mother noted no relation to meals, although she wonders if it is caused by "*allergies to foods*."

Her mother states that Amy is a healthy child overall. Her past medical history is really very unremarkable. She has had no surgeries and has never been hospitalized. She has no chronic illnesses. Her immunizations are up to date. The family history is only remarkable for a sibling with asthma. She is an A student in 3rd grade. Her mother, father and brother all live at home. She has multiple friends in school and in the family's neighborhood. She is active in Girl Scouts and likes school.

The Pain that "Just Wouldn't Go Away"

Part II

Amy is quite talkative during her physical exam. She has no difficulty climbing onto the exam table when asked. She clearly is in no distress.

Her height and weight growth curves are at the 50th percentile. Her vital signs are normal.

Amy has no dysmorphic features. Her head and neck exam is unremarkable. Her chest is clear. Her cardiovascular exam includes normal heart sounds and normal pulses. Her abdomen is soft and nontender with active bowel sounds. There is no organomegaly and no masses. When asked, she points around her umbilical area as the place of her pain. A rectal exam is normal and stool guaiac negative. Her genitalia appear normal. She is Tanner stage I for pubic hair and breast development. She has no birth marks or rashes.

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The Pain that "Just Wouldn't Go Away"

Epilogue

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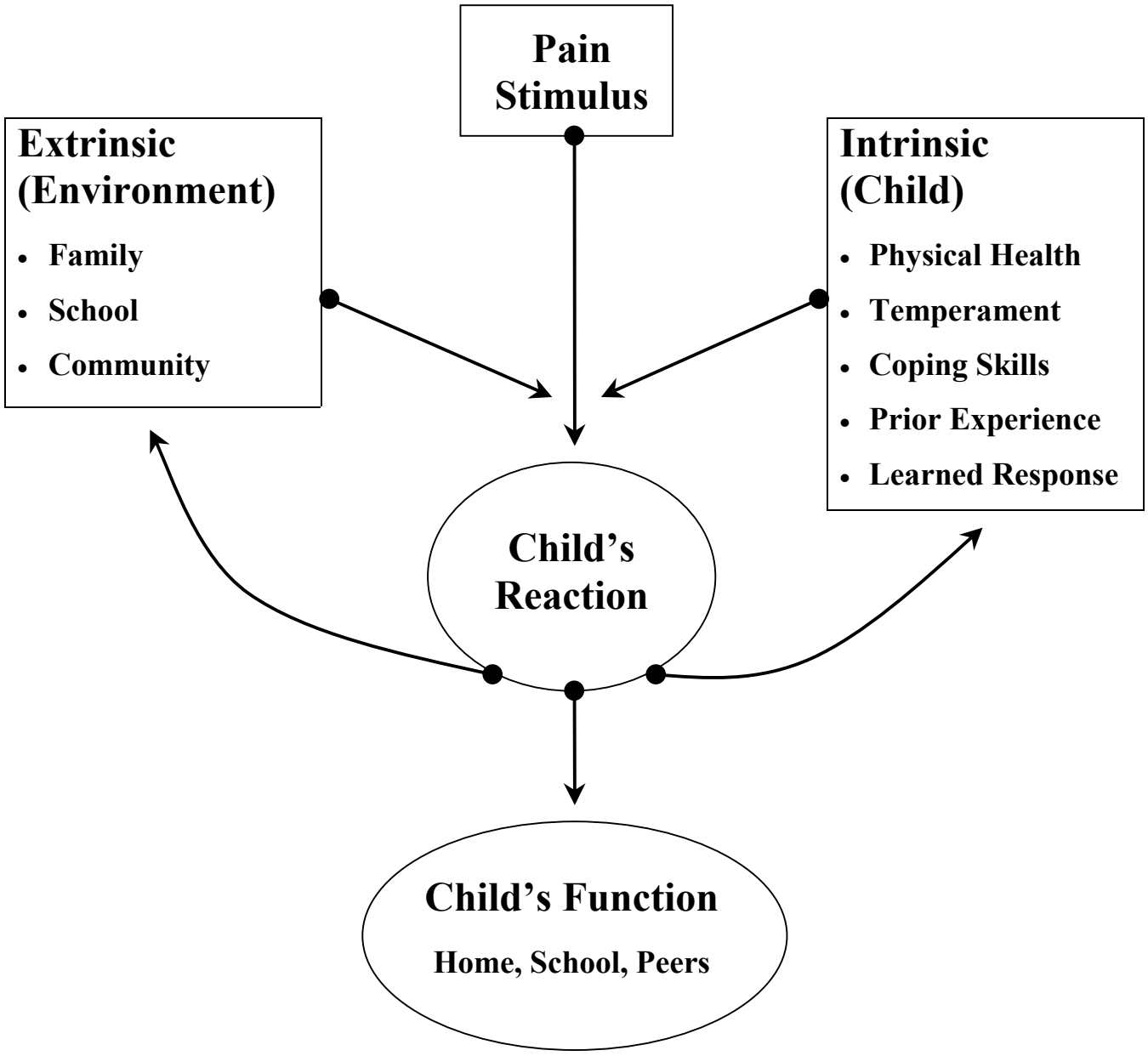
Over the next 3 months, the number of episodes remains about the same. However, Amy seems to be coping better and has fewer interruptions to her routine.

