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Why is Steve Small?

TUTOR GUIDE

Case Materials:

Tutor's Guide
Case
Narrative for Slides
3 day diet log
References
Slide Set
Growth Chart Slide for Steve
Growth Chart Slides
Evaluation Tools
- Tutor's evaluation/prior to presentation
- Tutor's evaluation/post presentation
- Student evaluations

Objectives:

By the end of this session, pediatric trainees will be able to:

1. Recognize the multitude of etiologies of childhood undernutrition.
2. Recognize that while etiologies of childhood malnutrition have been traditionally viewed as medical more recent opinion has reported that the preponderance of outpatients presenting with malnutrition has social, familial and financial issues as the etiology of their malnutrition
3. Understand the prudent utilization of the clinical laboratory in the evaluation of the child presenting with malnutrition.

Overview of FTT Case: This case deals with the issues of what is traditionally called "Failure to thrive" but really should be understood as childhood malnutrition. In the face of poverty, the most frequent etiology of malnutrition is lack of finances to purchase food. Many other attendant issues associated with poverty may cloud the

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doctor's judgement with regard to the etiology of malnutrition. It is not uncommon for families living in poverty to appear distressed, stressed and potentially dysfunctional. The stress of poverty per se may result in further complicating social issues.

It is also imperative for the doctor to realize that the provision of supplemental nutrition programs in cases where poverty has induced malnutrition routinely results in excellent weight gain. Etiologies of childhood malnutrition have been traditionally viewed as medical. However, since more recent opinion has reported that the strong preponderance of outpatients presenting with malnutrition have social, familial and financial issues as the etiology of their malnutrition. We should consider these diagnoses as diagnoses of inclusion rather than diagnoses of exclusion to be considered only after all purely medical etiologies have been ruled out.

Routinely, clinicians over-order medical/laboratory testing in cases of "FTT". Berwick showed that approximately 98 % of all lab tests done on inpatients with "FTT" were neither positive nor did they contribute to diagnosis. This fact suggests that pediatrician faced with a malnourished child are acutely aware that virtually every disease of pediatricians can, and eventually does manifest itself in undernutrition. However, going on extensive laboratory based "fishing trips" will not result in any benefit to the child. Experienced clinicians do recommend hemoglobin and hematocrit measures in all undernourished children, since more than 60 % of children who are malnourished are anemic. Also in areas where lead poisoning is endemic a lead level should be done since children with malnutrition seem to have a higher prevalence of lead poisoning than matched comparison subjects. Other laboratory testing is worthwhile only with a history or physical finding pointing you toward a more traditional medical diagnosis.

Therefore, the major treatment for reversing malnutrition is nutritional supplementation (though obviously if a more traditional medical diagnosis is made, other treatments are also needed). In the United States, there are a number of federal programs to help families in poverty provide adequate nutrition to their children. Food stamps, school lunches and breakfasts and WIC all improve nutritional status in two ways: by providing nutritious food and by allowing the purchase of a higher quality diets with the same amount of money for budgeted for food. Welfare reform has made discussing these issues difficult. The names of the programs often very from state to state. For simplicity, we have maintained the "old" names for these federal programs, despite the fact many of them are now administered by the states.

These supports are often referred to as "welfare," implying that there is an unearned benefit to the recipient. Actually, the benefit of these programs is to children and society by creating a healthy population able to learn, work and earn. They do not create "welfare dependence" since supplemental programs provide essential food to working families and their children. Contemporary food programs have never been shown to be a detriment to work. Rather, they are an alternative to the bread lines and soup kitchens of a post-Victorian era. There is an impact on parental perceptions as well as nutritional status when families are able to appreciate concern rather than neglect from society-at-large (R Karp, in press).

GUIDING QUESTIONS FOR DISCUSSION

Part 1

1. Can you make any sort of diagnosis based on one visit?

In this case probably yes, depending on the dietary history it is imperative to get a calorie count at this point. Should we learn that Steve's caloric intake is inadequate to provide for his growth the diagnosis of inadequate caloric intake probably based on poverty can be made.

2. How Do You Get A Dietary History?

One usually gets a three-day diet history detailing each meal. (see appended dietary history form)

It is important that the form be filled out as completely as possible with amounts of food taken being noted. It is best at this point to use a professional nutritionist to assist with the calorie count.

Part 2

3. How does a new baby effect the family's ability to feed Steve?

Obviously the addition of a new infant can be a stress in the family. The infant may simply stimulate Steve to eat less in order to gain attention or the fact of a new mouth to feed may stress the families finances to the point that there is simply not enough food for Steve to grow. Since it is clear from past research that many localities do not provide enough money for children to live above the Federal poverty level when they receive Transitional Assistance to Needy Family (TANF) the addition of another child can easily push a family over the brink and result in poverty induced malnutrition.

4. What Options Do You Have For Helping This Family?

WIC, Food Stamps, School breakfast/lunch programs, other supplemental food or nutrition programs (i.e., food pantries) are all possibilities. It is important that each residency training program identify local sources of food for children living in poverty. Also at this point it would be quite useful to involve a professional social worker who can assist the resident physician and the child to obtain all Federal and State food assistance programs to which he or she is entitled.

However, since social workers and nutritionists are not always available, the pediatrician needs to be able to assist with FTT (at least initially) without referrals. Then it is incumbent on each physician to learn to give basic advice on high calorie, age appropriate diet. A sample diet for a toddler is appended.

