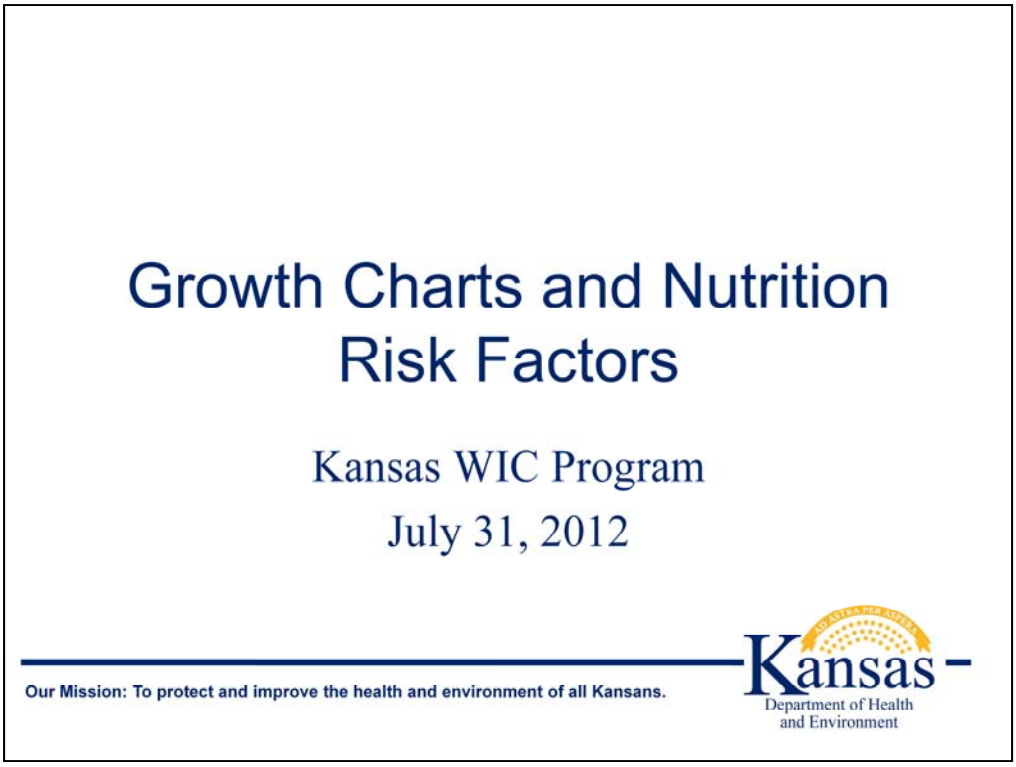
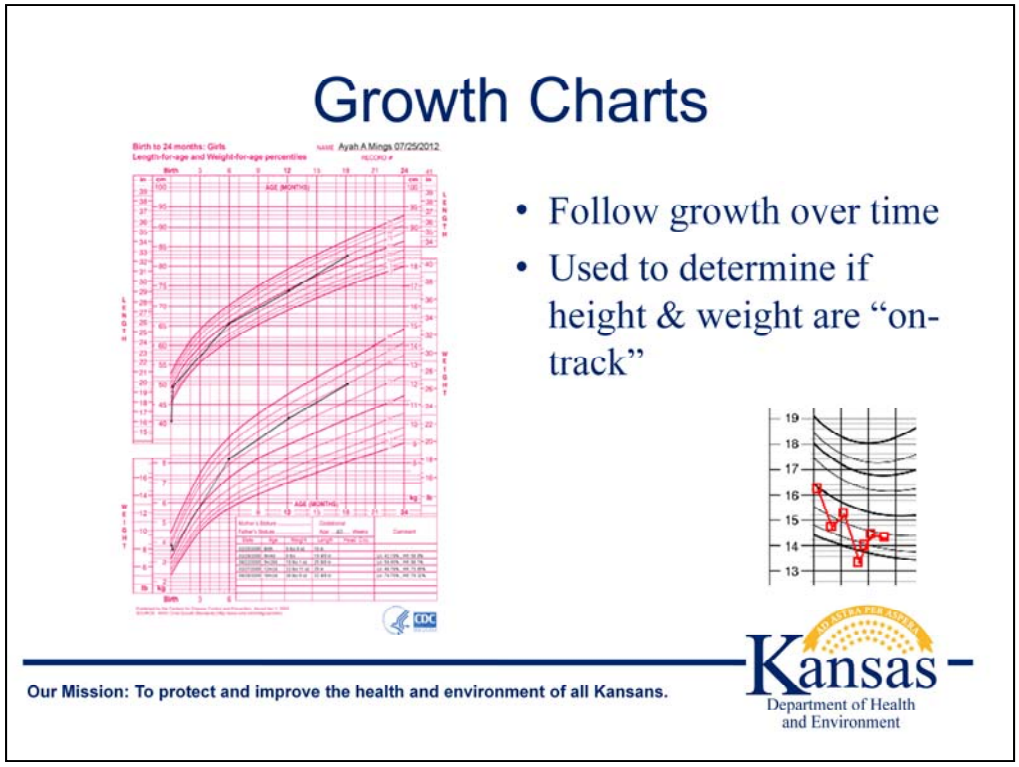
Growth Charts and Nutrition Risk Factors



Welcome to 2012 training on Growth Charts and upcoming changes to Kansas WIC Nutrition Risk Factors.

The growth chart portion of this training assumes all attendees have completed the CDC's online training course, Using the WHO Growth Charts to Assess Growth in the United States Among Children Ages Birth to 2 years (http://www.cdc.gov/nccdphp/dnpao/growthcharts/who/index.htm)

These changes will require a new version of KWIC. The new version will begin being rolled-out on August 10th



Growth charts are a tool used to follow growth over time.

A single point does not provide much information, when evaluating growth. The percentile a child falls in isn't nearly as significant as changes in percentiles over time. Use multiple points to determine if height and weight are on track and the child is following a normal growth pattern. It's the trends over time that are important. If a child was in the 25th percentile, and jumps to the 75th, they are not yet in the overweight category, but it is a flag to talk about and keep a close eye on.

Review the growth charts with caregivers every time the child is measured and ask questions to assess understanding. Some parents are confused to hear that a child who is in, say, the 50th percentile of weight for her age has a BMI in the obese range because she's only in the 10th percentile for height.

Not only does viewing the actual chart at the appointment help parents visualize their child's growth, but also allows the clinic to catch grossly inaccurate measurements before the SA does. The inset is an actual screen shot of a Kansas WIC child which shows wild fluctuations and probable mis-measurements.

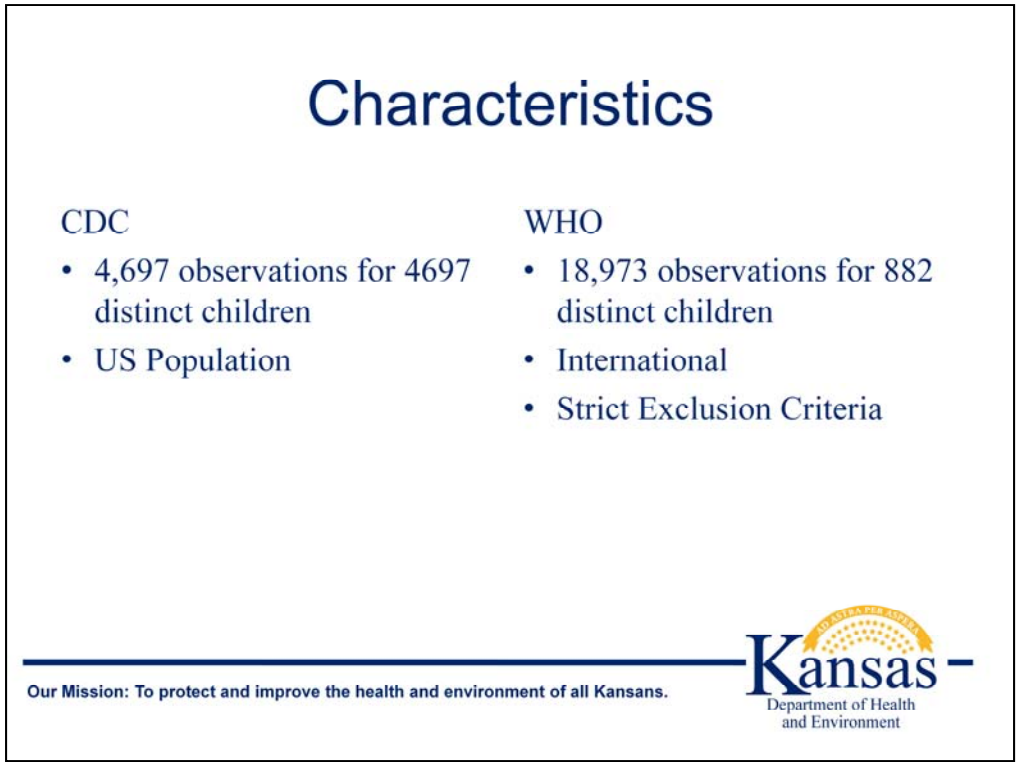
Medical care providers have always attempted to compare the growth of an individual child with others. Until the late 1970s, a variety of different growth charts were used to assess child growth.

In 1977, the National Center for Health Statistics (NCHS) published a new set of growth charts for children aged <18 years based on data from nationally representative surveys. In 1978, CDC took the data and computed z scores. The WHO then recommended that these z scores be used as a global reference for the definition of malnutrition. The standard set of curves began to be used worldwide, but they were based on white, middle class Americans and did not represent the world wide population.

To collect more data, NCHS over sampled children up to 6 years old in a third National Health and Nutrition Examination Survey (NHANES) and in 2000 the CDC released new charts.

The “new” WHO growth standards were released in 2006.