The Pain that "Just Wouldn't Go Away"

Handout #1: Contextual Model of Pain



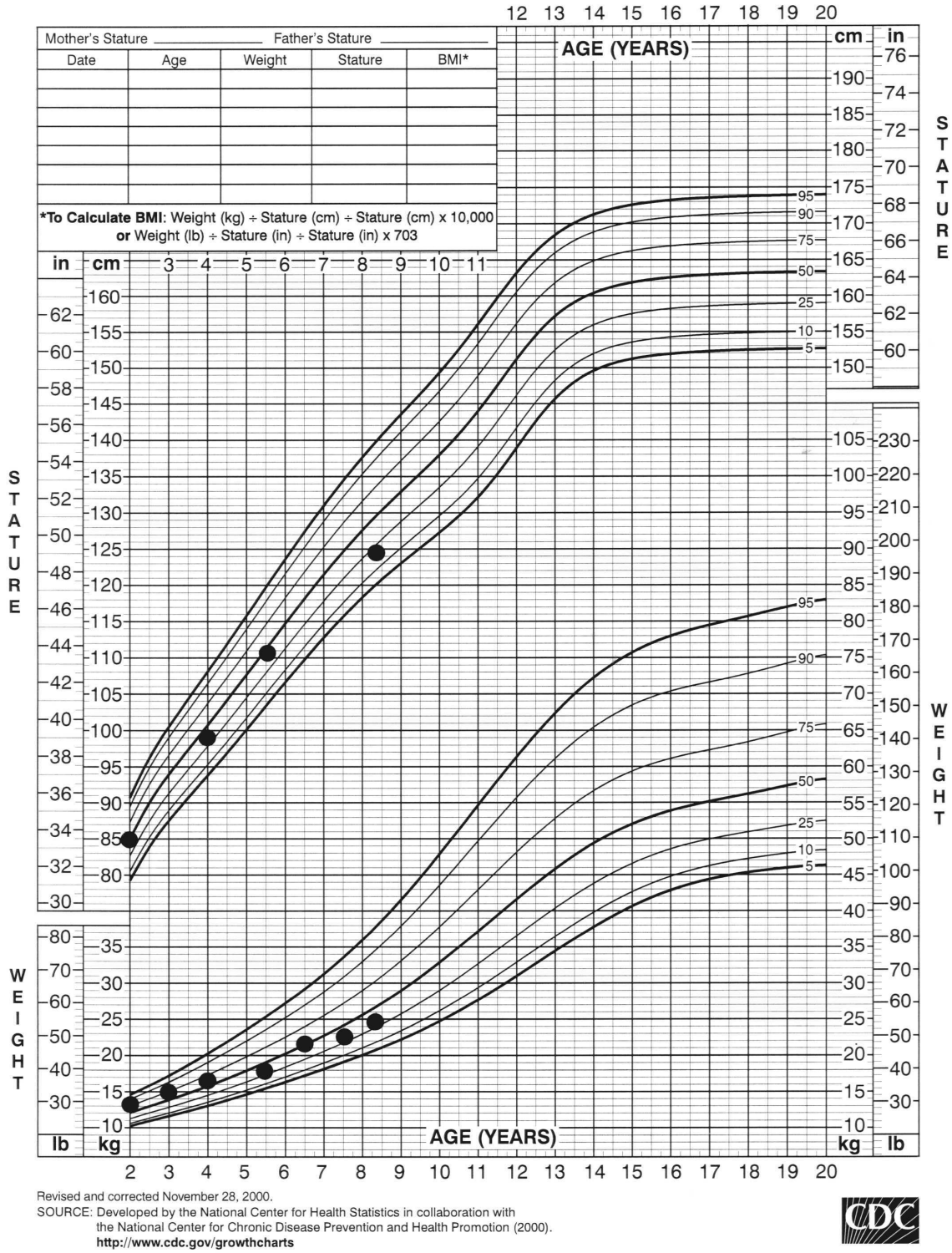
The Pain that "Just Wouldn't Go Away"