5. What Test Would You Order On This Child?

Hemoglobin (Hgb), Hematocrit (Hct), Lead Level (Pb), developmental assessment are all important in this case. Since the majority of children who are malnourished also suffer from iron deficiency anemia a Hgb and Hct are imperative. Also the literature on iron deficiency indicates that children who are iron deficient frequently have anorexia as a side effect of the malnutrition per se. Also studies of children environmentally at risk for lead poisoning who are also malnourished seem to have increased prevalence of lead intoxication versus match comparison subjects. The debate about further testing is an active one. There is no evidence to indicate that extensive laboratory testing is ever warranted unless there is a clear indication for doing a laboratory test either on the history or physical exam. In general any lab testing done should be focused specifically on the history or physical. In this case where the child has diarrhea one should consider a stool pH, reducing substances and guaiac. Other tests, such as TFT's are unlikely to be of any utility. This is because lack of growth (FTT) is such a severe symptom that "occult" or asymptomatic diseases do not cause it.

6. What Diagnoses Are You Considering?

At this point the main diagnoses to consider are poverty induced malnutrition, Gastrointestinal malabsorption/enteritis, lead poisoning and anemia. Obviously, mother reported not having enough money to buy food so this is the most likely etiology of the malnutrition. A stool pH, reducing substances and guaiac might be appropriate also in order to rule out the small possibility of enteritis or malabsorption suggested by the watery diarrhea noted on the review of systems.

7. ***What was Steve's prognosis for his malnutrition?***

Excellent, as it was relatively short lived. However, he also had complicating factors, i.e., the lead poisoning, which may have contributed to his later problems. The long term studies of malnutrition seem to indicate that the developmental sequellae of undernutrition are related to both the severity of the malnutrition and its chronicity as well as, the age of onset of the malnutrition. Younger children, whose brains are growing more rapidly are at higher risk for developmental sequellae than older children e.g., over age 4 years. Also, children with third degree malnutrition fare worse developmentally than those who suffer only first or second degree malnutrition (ref: Bithoney, W.G., Peds in Review)

Had Steve's malnutrition been more long standing e.g., from age 2 to 4 what would you think would be his prognosis?

Worse, since longer "exposure" in this case to malnutrition leads to greater complications

What if his malnutrition had lasted for 1 year through age 3 years?
Also worse, since younger malnutrition has greater effects on the developing brain.

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Why is Stevie Small?

Stevie is a 4-year-old noted by his teacher in the Head Start program to be much smaller than the other children his age. Six months ago he was seen by another pediatrician but the family moved and his mother chose to come to your practice because "it's more convenient," she says. Along with Stevie and his mother at this clinic visit are his two-year-old sister and newborn brother.

For his age, Stevie is less than the 5th percentile for both height and weight; his head circumference is at the 15th percentile. A review of the history shows that Stevie was born at full term weighing 6 lbs, 2 oz. He did well both in the immediate neonatal period and throughout the first 3 years of life, though his immunizations were frequently delayed. His physical exam is otherwise normal. He has never been hospitalized, and an extensive review of systems is essentially negative except for occasional watery diarrhea.

Social History

Stevie's mother Ana is 21 years of age and his father is uninvolved in his care. All three children seem healthy and have never been hospitalized. Ana quit high school at age 16 when she was pregnant with Steven and has since been supported most of the time by "welfare" (Transitional Assistance for Needy Families – TANF). At present she reports no participation in nutrition programs.

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PART II

You contact Stevie's previous provider, who faxes you his growth data (see growth chart). You speak with Ana and with tears in her eyes she says, "Oh, I am so scared for Stevie." After reviewing his records you read that Stevie has had multiple medical problems in the past, including lead poisoning, recurrent diarrhea, and multiple ear infections. His mother says that since the birth of her new infant, money has been very tight, and she has cut down on food purchases. In a detailed nutritional history, you learned Stevie was taking only 85 cal/kg/day. (See 3 day diet log)

EPILOGUE

Stevie's lead level came back at 45 microgram/dl, and a home inspection showed lead paint. The apartment was subsequently deleaded, Stevie was treated, and the family was enrolled in WIC, food stamp, school, breakfast and lunch programs. In addition to three regular meals a day, Stevie also received two snacks per day, and suggestions for a high calorie diet were made (see Table I).

His growth improved dramatically, but in 3rd grade Stevie was found to have both expressive and receptive language disorders. Stevie was placed in a special education setting.

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Tutorial Notes for Steve Small Slides

I. Definition

Slide 1. Unfortunately there is no uniform agreement as to a specific definition of failure to thrive. Most pediatric clinicians use the term failure to thrive during infant and toddler years Why is Stevie small? When abnormal weight status is present and/or abnormal weight gain or weight growth velocity is present. Some children may be considered failure to thrive and meet only the second criteria. Thus, a child who is quite large whose growth velocity across time even though his growth status may not be outside of typical range. following few slides define these criteria more specifically.

Slide 2. One determines abnormal weight status by referencing against the genetic growth expectations of the individual family, children of the same gender and gestation adjusted age, and the child's own length. It is important for the clinician to accommodate for the expected size of a child based on family-sized history. It may be normal for an individual child to be outside normal for population. There are formulae available to predict ultimate size based on both mother's and father's physical size, and there are tables available that allow one to adjust for current size based on parent size. The growth data that are typically referenced in most clinical settings today are those developed by the National Center for Health Statistics. It is important both to plot the child against the same gender and gestation adjusted age, where most people would agree that atypical is less than 5th percentile, and against the child's own length, where less than 10th to 25th percentile of the NCHS curves is considered atypically low.