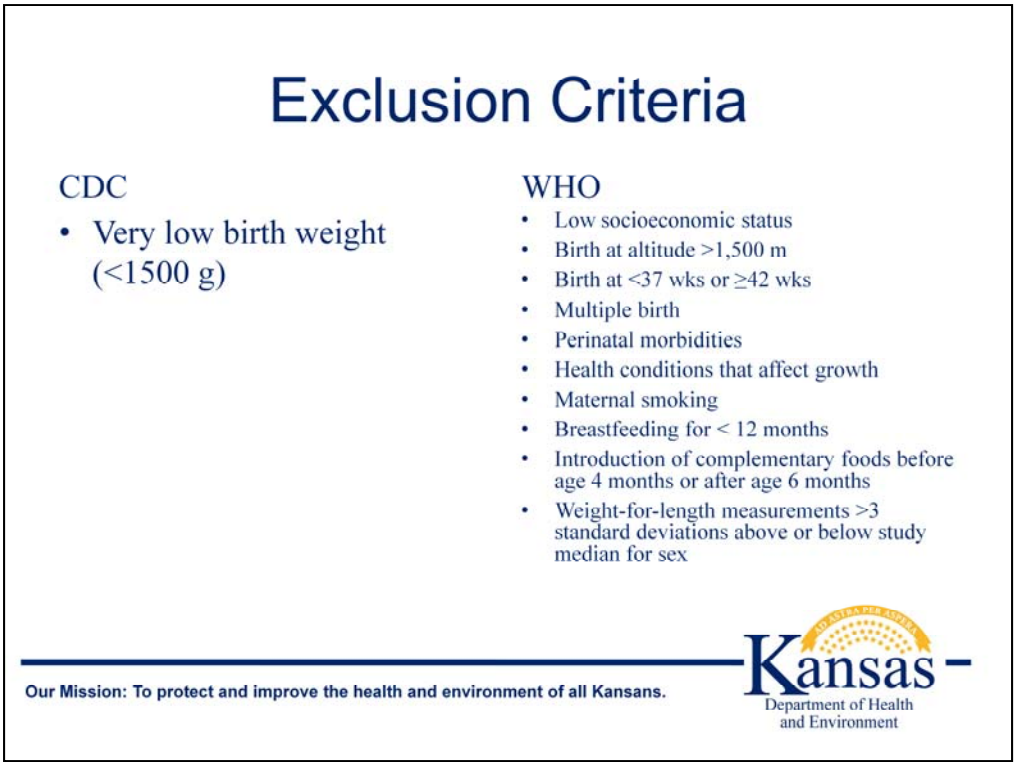
What are the differences between these charts?



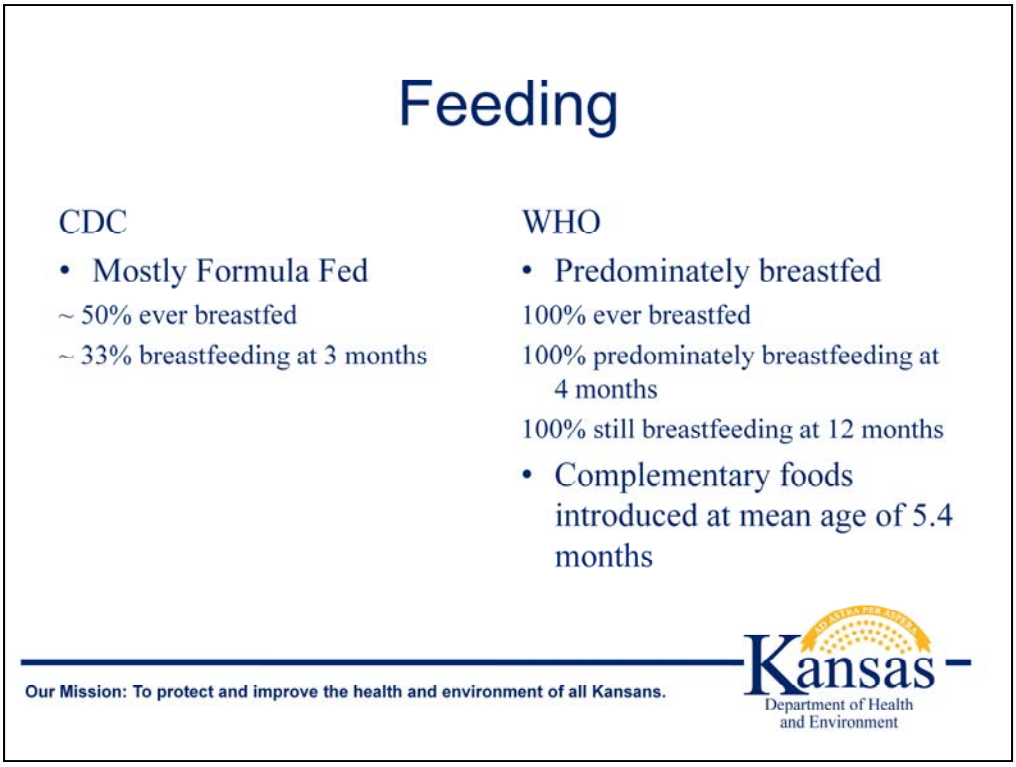
Let's start with the population that the charts represent.

The CDC growth curves for children aged 2-23 months were based on 4,697 data points and an equal number of children. The WHO Growth standards are based on 18,973 data points and only 882 children.

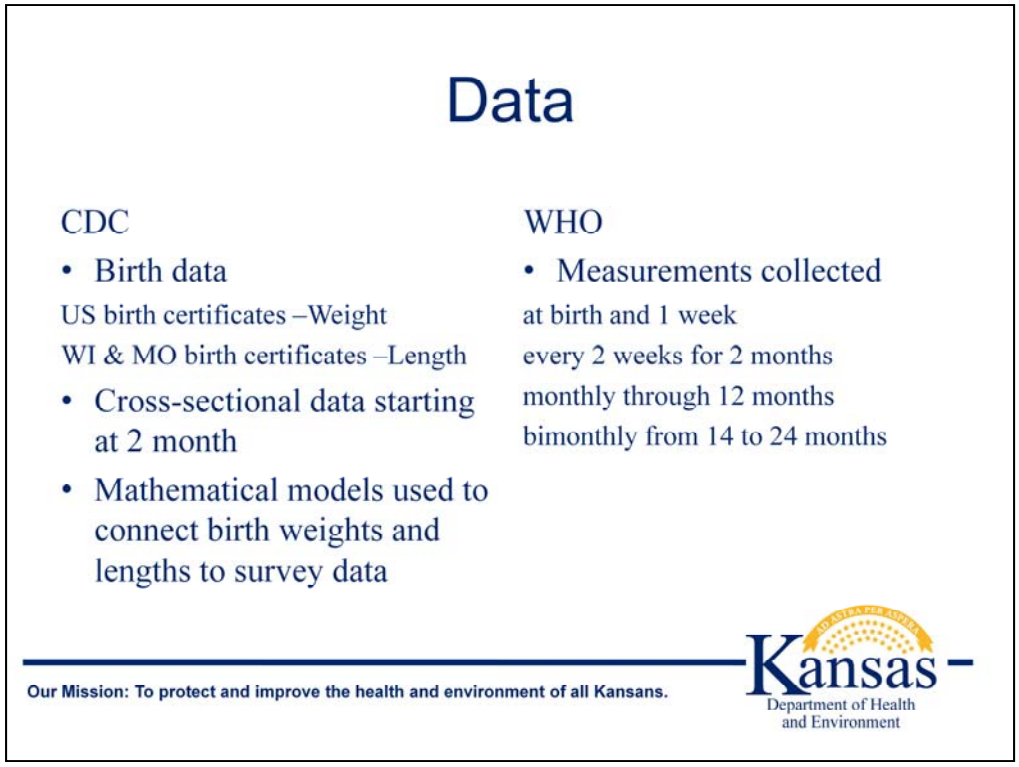
The WHO growth curves included children from Brazil, Ghana, India, Norway, Oman and California and followed strict exclusion criteria. The CDC chart is only children living in the US.



The WHO study had an extensive list of criteria to be included in the study, while CDC only excluded children with a very low birth weight.



Breastfeeding is the norm for mothers and infants and is the standard for growth. The WHO Growth standards are based on infants in optimal conditions which includes breastfeeding and introduction of solids.



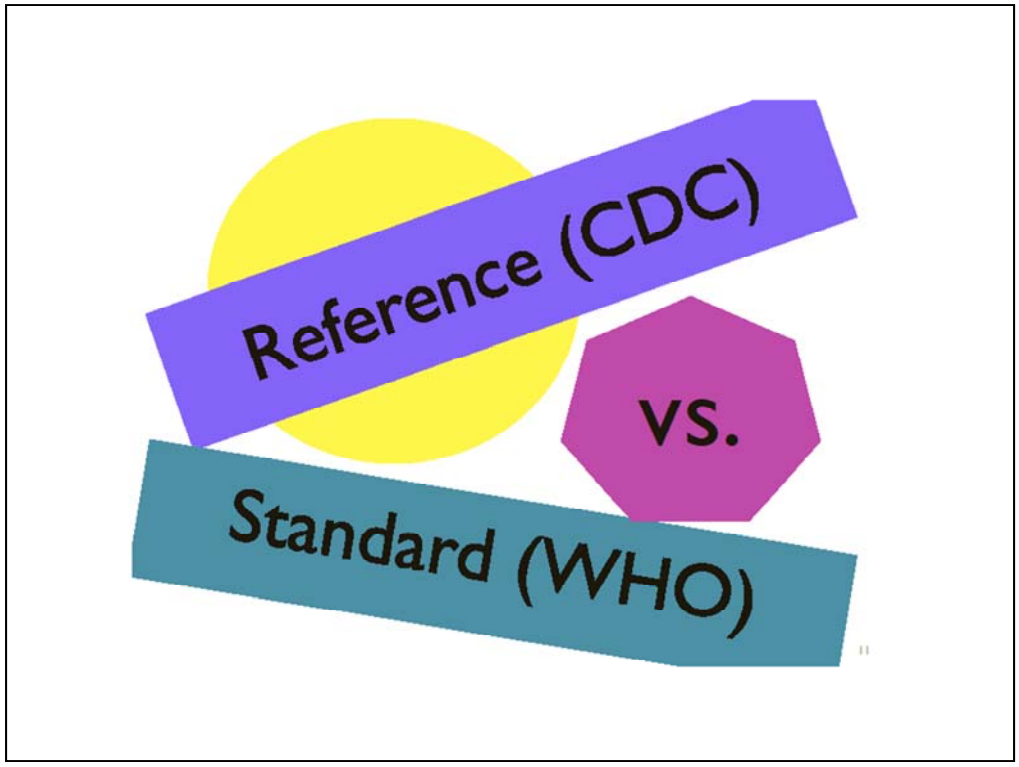
The CDC growth curves for children aged <36 months were based on cross-sectional data from various sources.

The curves were anchored at birth using national birth weight data obtained from U.S. birth certificates from 1968--1980 and 1985--1994 and birth length data from Wisconsin and Missouri birth certificates (the only states with these data available on birth certificates) from 1989--1994 .

From 2 months on data were primarily based on data from NHANES with supplementary length the CDC Pediatric Nutrition Surveillance System (PedNSS) (1975--1995). No NHANES and very little PedNSS data were available for infants aged <2 months

Mathematical models were then used to create the graphs.