Handout #2: Amy's Growth Chart

2 to 20 years: Girls
Stature-for-age and Weight-for-age percentiles

NAME Amy

RECORD # _____



Revised and corrected November 28, 2000.

SOURCE: Developed by the National Center for Health Statistics in collaboration with the National Center for Chronic Disease Prevention and Health Promotion (2000).
http://www.cdc.gov/growthcharts

The Pain that "Just Wouldn't Go Away"
Handout #3: Symptom Diary Sample

Day of the week: _____ Date: ___/___/_____

Time started: _____am/pm

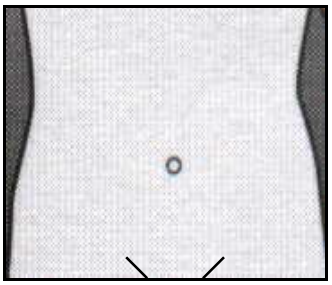
Pain:

- Describe (knife-like, crampy, dull): _____

_____

_____

- Where was the pain? (Draw an "X" on the stomach in the area where it hurt.) →



- How bad was the pain? (1=mild, 10=worst possible)

1 2 3 4 5 6 7 8 9 10

- How long did it last? _____

Where were you? _____

What activities were you doing? _____

_____

Who was with you? _____

Did anything trigger it?

- Thoughts: _____
- Feelings/Mood: _____
- Activities: _____
- Food (and time eaten): _____
- Urinating/Bowel movements: _____

What did the pain prevent you from doing? _____

_____

What did you do or take for the pain? _____

_____

What made it better? (eating, exercising, lying down, etc.) _____

_____

What made it worse? (eating, exercising, lying down, etc.) _____

_____

The Pain that "Just Wouldn't Go Away"
Handout #4: Recurrent Abdominal Pain Summary

Introduction:
Recurrent Abdominal Pain (RAP) is the most common recurrent pain syndrome in childhood with an incidence of 10-15% in school age children. Children with recurrent pain can be challenging patients due to lack of an identified etiology, fear of missing a serious or treatable condition, and the chronic nature of the condition. There are general management principles that apply to a variety of recurrent pain syndromes including RAP, limb and chest pain, and headaches. By using a structured management approach, the primary care provider can treat most cases of recurrent pain successfully in the ambulatory setting.