Slide 3. The second aspect of the definition of failure to thrive is abnormal weight gain or growth velocity. There is no generally accepted method to determine abnormal growth velocity. Most clinicians accept the criteria of a child crossing two percentile lines on the NCHS curves, for a period of time lasting at least one to two months. Clearly these criteria are subjective. One is essentially attempting to exclude temporary growth problems that may result from acute illness. There are, unfortunately, problems in the use of the NCHS curves for this purpose, because these data were developed on cross sectional samples and individual children may follow different patterns of growth. Growth velocity curves have been developed for this purpose and have been increasingly used in clinical setting.

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Slide 4. Thus, the definition of FTT may include children who are “light”, “thin”, and who demonstrate atypical weight gain. I prefer to begin with determining the weight to length criteria noted earlier; with that, I am willing to accept either of the other two criteria, including light or atypical weight gain.

Slide 5. In a clinical setting, it is important to be cautious regarding several conditions that may be confused in decision-making regarding the presence of failure to thrive. First, one must be cautious in judging atypical growth status based on growth expectations of parents' size. Some children who have been born larger than their long-term genetic growth potential will downward cross multiple percentile lines in the first 24 months of life. The clinicians must take this into account in determining the presence of a clinical problem. Also, many children born small for gestational age never catch up to normal. In a clinical setting it is important to attempt to account for the presence of intrauterine growth retardation in determining the long term prognosis for the individual child.

Slide 6. Most pediatric clinicians currently define FTT by growth status only. Historically, the term FTT implied environmental causation, and commonly associated developmental and behavioral problems. While the latter two situations may be present in a large percentage of FTT children, they are not required to be present to meet definition for failure to thrive.

Slide 7. It should be noted that there has been considerable clinical dissatisfaction with the ongoing use of the term failure to thrive. Others have suggested an array of terminology such as growth delay, growth failure, failure to grow, growth deficiency, or failure to gain weight. None of these have been utilized uniformly in the literature, and failure to thrive continues to be the predominate terminology.

Slide 8. Failure to thrive is considered a very common clinical presentation, whether in inpatient or outpatient settings. While there has been a tendency to decrease the use of hospitalization to diagnose or manage failure to thrive, as many as 10% of clinic visits in both urban and rural settings have met criteria for failure to thrive. In general, nutrition problems and growth problems are relatively common in low income populations. One study demonstrated up to 10% of less than four year old children were “stunted”. This is a clinical situation in which malnutrition becomes chronic and ultimately length growth becomes abnormal.

II. Etiology and Classification

Slide 9. Most experts in failure to thrive now believe that central to the development of failure to thrive in undernutrition, whether or not medical disease is present.

Slide 10. In the tradition of pediatrics, clinicians have classically dichotomized the etiology of failure to thrive into organic failure to thrive, which ascribed etiology to the medical condition of the child, or to the opposite extreme of non-organic failure to thrive, in which no medical disease is identified in the child, and thus the assumption is made that there are problems in the child's environment. In the last 20 years, greater sensitivity to interactive and transactive causation to failure to thrive has been developed as will be described below.

Slide 11. The following are definitions of organic, non-organic, and a mixed etiology failure to thrive. In the organic category, the medical clinician judges that the medical disease present is the sole cause of the failure to thrive. In the non-organic etiology, the medical physician disease is present, are the etiology to the child's problem. In the mixed category, the clinician judges that problems in both the child and environment in combination are the cause of the failure to thrive.

Slide 12. These date, taken from one prospective study of children seen in an ambulatory setting, describe the frequency of all children with failure to thrive who have organic, non-organic, or mixed etiology. These numbers have been documented in other studies as well. It is striking that the vast minority of children with failure to thrive have physical disease which causes the failure to thrive.

Slide 13. There are many problems with the organic/non-organic dichotomy that have caused this terminology to fall into disfavor. Several of these are depicted on the following two slides.

Slide 14. For all of these reasons, probably most particularly that the terminology is not specific enough to develop an individualized management plan, it is urged that the clinician when evaluating a child with failure to thrive use different terminology and collect a full array of data of develop a treatment plan. These will be described below.

Slide 15. Besides the organic/non-organic mixed terminology noted above, there have been several other clinical subtypes of children with FTT described, with terminology often based on the type of clinician involved. The various aspects of the clinical presentation, such as the age of onset, severity, and chronicity of the disease may be important in of planning a diagnosis and management plan, and it may be of particular importance for prognostic purposes. Those infants with the most extreme and chronic cases of failure to thrive, particularly those who suffer this in the first 18 to 24 months of life, are most likely those

who may have suffered brain damage from malnutrition, and thus have the worst long term prognosis.

Slide 16. Irene Chatoor, a psychiatrist/pediatrician, has developed clinical subtypes based on a socio-emotional perspective. She divided these subtypes into homeostasis, attachment, and separation/dividuation disorders. Problems of homeostasis occur in the early months of life in children who have difficulty stabilizing into normal patterns of feeding, resting, etc. These are seen typically in subpopulations such as premature infants or drug exposed infants. Problems in attachment occur between the approximate ages of four to six months. This situation is most commonly seen in a situation of chronic depression on the part of the parent, and in chronically deprived living circumstances. The final categorization is the separation and dividuation disorder, which Dr. Chatoor has recently labeled infantile anorexia. This typically develops in the 11 to 36 month of age group, where the transition from liquid feeds to table foods becomes problematic. Often the focus of control between parent and child becomes centered on meal times, and food refusal and atypical diets occur. While this categorization is of theoretic appeal, it is less clear whether it relates to specific treatment plans or prognoses.