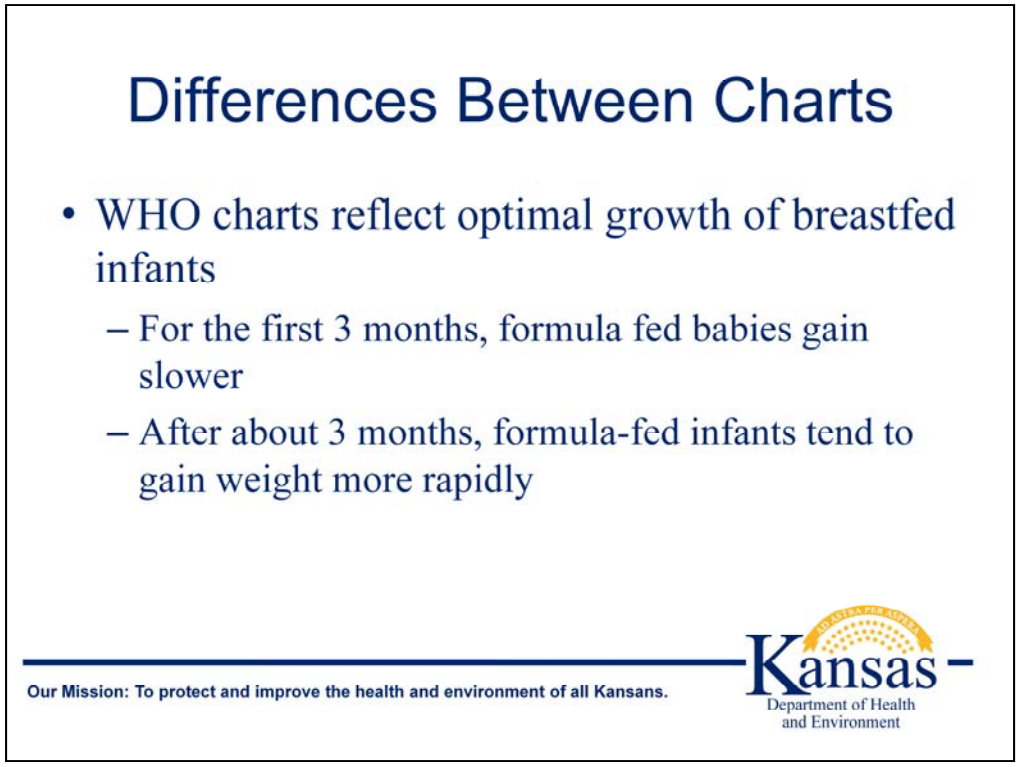
The WHO graphs represent longitudinal data with measurements of weight and length at birth; 1, 2, 4, 6, and 8 wks; and 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 14, 16, 18, 20, 22, and 24 months. The same kids, representing how children grow.



The 2000 CDC growth charts are a growth reference and describe how certain children grew in a particular place and time. The CDC charts describe the growth of children in the United States during a span of approximately 30 years (1963--1994). Typical growth patterns may not be ideal growth patterns

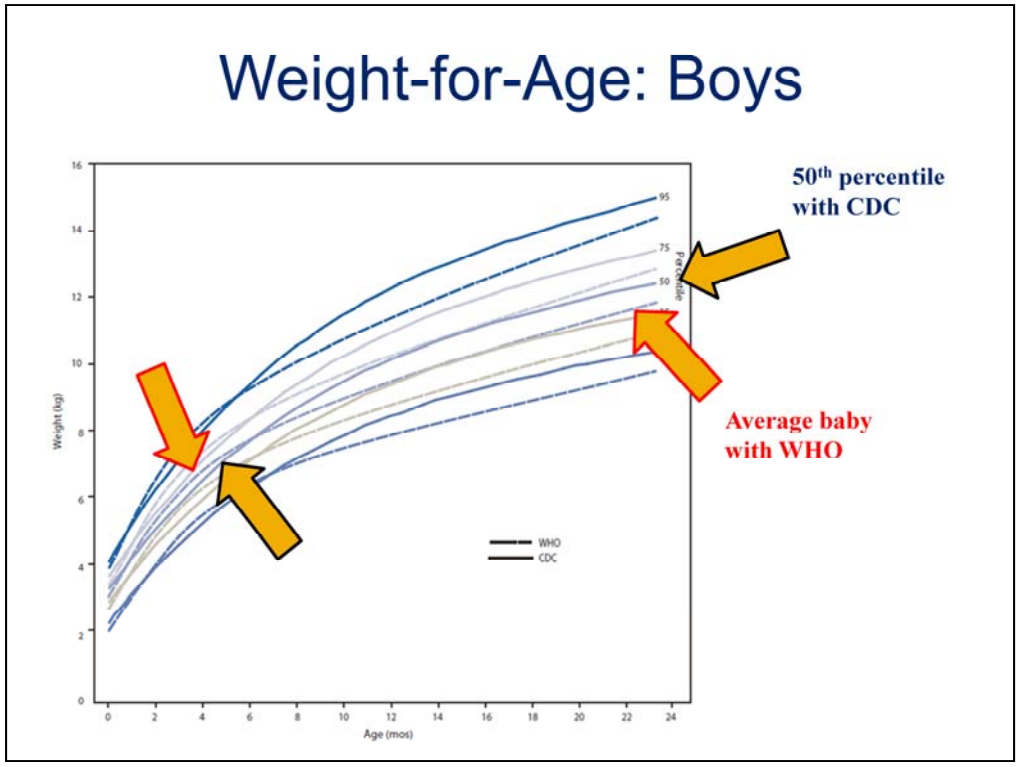
Since the data is based on how an individual child grew. The WHO charts are growth standards that describe how healthy children should grow under optimal environmental and health conditions.

The WHO growth charts are standards; they identify how children should grow when provided optimal conditions.



Formula fed babies gain and grow slower in the first 3 months, so would more more likely to be identified as slow gainers, but after 3 months formula fed babies start gaining faster and many breastfed babies might be labeled as “failure to thrive”

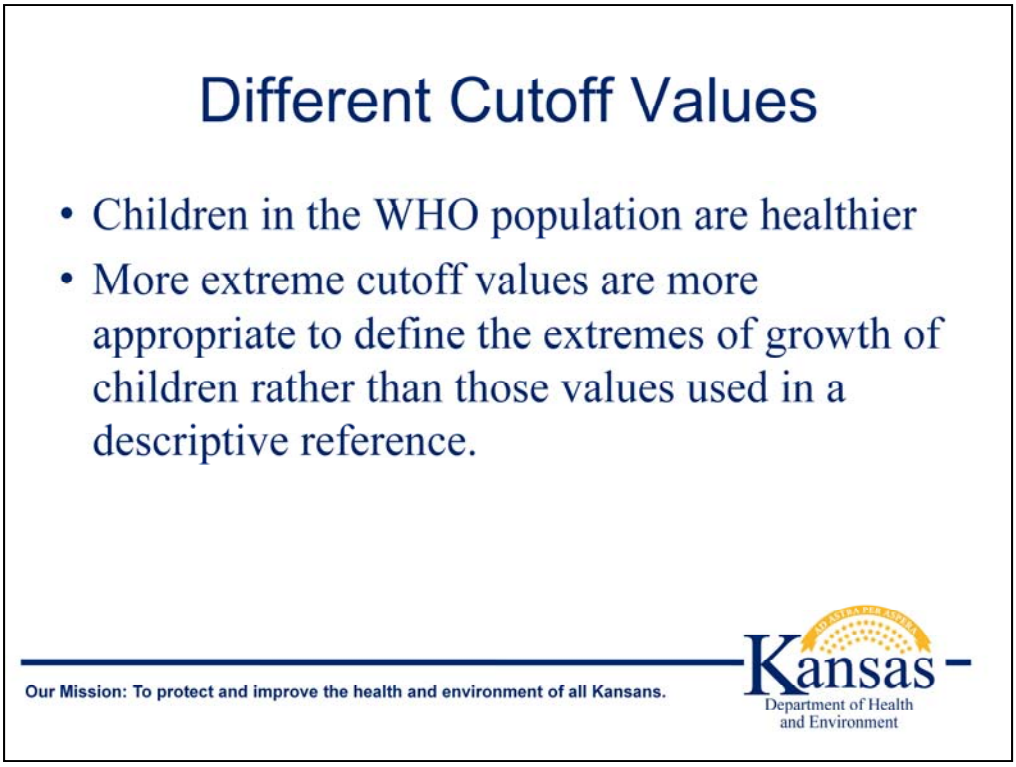
This might lead to the caregivers of formula fed babies to be instructed to feed more when the babies are young and early termination of breastfeeding because of concerns the “baby isn’t getting enough” after 3 months.



Comparing the 2 charts shows the birth information is similar,

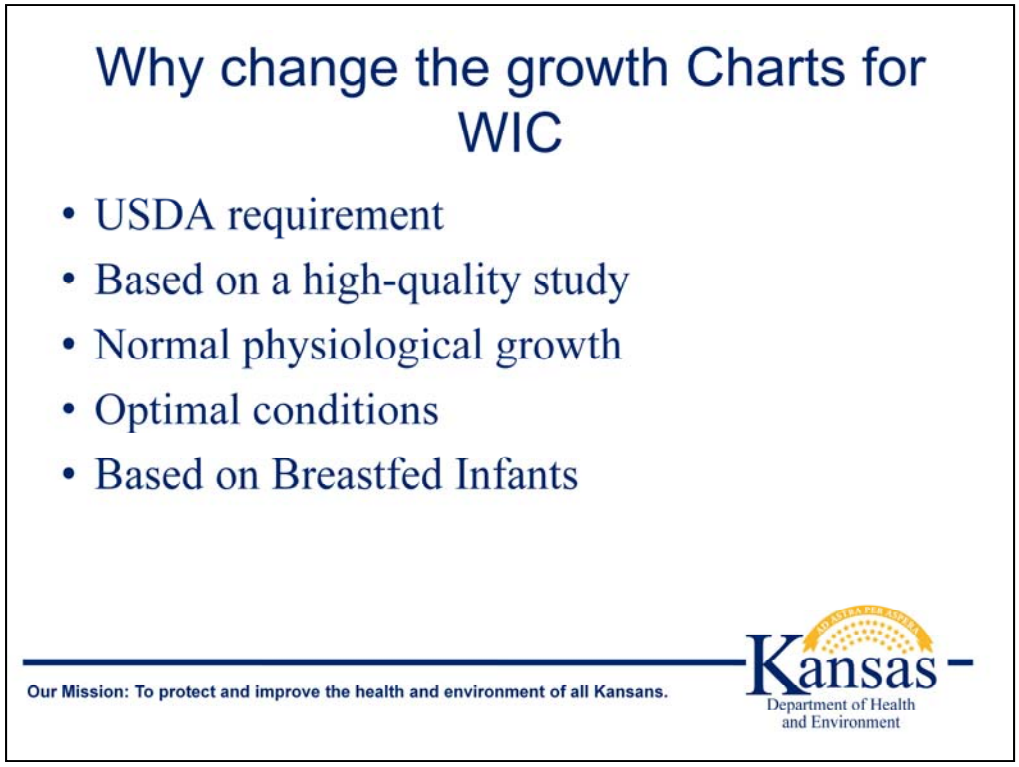
Separates at 3 months where the WHO chart is slightly higher than CDC