Definition:
- Occurs at least once a month
- Lasts at least 3 months
- Interferes with functioning at home, school or in peer relationships

Characteristics:
- Paroxysmal, recurrent episodes of pain lasting less than one hour
- Intercurrent pain free intervals
- Pain is vague, periumbilical or poorly localized
- Associated autonomic symptoms (pallor, sweating, nausea, vomiting, palpitations)
- No constitutional symptoms

Epidemiology:
- Middle childhood, early latency
- Girls:Boys 5:3
- Peak: 30% 9 yr. old girls
  10% 5-10 yr. old boys

Diagnostic work up
RAP is a clinical diagnosis based on extensive history including past medical history, family history, and social history. The cause of RAP is not known but there appears to be a complex interaction of physiology, temperament, and environment. Parent responses to child can reinforce or moderate pain experience. Ten percent of children evaluated in medical settings will have an identifiable organic disease, but *organic disease is unlikely in the absence of "red flags"* on history, physical examination or laboratory tests.
- Ask about daily functioning at school, home and with peers
- Ask about signs of stress such as changes in sleeping, eating or behavior
- Ask about any stressors impacting on the child and family
- Observe child's behavior and parent's response in the office
- Perform thorough physical exam including rectal and neurologic exams

Red Flags:

- Apley's Law: the more localized the pain and the further from the umbilicus, the more likely there is serious organic disease
- Pain which is constant, further from the umbilicus, radiates or wakens child at night
- Change in bowel habits
- Vomiting, dysuria
- Blood in urine or stool
- Fever, rash, weight loss, anemia
- Joint swelling or pain
- Anal fissure, perirectal ulceration

Laboratory tests:

Extensive laboratory work up is not helpful in the absence of "Red Flags" in the history and physical examination.

- Obtain *limited* laboratory screening tests including complete blood count (CBC), erythrocyte sedimentation rate (ESR), urinalysis, urine culture in girls, stool guaiac, possibly giardia antigen or O&P
- *Avoid unnecessary tests*: further testing should be directed by specific findings on history, physical exam and screening labs

Treatment plan:

Treatment includes explanation, reassurance, and helping the child to function despite pain.

- Demystify/Address concerns
  - Establish a working model with the family at the initial visit
  - Avoid giving the impression that "nothing is wrong"
  - Discuss normal physical findings
  - Explain that pain is real but there is no sign of a dangerous disease
  - Create appropriate expectations regarding pain and its treatment
- Behavior management/Responsibility
  - Promote normal functioning in the child and family
  - Identify any stressors on child, secondary gain, etc
  - Help the child develop coping strategies
  - Advise on the importance of regular school attendance
- Symptom diary/Support
  - Regular follow up visits to reassess and reassure are key
  - Support the child and family
  - Treatment of psychological problems (depression, anxiety, conversion disorder)
  - Hypnotherapy, relaxation training
- Dietary suggestions
  - Increasing fiber in the diet
  - Limiting lactose if lactose intolerance suspected (bloating, diarrhea) or positive lactose breath test

Outcome

One third of cases resolve spontaneously, one third continue to have RAP, one third develop other syndromes (irritable bowel, migraine headache) in adolescence or adulthood.

The Pain that "Just Wouldn't Go Away"

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9. Sanders M, Shepherd R, Cleghorn G, et al. The treatment of recurrent abdominal pain in children: A controlled comparison of cognitive-behavioral family intervention and standard pediatric care. *Journal of Consulting Clinical Psychology* 1994;62:306-14.

Suggested Readings (Annotated):

Rappaport L. Recurrent abdominal pain. In: Parker S and Zuckerman B, editors. *Behavioral and Developmental Pediatrics: A Handbook for Primary Care.* Boston: Little, Brown and Company, 1995. p. 247-250. Provides a good summary with specific examples of ways to manage cases geared to primary care providers.

Poole S, Schmitt B, and Mauro R. Recurrent pain syndromes in children: A streamlined approach. *Contemporary Pediatrics* 1995;12(1):47. Provides a practical/pragmatic approach to multiple recurrent pain syndromes including a sample symptom diary.

Oberlander T, Rappaport L. Recurrent abdominal pain during childhood. *Pediatrics in Review* 1993;14(8):313-319. This comprehensive review outlines epidemiology, pathophysiology, management, and treatment of RAP. Also includes a discussion of current theories of pain including neurological and psychological aspects.