Slide 17. Other psychiatric diagnoses have been utilized in children with failure to thrive, including the current terminology of feeding disorder. In addition, infantile depression or reactive attachment disorder, terms from DSM-IV, have been used with children with failure to thrive. Finally, certain children develop mechanical feeding disorders with food aversion. This has been described by occupational therapists, and is seen in children with subtle neurodevelopmental problems, or in children who have had experience with tube feeding.

Slide 18. The terminology of transactional failure to thrive is increasingly being utilized as the preferred method of referring to failure to thrive, both from a diagnostic perspective, as well as in developing a treatment plan. In this categorization, it is acknowledged that multiple aspects of the child, whether overt of subtle, parents, and their proximal and distal environments, interact across time to result ultimately in failure to thrive. Identifying these problematic characteristics and developing management plans to alleviate them are often necessary to successfully manage children with failure to thrive.

Slide 19. This slide depicts multiple characteristics of the proximal and distal environment, which can be supportive if positive or stressful if negative, and provide the context in which failure to thrive can develop depending on the parent/child interaction. Proximal home environment may include such things as positive or negative parental relationship, poor physical quality of the home, disorganized home, nonstable environment with multiple moves and changes, and, of course, inadequate resources. Strengths or weaknesses within the family, neighborhood, and workplace all may buffer or exacerbate problems in the home. All of these in combination may ultimately contribute to the evolution of failure to thrive in the child.

III. Diagnostic Approach

Slide 20. The general goals for the clinical evaluation of a child with failure to thrive are listed here. In general, the clinician is attempting to identify any disease which can negatively affect growth potential, increase basic caloric needs, or decrease available or utilization of calories. Otherwise, one is attempting to identify any subtle or overt problem of the child of parents which negatively affect the ability of the parents to meet the child's nutritional needs.

Slide 21. The first critical hurdle is to get the parent to acknowledge that a potential clinical problem exists. Many families will insist that all people in their family were thin as infants, or that the baby is just normally small. Initial effort should be extended to help the family understand why a child's growth status is considered worrisome, based on referenced growth \standards, by demonstrating with growth curves the child's current status and growth velocity against typical. If the parents do not acknowledge problem, there is a great likelihood that there will be no follow through on the diagnostic and treatment recommendations.

Slide 22. The diagnostic approach and evaluation of a child with failure to thrive is multifaceted. It is recommended that some variation of all of the following be obtained in the initial outpatient assessment. First, one needs to confirm the presence of absence of the growth problem utilizing current weight, height, past growth data if at all possible, accommodating of the genetic growth potential of the child based on parent size, and correcting for gestational age for premature infants. Careful and accurate growth data are required, and appropriate use and interpretation of NCHS growth curves are urged.

A thorough medical history is urged, attempting to identify any predisposing medical illnesses noted in the history of presenting problem, and review of systems. A careful past medical history, including prenatal and perinatal history, and the family history for inherited diseases that may affect growth, as well as family size are important. A thorough physical examination should be completed looking for the presence of illnesses or chronic conditions that may predispose to growth problems. During the completion of the physical examination, monitoring the quality of the parent/child interruption, including the parent's sensitivity and responsivity to the child's distress during the evaluation, may be useful.

Slide 23. The clinician should consider assessing child developmental status either in as screening approach or in a formalized way. There are specific behavioral abnormalities that are described in children with failure to thrive that may confirm a nonmedical etiology. Things such as a excessive hand and finger wringing, excessive thumb sucking, inappropriate infantile posturing, general inactivity and lack of vocalizations, and inappropriate avoidance of normal socialization such as eye contact and physical contact, are atypical and suggest failure to thrive.

The laboratory evaluation of a child with failure to thrive is approached cautiously and in a step-wise fashion.

Slide 24. The laboratory evaluation should be dictated by the history and physical, and not be performed in a shotgun approach. The initial lab data may be minimal, including consideration of documentation of nutritional status such a s albumen, iron, and zinc. Children in endemic areas should be considered for evaluation of tuberculosis, AIDS, giardia lamblia, and lead poisoning. It has been documented that almost without exception, children with medical illnesses that cause the child's growth problem may be identified by a careful and complete history and physical examination, and that shotgun laboratory evaluations do not contribute to the diagnosis.

Slide 25. An assessment of the child's dietary intake and feeding style is an important part of the evaluation of failure to thrive. The nutritional assessment includes an estimation of kilocalories per kilogram per day based on reported formula and food intake. Equally important may be an understanding of the structure of mealtimes and the feeding techniques utilized by the parents. Often parents may feed an infant in an appropriate position with much movement in a distracting environment. Often toddlers becomes a focus of fighting between parent and child. All of the above need to be acknowledged and a treatment plan developed. Finally, a careful social history is required to identify strengths and weaknesses of the parents and families which facilitate treatment planning.

Slide 26. This slide lists the multiple aspects of the social history that would be useful in understanding the circumstances in which the parent and child are living.

Slide 27. Chronic and acute depression are common mental health disturbances of adults. The clinician needs to be sensitive to the psycho-emotional status of the primary care taker, and develop a management plan appropriate for depressed parents. As noted earlier, an assessment of parent/child interaction, especially in its relation to feeding, may be appropriate. Often the clinician develops a sense of the quality of the parent/child relationship during the pediatric history and physical examination interview.