But by 24 months, the WHO chart is quite a bit lower then the CDC

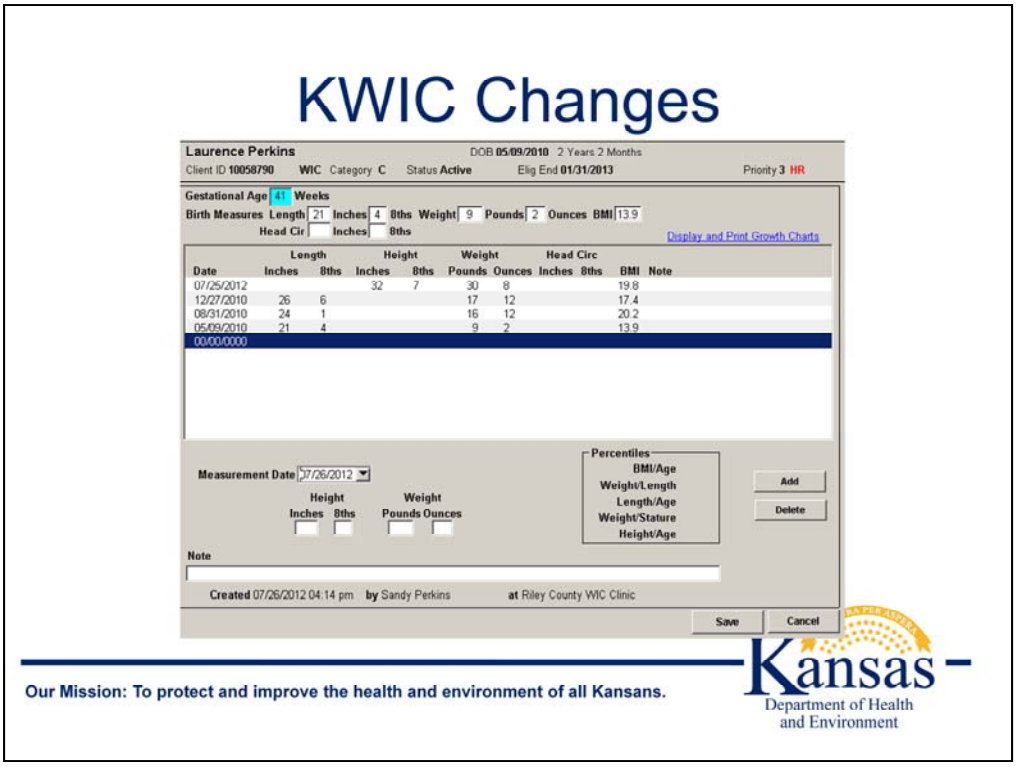


If you think back to the slide about the exclusion criteria, the WHO charts are actually based on a healthier population

So more extreme cutoff values are appropriate to define the extremes of growth. Therefore, smaller percentages are used to determine underweight and larger percentages are used in the definition of obese and overweight using WHO.

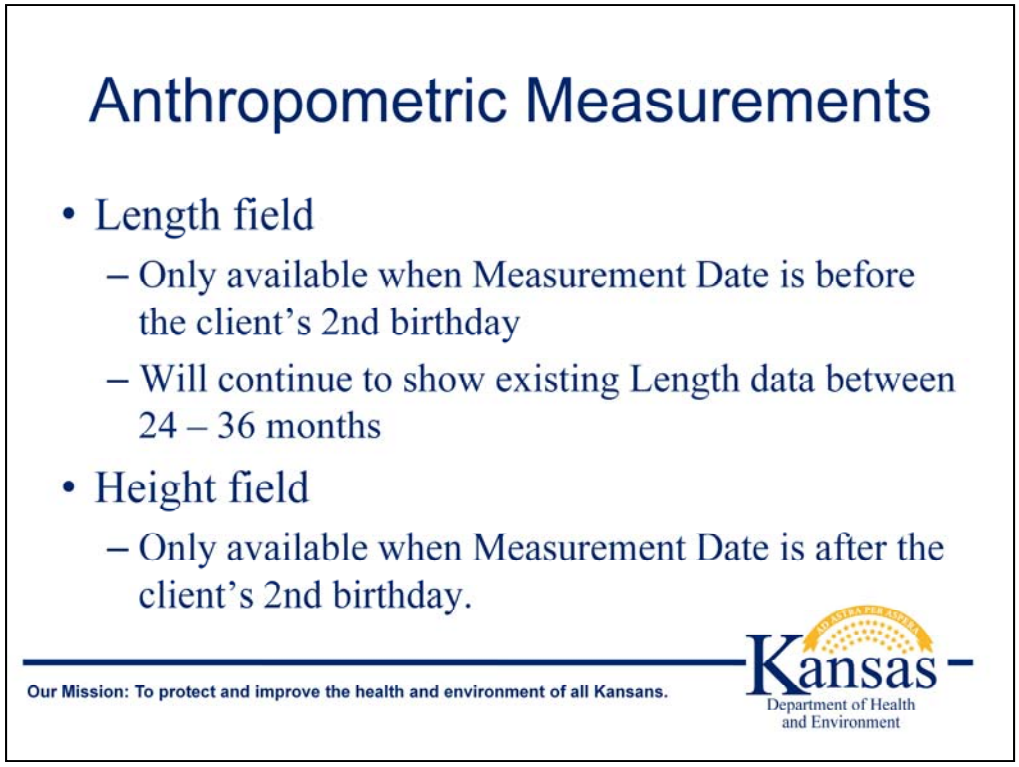


In 2006, CDC, the National Institutes of Health, and the American Academy of Pediatrics convened an expert panel to review scientific evidence and discuss the potential use of the new WHO growth charts in clinical settings in the United States. On the basis of input from this expert panel, CDC recommends that clinicians in the United States use the 2006 WHO international growth charts, rather than the CDC growth charts, for children aged <24 months (available at https://www.cdc.gov/growthcharts). The CDC growth charts should continue to be used for the assessment of growth in persons aged 2--19 years.

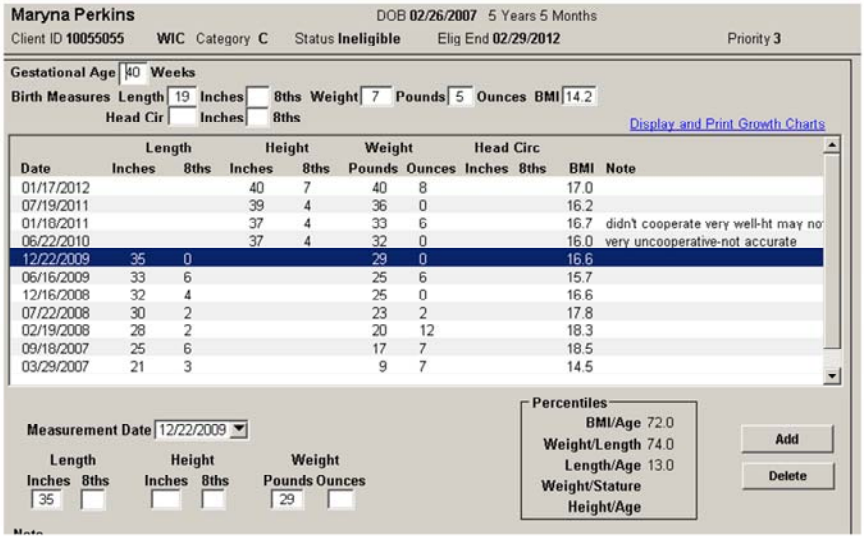


Changes of this magnitude require changes to the KWIC system.

A new version will be deployed to a clinic near you the week of August 3rd.



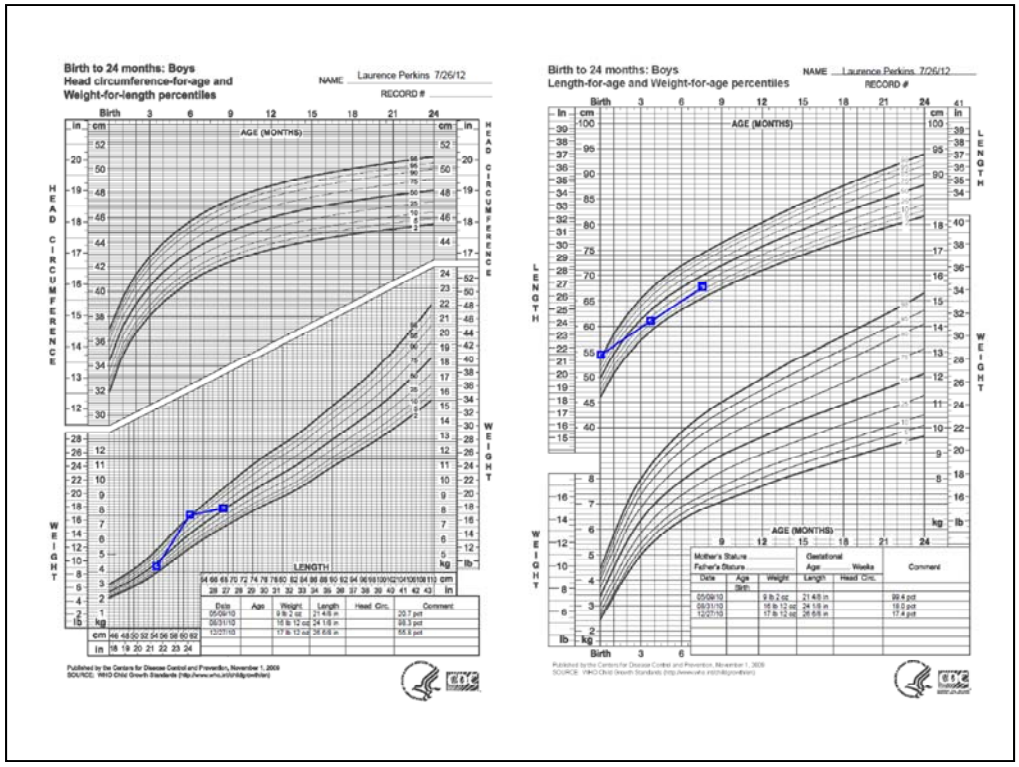
The Length field will now only be available when the child is less than 24 months old. It is also available to correct existing Length data between 24 – 36 months
No changes to the Weight field
No changes to the Head Circumference field which will continue to be available 0-12 months



Percentiles box will continue to show the percentiles calculated when the measurements were entered.

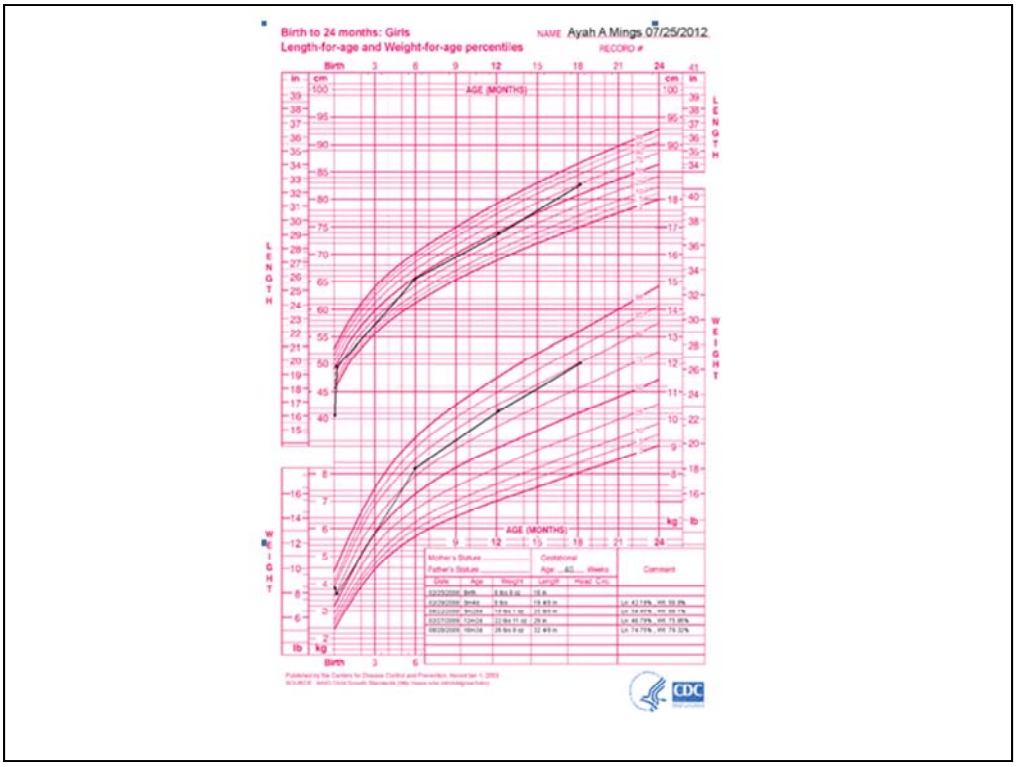
Graph Display: 0-24 Months

- New 0-24 Month WHO Growth Charts (Boys' and Girls' versions):
  - Length for Age (0-24 months)
  - Weight for Age (0-24 months)
  - Weight for Length (0-24 months)
  - Head Circumference for Age (0-24 months)



Currently, the look of the graphs will remain very similar, only representing the new graphs.

The percentiles that print on the graph will represent the appropriate numbers for the display, NOT the percentiles that are displayed on the Anthropometric Measurements window.

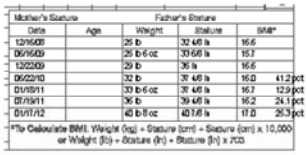


When KWIC.NET arrives in your clinic (late fall to early winter) the charts will look very different.

1. The grids will be displayed in red for girls and blue for boys, with black growth lines.
2. Height for age and weight for age will both display at the same time.
3. All known information (including gestational age) will be included in the data box.
4. Resolution will be much improved and graphs will be able to be viewed more zoomed in.

Graph Display: 2-5 Years

- No changes
- Will be in color in .NET
- Existing Lengths will display
- Box will display all measures, including some not on graph.



Mother's Stature		Father's Stature		
Date	Age	Weight	Stature	BMI*
12/16/08		25 lb	32 4/8 in	16.6	
06/16/09		25 lb 6 oz	33 6/8 in	15.7	
12/02/09		29 lb	36 in	16.6	
06/22/10		32 lb	37 4/8 in	16.0	41.2 pct
01/18/11		33 lb 6 oz	37 4/8 in	16.7	12.9 pct
07/19/11		36 lb	39 4/8 in	16.2	24.1 pct
01/17/12		40 lb 8 oz	40 1/8 in	17.0	25.3 pct

*To Calculate BMI: Weight (kg) ÷ Stature (cm) ÷ Stature (cm) x 10,000 or Weight (lb) ÷ Stature (in) ÷ Stature (in) x 703

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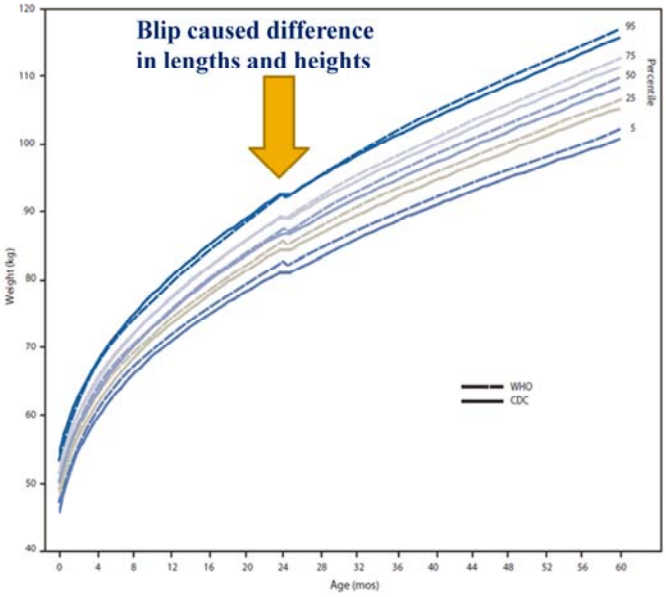
The graphs for children 2-5 are not changing, but will have all the KWIC.NET features previously described

Existing lengths for children between 24 and 36 months will plot on the 2-5 chart. Lengths are slightly longer than heights and may result in a small blip on the chart.



This image demonstrates the blip caused when measurement techniques switch from lengths to heights. This needs to be taken into consideration when viewing the graph. Remember to explain the blip to parents.

Risk Factor Changes

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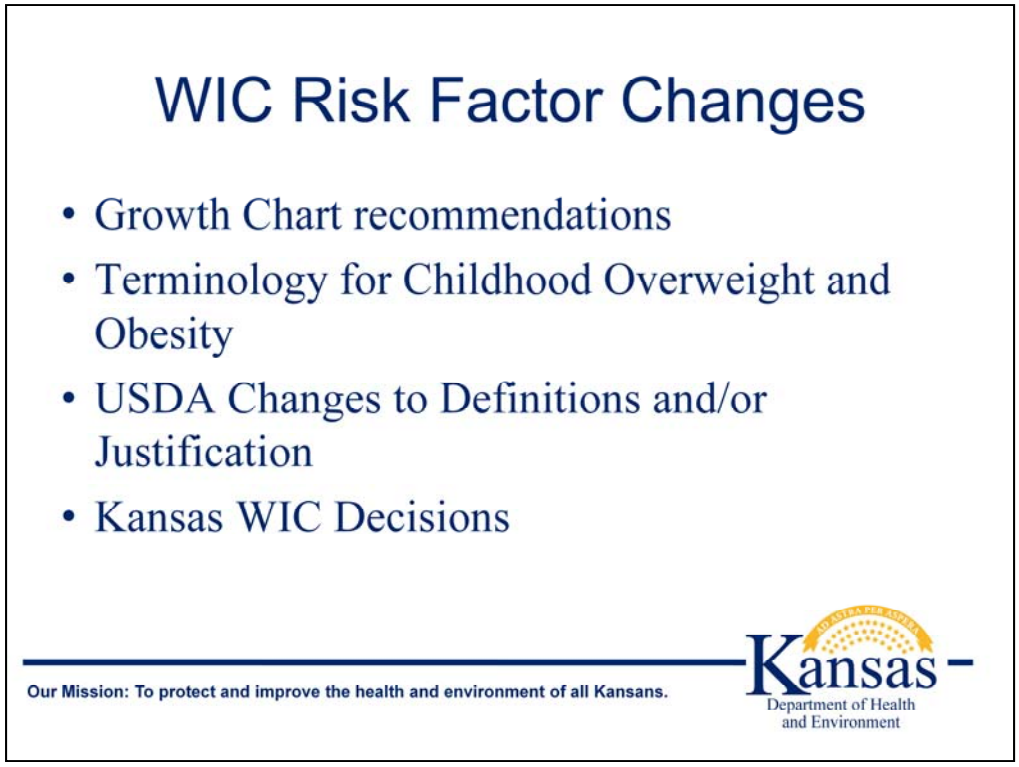
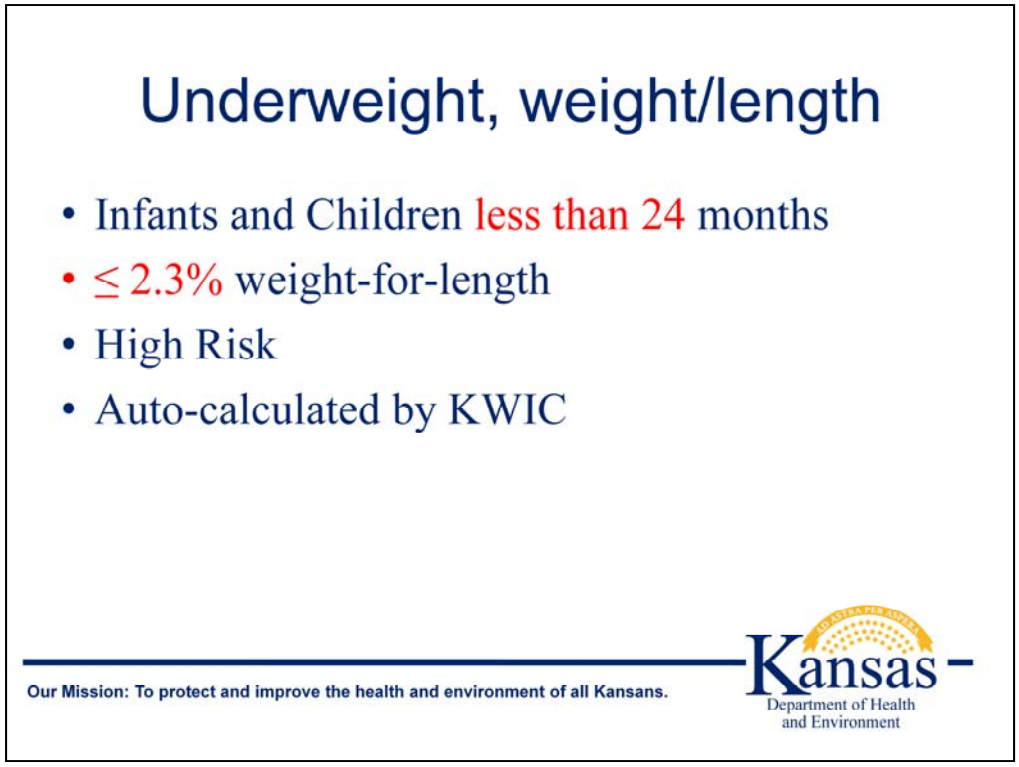


Risk Factor history will continue to display the risk assigned and not the changed risk factors.