Slide 28. Following are several characteristics noted during the clinical evaluation that the clinician may note when assessing parent/child interaction.

IV. Management

Slide 29. In most cases today, children and families with failure to thrive should be closely managed in an outpatient setting. This is increasingly important in the current era of cost containment. There are several advantages to hospitalization, including facilitating the medical nutritional evaluation and allowing the clinician to directly observe and develop a feeding plan around parent/child interaction. On the other hand, the overwhelming disadvantages include cost, as well as removing the child and parent from their normal environment.

Slide 30. The following are indications for consideration of hospitalization. The last indication, failure of outpatient management, is the most likely reason to require hospitalization. This suggests a careful outpatient management plan, as will be described below, has been implemented and failed.

Slide 31. The following are the full ranges of a treatment plan that should be considered when managing children with failure to thrive. Not all of the treatment aspects are required in every case, but rather the treatment plan should be individualized around these areas.

Central to the treatment is nutritional assessment and intervention. The goal is to develop a nutritional rehabilitation plan by establishing appropriate intake to restore and maintain a normal nutritional status. This may require the use of high calorie formula preparations and high calorie density food additives. In general, a calorie goal is 1-1/2 to 2 times typical for children of that size. In addition, a review of feeding style and techniques and mealtime structure should be reviewed and support provided as needed.

An important goal is an attempt to improve parent/child interaction.

Slide 34. The following are generic goals for improving parent/child interaction that have been demonstrated to be useful.

Of course, managing any other aspect of the problem, including physical disease, social family problems, or parent mental health, is required.

The importance of regular and routine follow-up cannot be emphasized enough. Ongoing monitoring of the child's health and growth status, dietary intake, and parent's reaction to feeding and mealtime success are important for the ongoing monitoring of the success of the plan.

Created by Patrick Casey, MD

Food and Beverage Intake Record

Name _____

Date : _____

Dietitian: Dietician _____

Doctor: Jones _____

Height: _____

Weight: _____

Age: _____

Department of Nutrition
and Food Service
Children's Hospital
300 Longwood Avenue
Boston, MA 02115
(617) 355-6177

Children's Hospital

Food and Beverage Intake Record

Name: _____

Date and Day of the Week: Oct 3, Thurs

Time	Place	Amount	Food or Drink and Description		
7:00	Home	3/4 serving	Quaker Oatmeal - Maple / Brown Sugar - w/ water & Any cream (2 Tbsp)		
10:00	Day Care	6oz	Apple Juice		
		1/4 apple	Apple		
		handful	Pepperidge Farm Gold Fish		
12:30	Day Care	3/4 sand. (no crusts)	Peanut Butter + Jelly Sandwich - on white bread		
	Day Care	4oz	Milk w/ 3/4 oz Hy heavy cream		
	Day Care	3/4 serving	Jello Pudding cup - Choc/vanilla mix		
3:00	Day Care	4oz	Apple Juice		
		handful	Pretzels		
6:00	Home	3 pieces	Chicken nuggets w/ ketchup		
		6-8	Fresh fries		
7:00	Home	1 cup	Vanilla Icecream		
		6oz	Milk w/ 1 oz hvy cream		

Today's food and beverage intake is (circle): More than usual Less than usual (A typical day)

Describe any physical activity done and the amount of time spent doing it: Physical Activity (ie playing, arts + crafts, etc) from 7:30 Am to 7pm less 1 hr. nap.

Food and Beverage Intake Record

Name: _____

Date and Day of the Week: Oct 5, Saturday

Time	Place	Amount	Food or Drink and Description		
7:00	Home	3/4 waffle	Waffle w/ butter & maple syrup		
		1/4	bagel w/ cream cheese (only about 2 bites of the bagel - the rest was cream cheese off top)		
9:00	Home	4oz	Milk w/ 1/2 oz hvy cream		
10:00	Home Country's	1/4 c	Cheerios		
12:20	Restaurant	1	Chicken strip w/ ketchup		
		5	Fries		
		1/2	Roll w/ butter		
1:00		4 Tbsps	Icecream - Vanilla		
3:00		1/4 c	Cookies		
5:30		1	Hotdog		
		2 Tbsp	Baked beans		
			Water		
7:30		3oz/oz	Milk w/ hvy cream		

Today's food and beverage intake is (circle): More than usual Less than usual (A typical day)

Describe any physical activity done and the amount of time spent doing it:

Food and Beverage Intake Record

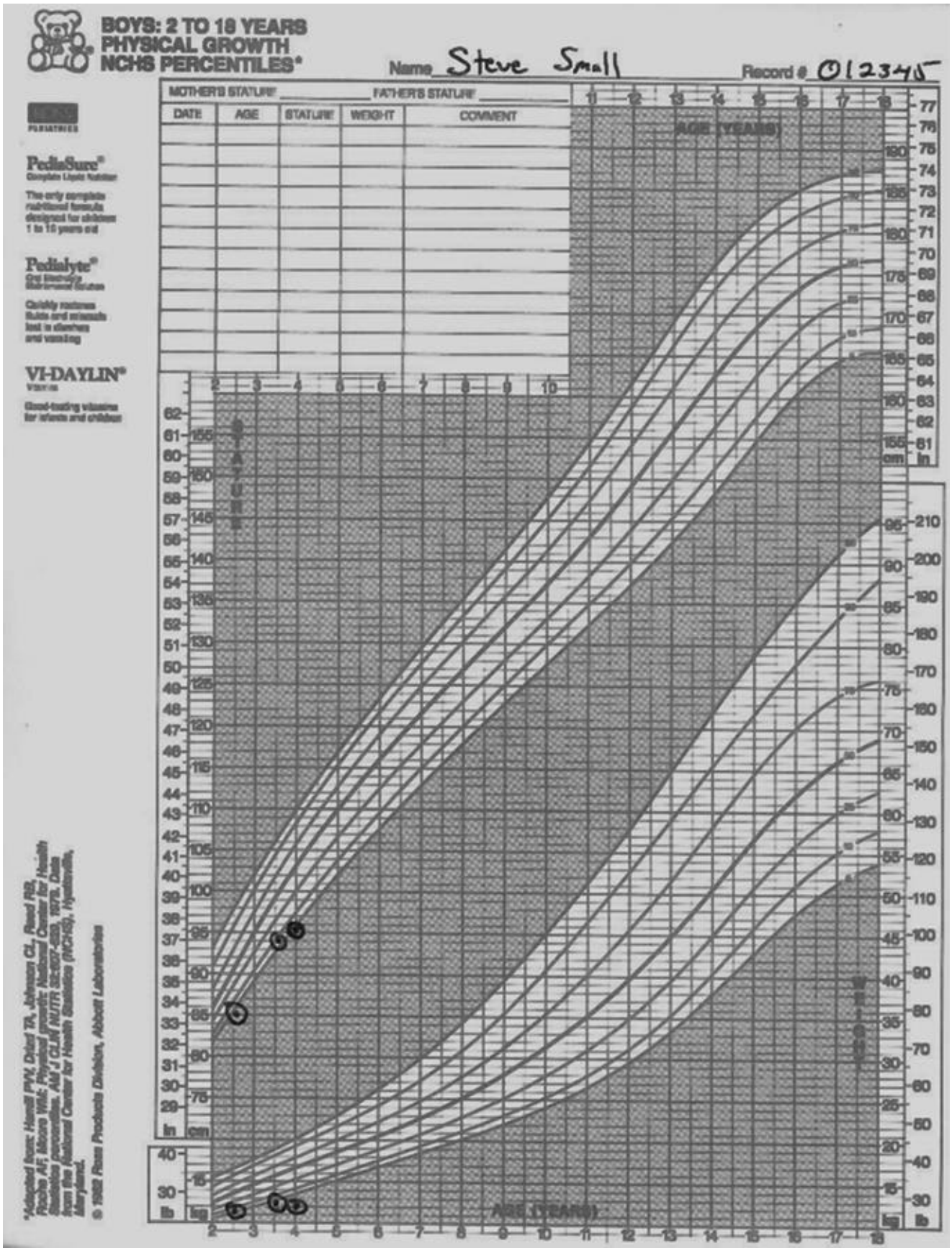
Name: _____

Date and Day of the Week: Oct 4, Fri

Time	Place	Amount	Food or Drink and Description		
7:00	Home	3/4 serving	Quaker Oatmeal - Maple		
			1 Brown Sugar w/ water		
			1 & TBSP Hvy cream.		
		4oz	Milk w/ 1 oz Hvy cream		
9:30	Home	6oz	Apple Juice		
		3/4 bowl	Pretzels / Bugles / Corn		
			Chips		
12:30	Home	1/2 sand	Peanut butter + jelly		
			sandwich (no crusts)		
3:00		1	Tootsie Pop		
		4oz	Milk w/ 1 oz Hvy cream		
6:00		3/4 bowl	Spaghetti w/ meat		
			sauce		
		1/2 roll	Roll w/ butter		
7:00		1	Brownie		

Today's food and beverage intake is (circle): More than usual Less than usual (A typical day)

Describe any physical activity done and the amount of time spent doing it: Playing 4 hours


BOYS: 2 TO 18 YEARS
PHYSICAL GROWTH
NCHS PERCENTILES*
Name Steve Small
Record # 012345
MOTHER'S STATURE _____ FATHER'S STATURE _____
DATE
AGE
STATURE
WEIGHT
COMMENT
AGE (YEARS)
STATURE
PediaSure®
Complete Liquid Nutrition
The only complete nutritional formula designed for children 1 to 15 years old
Pedialyte®
Oral Electrolyte Maintenance Solution
Quickly restores fluids and minerals lost in diarrhea and vomiting
VI-DAYLIN®
Good-tasting vitamins for infants and children
*Adapted from: Hamill PVV, Drizd TA, Johnson CL, Reed RB, Roche AF, Moore WM: Physical growth: National Center for Health Statistics percentiles. Am J Clin Nutr 32:607-629, 1979. Data from the National Center for Health Statistics (NCHS), Hyattsville, Maryland.
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Key to growth chart slides

A- FTT in an infant (lack of calories secondary to poverty)

B - Same child as A, again lacking calories secondary to poverty

C/D - Turner's Syndrome on a regular growth chart and a Turner's growth chart

E - Hypothyroidism

F - Familial short Stature

G - Constitutional delay case

H - Head Circumference Chart - meant to be used with A& B, but representative of any child who's cranial growth is spared

I = acquired Growth Hormone Deficiency

J - Congenital Growth Hormone Deficiency after treatment

K - Congenital Growth Hormone Deficiency prior to treatment

L= Channeling

M - Accelerated and Decelerate Growth Curves for use in abnormal Growth Patterns. The points plotted correspond to Case G above (Constitutional Delay)