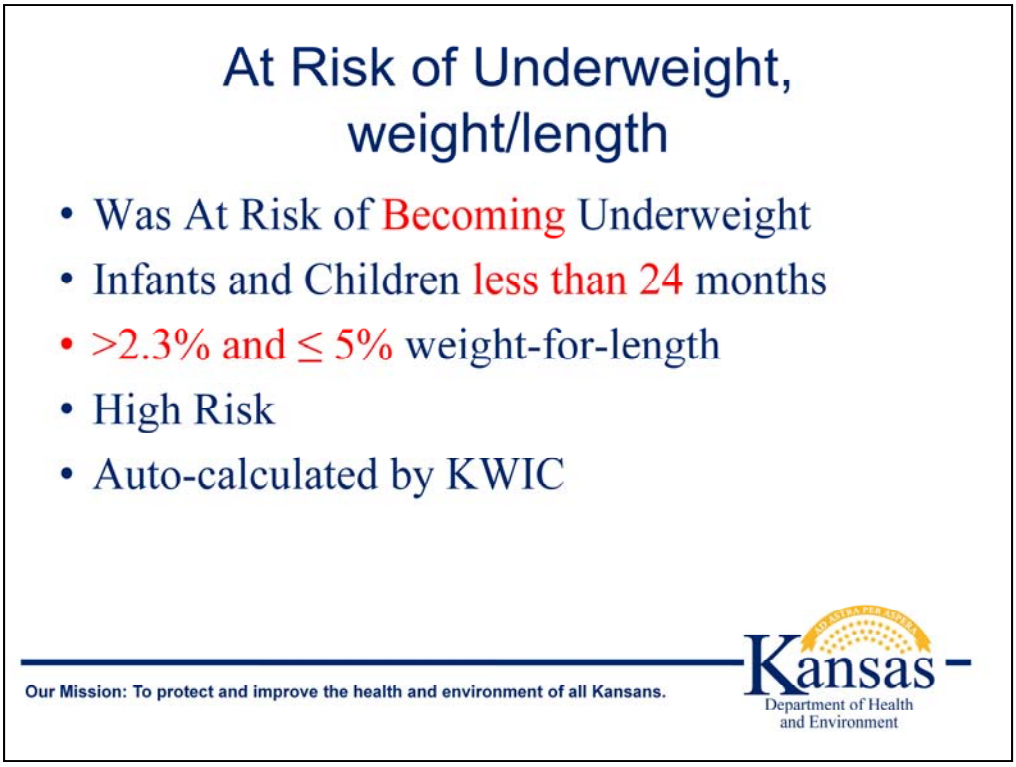


Underweight, weight / length still only for children with lengths, but now that is limited to those under 24 months

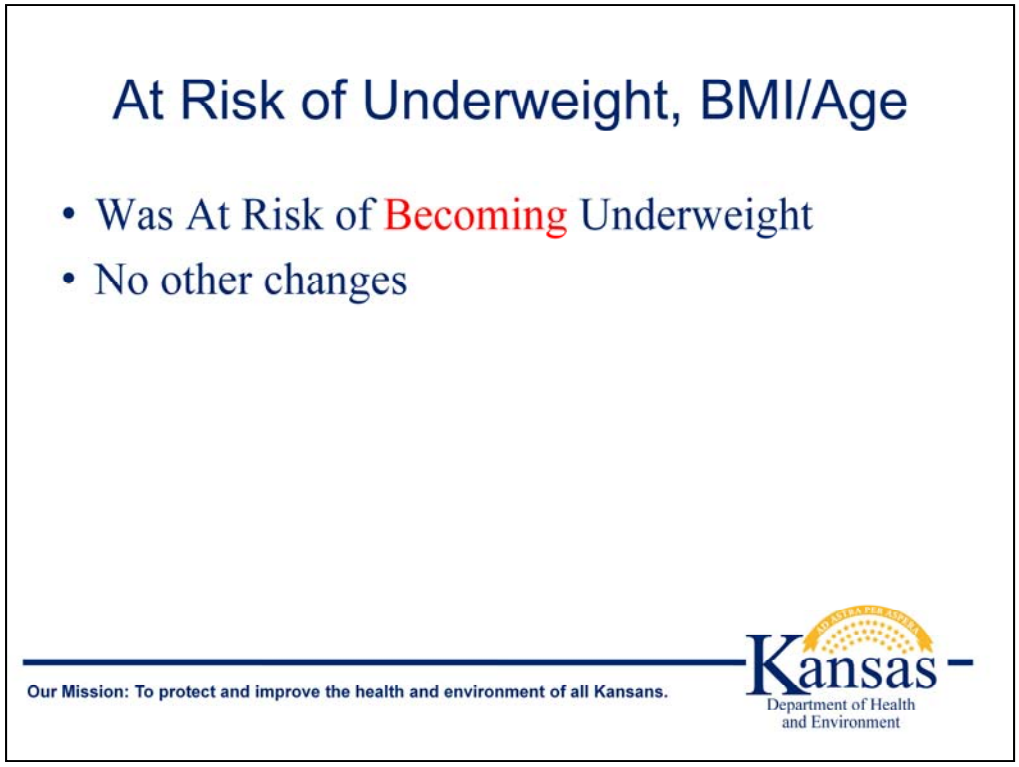
Cut off is now set at 2.3 using the WHO growth charts (remember back to the slide about the charts being based on a healthier population)

Underweight, BMI/Age

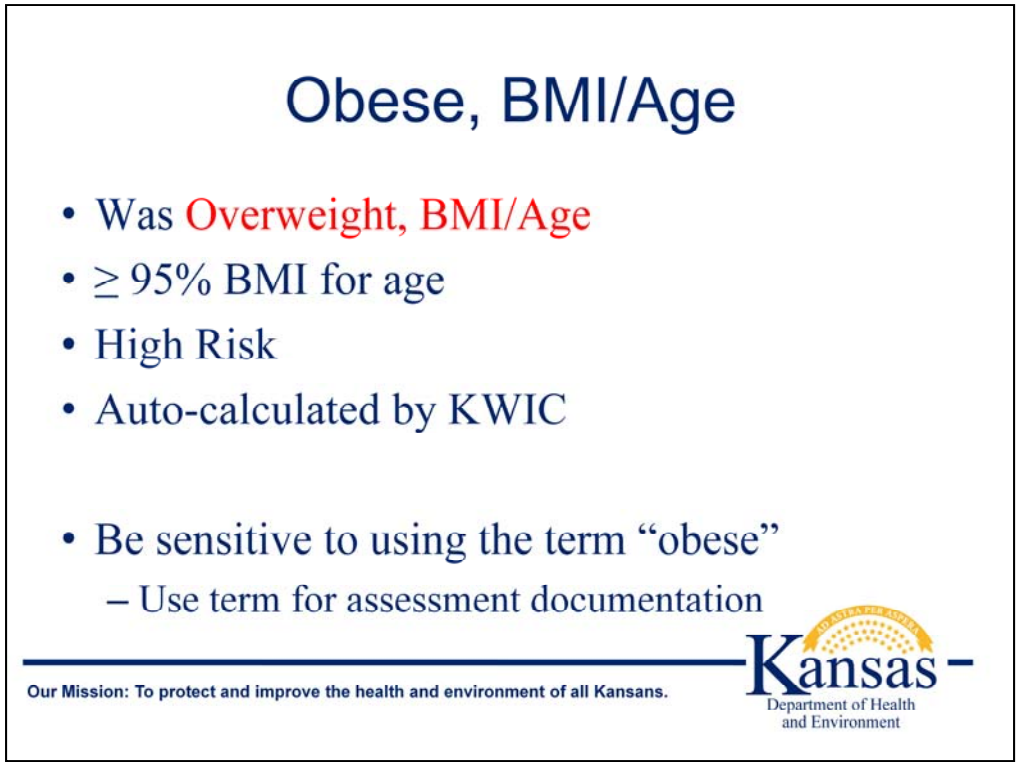
- No changes



The word”becoming” has been removed for the risk to match current terminology, however the name of the risk in KWIC will continue to include “becoming” for about a month longer.

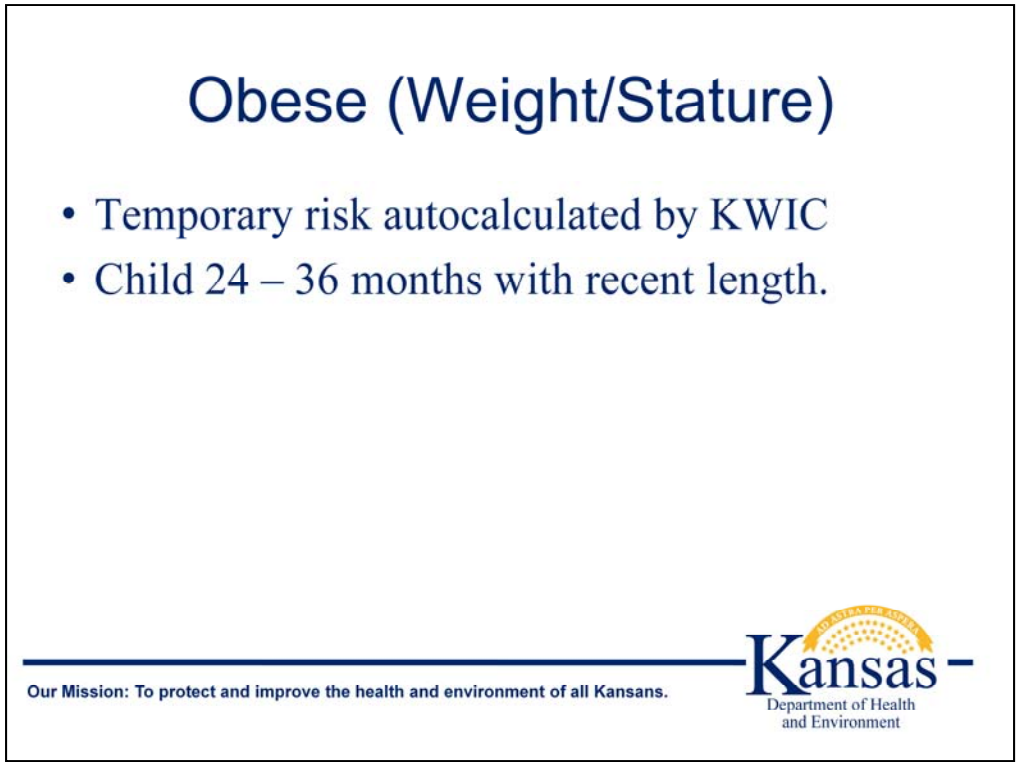


Same name change (and issues)



Now for the fun stuff
What was Overweight is now called Obese but with the same cut off

Since the word Obese is really offensive to some, be sensitive when talking with caregivers and calling the children "obese"



Just in case a clinic has entered length in the current version of KWIC and certifies the child in the new version, this risk factor will be assigned.

Should be a very rare occurrence, especially if clinics have followed guidance to not measure lengths to help with this transition.

This was needed because…

It has been replaced with

High Weight for Length

- New Risk Factor
- Infants and Children less than 24 months
- ≥ 97.7% weight-for-length
- High Risk
- Auto-calculated by KWIC

Overweight

- Was At Risk of Becoming Overweight
- ≥ 85% and < 95% BMI/Age
- Auto-calculated by KWIC

Short Stature, recumbent length

- Infants and Children less than 24 months
- ≤ 2.3% length-for-age
- Age adjusted for prematurity
- Auto-calculated by KWIC

Short Stature, standing height

- No changes

At Risk of Short Stature, recumbent length

- Infants and Children less than 24 months
- > 2.3% and ≤ 5 length-for-age
- Age adjusted for prematurity
- Auto-calculated by KWIC

At Risk of Short Stature, standing height

- No changes

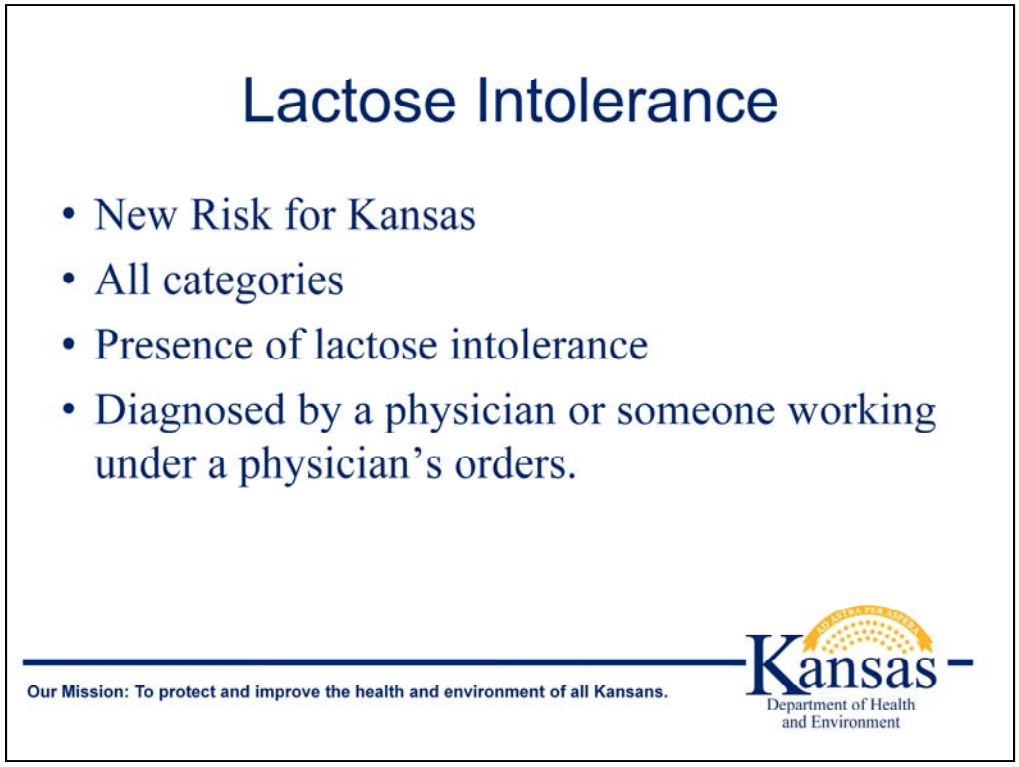
Periodically Kansas reviews allowed risk criteria that we do not use and asks the WIC Advisory Committee (WAC) to provide guidance on whether we should start using the risks. This was recommended for use.

Definition is based on birth weight, and may potentially be auto-calculated but this will not be considered until after we finish the .NET project and roll out.

Another risk that WAC recommended that Kansas start using. It might allow serving some participants at a higher priority.

Documentation in KWIC should include what food(s) the client is allergic to.

Care should be taken to differentiate food allergies from intolerances. Food intolerances are different from food allergies based on the mechanism of the reactions. Unlike food allergies, food intolerances do not involve the immune system. Food intolerances are adverse reactions to food caused either by the properties of the food itself, such as a toxin, or the characteristics of the individual, such as a metabolic disorder. Food intolerances are often misdiagnosed as food allergies because the symptoms are often similar. Causes of food intolerances may include food poisoning, histamine toxicity, food additives such as monosodium glutamate (MSG), or sulfites. The most common food intolerance is lactose intolerance.



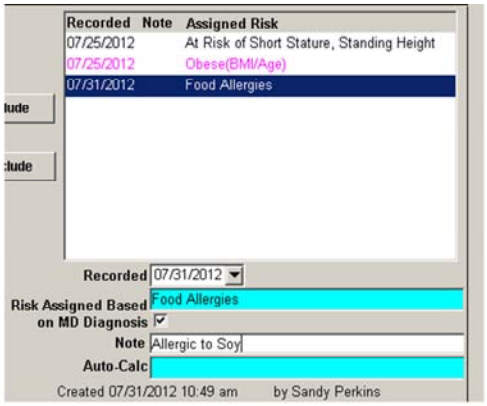
Which happens to be another risk that WAC recommended we start using.

Lactose intolerance occurs because of a deficiency in the levels of the lactase enzyme. Many variables determine whether a person with lactase deficiency develops symptoms. They include: the dose of lactose ingested; the residual intestinal lactase activity; the ingestion of food along with lactose; the ability of the colonic flora to ferment lactose; and, the individual sensitivity to the products of lactose fermentation. Some forms of lactase deficiencies may be temporary, resulting from premature birth or small bowel injuries, and will correct themselves, leaving individuals with the ability to digest lactose sufficiently.

These risks are included in the group that require the condition be diagnosed by a physician…

Documentation

- Diagnosed by a physician.
- Mark Risk Assigned Based on MD Diagnosis check box for each risk factor.



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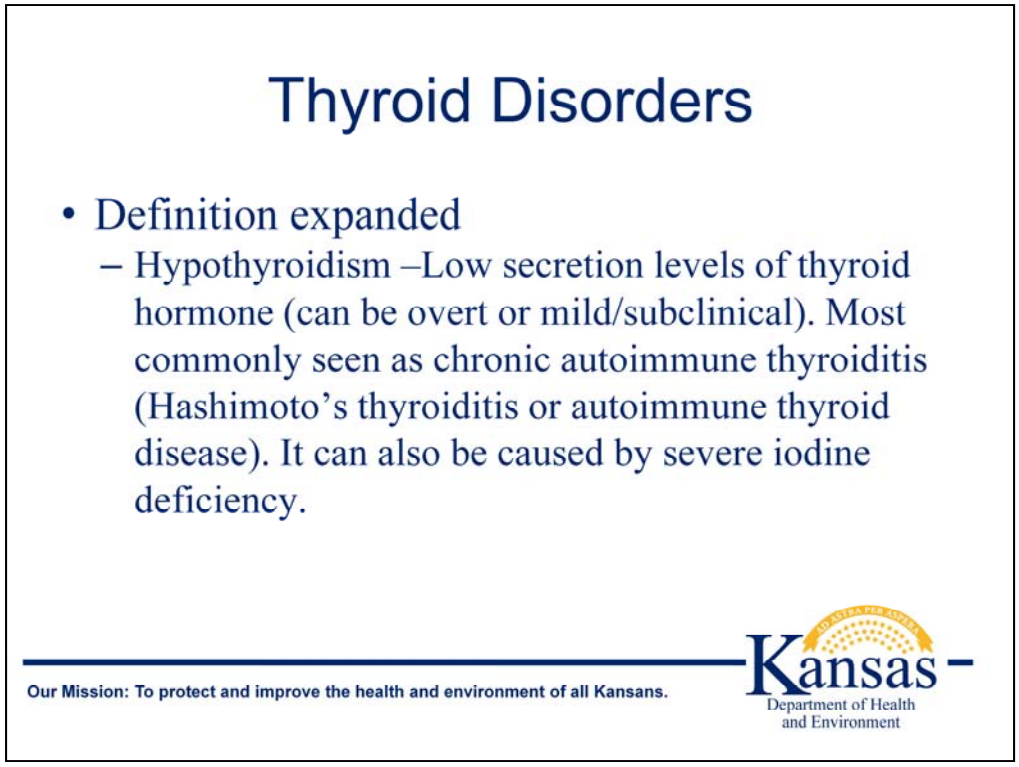
For certain risk factors the definition requires the condition be diagnosed by a physician as self-reported by caregiver; or as reported or documented by a physician, or someone working under physician's orders.

Just a reminder, self-reporting of a diagnosis by a medical professional should not be confused with self diagnosis, where a person simply claims to have or to have had a medical condition without any reference to professional diagnosis.

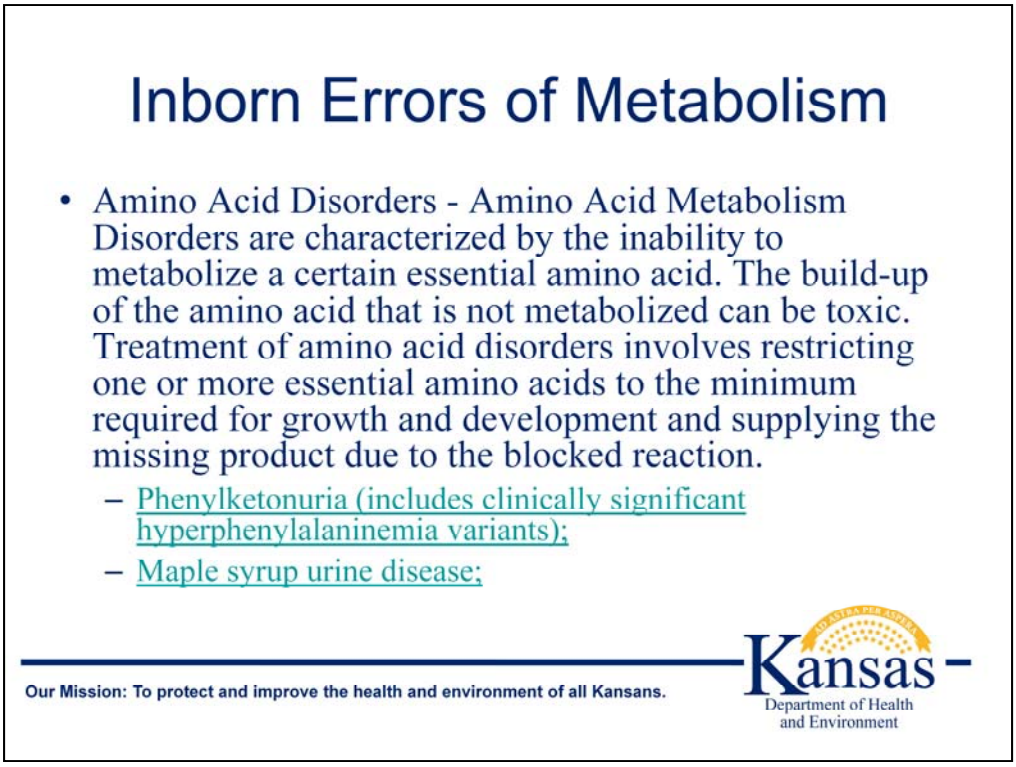
This should be documented by marking the [Risk Assigned Based on MD Diagnosis] check box on the Assign Risk Factors Window in KWIC.