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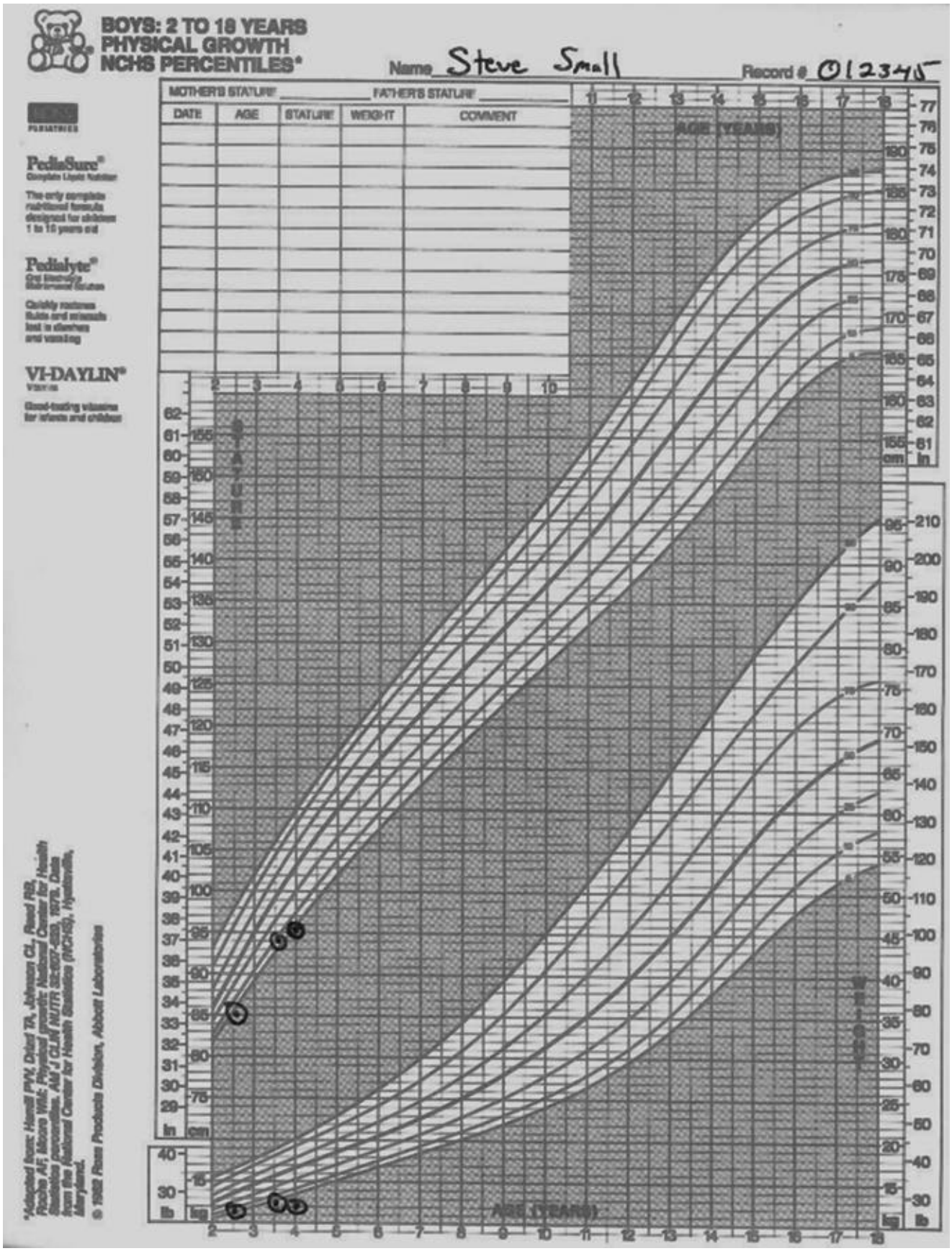
BOYS: 2 TO 18 YEARS
PHYSICAL GROWTH
NCHS PERCENTILES*
Name Steve Small
Record # 012345
MOTHER'S STATURE _____ FATHER'S STATURE _____
DATE
AGE
STATURE
WEIGHT
COMMENT
AGE (YEARS)
STATURE
PediaSure®
Complete Liquid Nutrition
The only complete nutritional formula designed for children 1 to 15 years old
Pedialyte®
Oral Electrolyte Maintenance Solution
Quickly restores fluids and minerals lost in diarrhea and vomiting
VI-DAYLIN®
Good-tasting vitamins for infants and children
*Adapted from: Hamill PVV, Drizd TA, Johnson CL, Reed RB, Roche AF, Moore WM: Physical growth: National Center for Health Statistics percentiles. Am J Clin Nutr 32:607-629, 1979. Data from the National Center for Health Statistics (NCHS), Hyattsville, Maryland.
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Module Evaluation

For presenters to fill out before the teaching session

A. I consider myself

1.A nationally known expert on this topic	**2**. A locally known expert on this topic	**3**. Very knowledgeable on this topic	**4**. to have learned about this topic to teach it	**5**. **Not sure**

B. I spent approximately _____ minutes preparing for teaching this topic.

C. Of the time I spent preparing to teach this topic, I used material provided to me as part of the Serving the Underserved Curriculum

1. 100% of the time
2. 75-99%of the time
3. 50-74% of the time
4. 25-49% of the time
5. <25% of the time

D. How appropriate were the educational objectives?

1. **Excellent** **2**. **Good** **3**. **Average** **4**. **Poor** **5**. **Not sure**

E. How appropriate were the tutor notes?

1. **Excellent** **2**. **Good** **3**. **Average** **4**. **Poor** **5**. **Not sure**

F. How appropriate were the references?

1. **Excellent** **2**. **Good** **3**. **Average** **4**. **Poor** **5**. **Not sure**

G. If your answer to any of the above questions (except A) was 3, 4 or 5, please comment.

Please feel free to write further comments on the back of this sheet.