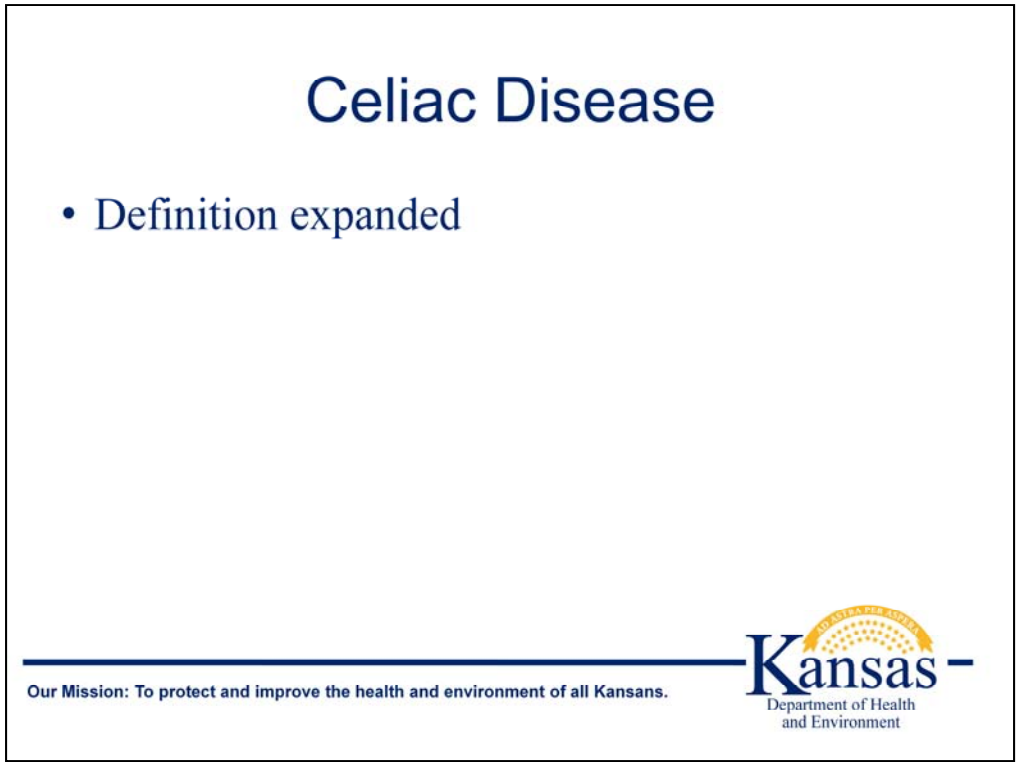
The federal definition for Thyroid disorders has been greatly expanded, or rather more details about the condition provided. The slide just shows an example of the added details, see the Risk Factor Manuals to see the complete definition.

Inborn Errors of Metabolism

- Definition expanded
- Risk factor manual now contains links to websites providing more information on condition.

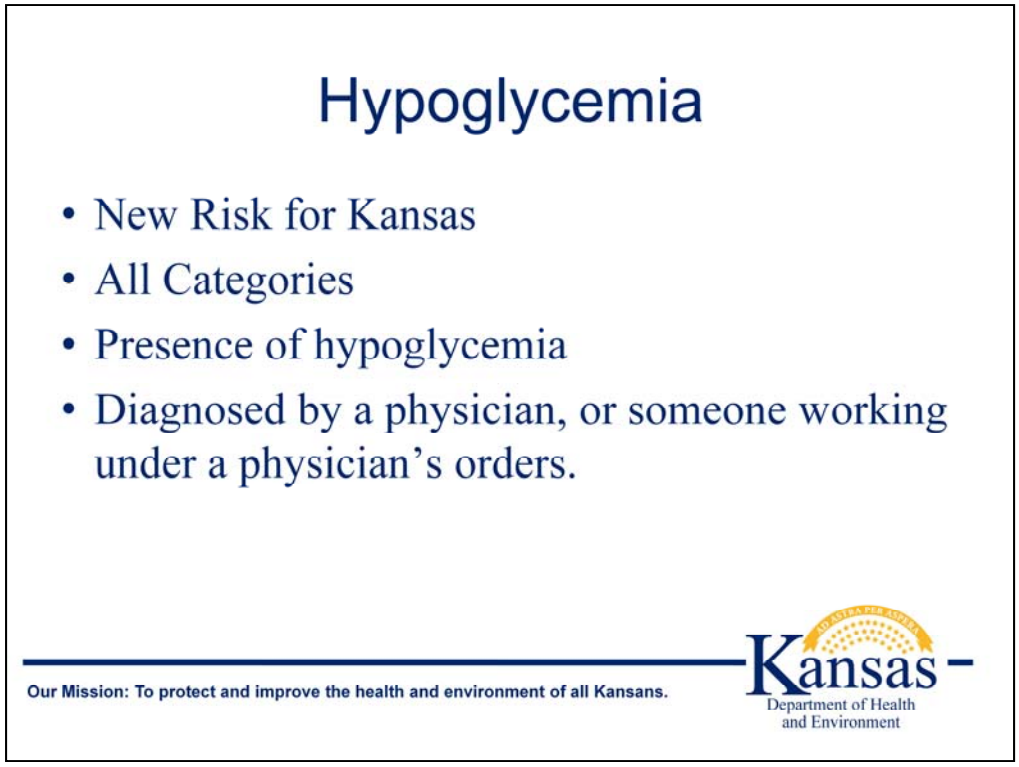


The Risk Factor Manuals contain many more links. The definition is now about 3 pages long.



CD affects approximately 1% of the U.S. population. CD can occur at any age and the treatment requires strict adherence to a gluten-free diet for life. CD is both a disease of malabsorption and an abnormal immune reaction to gluten. When individuals with CD eat foods or ingest products containing gluten, their immune system responds by damaging or destroying villi—the tiny, fingerlike protrusions lining the small intestine. Villi normally allow nutrients from food to be absorbed through the walls of the small intestine into the bloodstream. The destruction of villi can result in malabsorption of nutrients needed for good health. Key nutrients often affected are iron, calcium and folate as they are absorbed in the first part of the small intestine. If damage occurs further down the small intestinal tract, malabsorption of carbohydrates (especially lactose), fat and fat-soluble vitamins, protein and other nutrients may also occur.

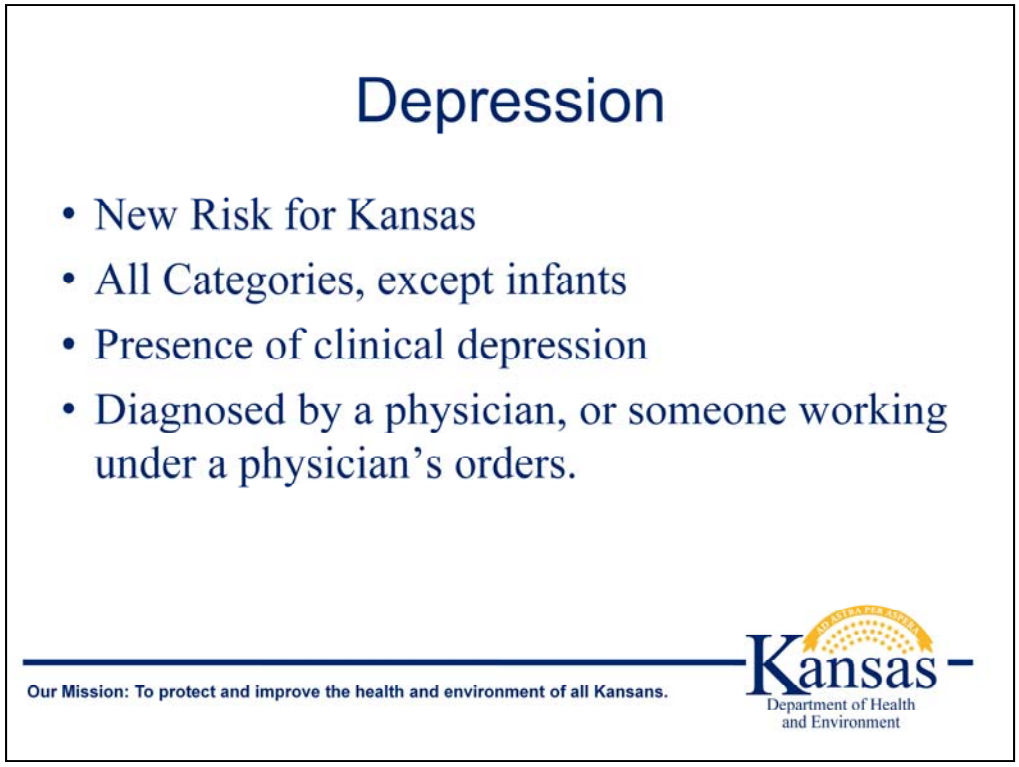
The only treatment for CD is a gluten-free diet. Individuals with CD should discuss gluten-free food choices with a dietitian or physician that specializes in CD. Individuals with CD should always read food ingredient lists carefully to make sure that the food does not contain gluten. Making informed decisions in the grocery stores and when eating out is essential for the successful treatment of the disease.



WAC also recommended adding a risk for Hypoglycemia

Hypoglycemia can occur as a complication of diabetes, as a condition in itself, in association with other disorders, or under certain conditions such as early pregnancy, prolonged fasting, or long periods of strenuous exercise.

WIC can provide nutrition management that concentrates on frequent feedings to support adequate growth for infants and children. WIC can also provide nutrition education to help manage hypoglycemia in women that includes consuming a balanced diet, low carbohydrate snacks and exercise .



One more from WAC recommendations

Appetite changes are a distinguishing feature of depression. Severe depression is often associated with anorexia, bulimia, and weight loss. Maternal depressive symptoms are associated with pre-term birth among low-income urban African-American women. Depressed pregnant women are more likely to smoke during pregnancy, attend prenatal care less frequently, have a higher incidence of low birth weight infants, and experience higher perinatal mortality rates. WIC can provide much needed nutrition education and counseling that encourages clinically depressed women to continue healthy eating habits as well as referrals to other health care and social service programs that may be of more direct assistance to the clinically depressed WIC participant.

Implications for WIC Nutrition Services

As indicated in the 2002 IOM report, most Americans (including most WIC participants) fail to adhere to the *Dietary Guidelines. Through participant-centered counseling, WIC staff can:*

• Guide the participant in choosing healthy foods and age-appropriate physical activities as recommended in the *Dietary Guidelines.*

• Reinforce positive lifestyle behaviors that lead to positive health outcomes.

• Discuss nutrition-related topics of interest to the participant such as food shopping, meal preparation, feeding relationships, and family meals.

• Refer participants, as appropriate, to the Supplemental Nutrition Assistance Program (SNAP), community food banks and other available nutrition assistance programs.

This completes the training for the WHO Growth Charts and risk factors changes for 2012. Print the certificate from the CDC training, "Using the WHO growth charts to assess growth in the United States among children ages birth to 2 years" , write your name on it and file it in the training folder in your clinic.

Questions

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