Thank you for taking the time to fill out this evaluation.

*This material was adapted from that created by Janet Hafler, Ed.D.

Module Evaluation

(For Presenters to use after the teaching session)

Presenter:_____

Your responses will help us refine and develop this case.

A. Please rate the overall quality of this material as a stimulus for learning.

1. Excellent **2. Good** **3. Average** **4. Poor** **5. Not sure**

B. Please rate the classes participation in the learning

1. Excellent **2. Good** **3. Average** **4. Poor** **5. Not sure**

C. How comfortable were you with case based teaching

		Not at All				Very Much
1.	**Prior to this teaching session**	**1**	**2**	**3**	**4**	**5**
2.	**During the teaching session**	**1**	**2**	**3**	**4**	**5**
3.	**After the teaching session**	**1**	**2**	**3**	**4**	**5**

D. Please list how long you spent on this topic, and how the time was devided

Total Time _____ **minutes**

Time spent on case discussion _____ **minutes**

Please describe how you spent the rest of the time

E. Please Rate each of the following

		Poor				Excellent
1.	**The Educational Objectives**	**1**	**2**	**3**	**4**	**5**
2.	**The Case Vignette**	**1**	**2**	**3**	**4**	**5**
3.	**The Tutor Guide, including guiding questions**	**1**	**2**	**3**	**4**	**5**
4.	**Reference List**	**1**	**2**	**3**	**4**	**5**
5.	**Handouts**	**1**	**2**	**3**	**4**	**5**
6.	**Audiovisual Materials**	**1**	**2**	**3**	**4**	**5**

If you answered 1-3 on any of the above, please comment further

F What were the cases strengths

1.
2.
3.

G What were the cases weaknesses

1.
2.
3.

H What is the single most important thing that you learned from the case discussion?

I Case Evaluations

1. Do you think facts or data should be added? **1. Yes** **2. No**
If **yes**, what should be added?

2 Do you think facts or data should be deleted? **1. Yes** **2. No**
If **yes**, what should be deleted?

J. Tutor notes evaluation

1. Did you use the **tutor notes**? **1. Yes** **2. No**
If **no**, why not?

2. What were the **tutor notes** strengths?
1.
2.
3.

3. What were the **tutor notes** weaknesses?
1.
2.
3.

4. How would you suggest improving the t**utor notes**?

5. Do you think facts or data should be added to the **tutor notes**? **1. Yes** **2. No**
If **yes**, what should be added?

6. Do you think facts or data should be deleted from the tutor notes? **1. Yes** **2. No**
If **yes**, what should be deleted?

K Slide Evaluation

1. Did you use any of the **slides**? **1. Yes** **2. No**
If yes, which ones

2. How would you suggest improving the **slides**?

3. Do you think more slides would be useful? **1. Yes** **2. No**
If **yes**, what should be added?

4. Do you think there are slides that will never be useful? **1. Yes** **2. No**
If **yes**, what should be deleted?

L Did you use any other materials **1. Yes** **2. No**
If **yes**, what other materials?

If supplied by the Serving the Underserved Project, how would you improve the material

M. What did you as a teacher learn about this topic?
#1
#2
#3

Please feel free to write any further comments on the back of this form

Thank you for taking the time to fill out this evaluation.

*This material was adapted from that created by Janet Hafler, Ed.D.

Module Evaluation

Presenter:_____

Your responses will help us refine and develop this educational material. The person completing this form is:

PGY1 PGY2 PGY3 Fellow Faculty Other_____

A. What is the single most important thing you learned from the case discussion today.

B. Please rate the overall quality of this case as a stimulus for learning.
1. Excellent **2. Good** **3. Average** **4. Fair** **5. Poor**

C. The facilitator

		Not at All				Very Much
1.	**Encourages student direction of teaching**	**1**	**2**	**3**	**4**	**5**
2.	**Stimulated interest in the subject matter**	**1**	**2**	**3**	**4**	**5**
3.	**Encouraged Group Participation**	**1**	**2**	**3**	**4**	**5**

D. I consider the facilitator

1.A nationally known expert on this topic	**2**. A locally known expert on this topic	**3**. Very knowledgeable on this topic	**4**. a teacher who learned about this topic to teach it	**5**. **Not sure**

E. Please rate each of the following components of the teaching session (N/A for not applicable)

		Poor		Good		Excellent	
1.	**Case Vignette**	**1**	**2**	**3**	**4**	**5**	**N/A**
2.	**Case Based/Learner Centered Format**	**1**	**2**	**3**	**4**	**5**	**N/A**
3.	**Handouts/Supplemental Materials**	**1**	**2**	**3**	**4**	**5**	**N/A**
4.	**Teacher/Facilitator**	**1**	**2**	**3**	**4**	**5**	**N/A**

F. Do you think information should be added? **1. Yes** **2. No** **3. Not Sure**
If **yes**, what should be added?

G. Do you think information should be deleted? **1. Yes** **2. No** **3. Not Sure**
If **yes**, what should be deleted?

H. Comments

Please feel free to write any comments on the back of this sheet.

Thank you for taking the time to fill out this evaluation.

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