HCPro, Inc., presents

The Pediatric Medical Record: Opportunities for Documentation Improvement

A 90-minute interactive audio conference

Thursday, February 7, 2013

1:00 p.m.–2:30 p.m. (Eastern)
12:00 p.m.–1:30 p.m. (Central)
11:00 a.m.–12:30 p.m. (Mountain)
10:00 a.m.–11:30 a.m. (Pacific)
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HCPro, Inc.
75 Sylvan Street, Suite A-101
Danvers, MA 01923
Phone: 800/650-6787
Fax: 781/639-0179
Email: customerservice@hcpro.com
Website: www.hcpro.com
Dear Program Participant,

Thank you for participating in our “The Pediatric Medical Record: Opportunities for Documentation Improvement” audio conference, featuring speakers Robert S. Gold, MD, and Valerie Bica, BSN, RN, CPN, and moderated by Melissa Varnavas.

Our team is excited about the opportunity to interact with you directly. We encourage you to ask our experts your questions during the program. If you would like to submit a question before the audio conference, please send it to the producer, Nichole Ferree, at nferree@hcpro.com and provide the program date in the subject line. We cannot guarantee that your question will be answered during the program, but we will do our best to include a good cross section of questions.

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Sincerely,

Leokadia Marchwinski
Director of Multimedia Production
HCPro, Inc.
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Please note: Continuing education credits are available for this program. For instructions on how to claim your credits, please visit the materials download page at www.hcpro.com/downloads/11010.
Agenda

I. Pediatric universe of clinical care and reimbursement
   A. Coding and reimbursement
   B. Private vs. government payers
   C. Patient safety measures and quality indicators

II. Case studies
   A. Malnutrition
   B. Acute kidney injury
   C. Sepsis
   D. Respiratory failure
   E. Heart failure
   F. Congenital abnormalities
   G. Asthma

III. Implementation and support of pediatric CDI efforts
   A. Pediatric physician report cards
   B. Tracking metrics

IV. Live Q&A
Speaker Profiles

Robert S. Gold, MD

Robert S. Gold, MD, is founder and CEO of DCBA, Inc., in Atlanta, a nationally recognized provider of physician-to-physician directed clinical documentation improvement programs. He has more than 45 years of experience as a physician, medical director, and consultant. Dr. Gold writes “Clinically Speaking” for Briefings on Coding Compliance Strategies and “Minute for the Medical Staff” for Medical Records Briefing, and is the author of the training handbook Documentation Strategies to Support Severity of Illness: Ensure an Accurate Professional Profile, all from HCPro.

Valerie Bica, BSN, RN, CPN

Valerie Bica, BSN, RN, CPN, is a clinical documentation specialist at the Nemours/A.I. duPont Hospital for Children in Wilmington, Del. Bica has 35 years of pediatric/neonatal ICU (NICU) nursing experience, 10 of them at A.I. duPont. Her responsibilities have included case management, care management, managed Medicaid, acute care pediatrics, pediatric ICU, NICU, and high-tech pediatric homecare. She has helped to establish the clinical documentation integrity program at A.I. duPont, a 200-bed freestanding pediatric facility. Bica conducts concurrent clinical reviews of inpatients, education sessions for new attending physicians, and monthly education for residents; she also acts as lead for the pediatric/NICU documentation specialist group’s monthly phone meetings and attends bedside rounds with treatment teams.
Exhibit A

Presentation by Robert S. Gold, MD, and Valerie Bica, BSN, RN, CPN
The Pediatric Medical Record: Opportunities for Documentation Improvement

An HCPro audio conference presented on
February 7, 2013

Speakers

- Robert S. Gold, MD
  CEO
  DCBA, Inc
  Atlanta, GA

- Valerie Bica, BSN, RN, CPN, Pediatric Clinical Documentation Improvement Specialist
  Nemours/A.I. duPont Hospital for Children
  Wilmington, Del.
Disclaimer

This material is designed and provided to communicate information about clinical documentation, coding, and compliance in an educational format and manner.

The authors are not providing or offering legal advice, but rather practical and useful information and tools to achieve compliant results in the area of clinical documentation, data quality, and coding.

Every reasonable effort has been taken to ensure that the educational information provided is accurate and useful. Applying best practice solutions and achieving results will vary in each hospital/facility and clinical situation.

Goals/Objectives

• Define the evolution of CDI in children's hospitals
• Discuss the needs for data streams and how they differ from Medicare-directed programs—where do we go from here?
• Present the organization and goals of a pediatric CDI service line
• Compare diseases in children with diseases in adults
• Engender interest in the data world (NCHS, AHIMA, grading organizations) in the needs of pediatric medicine
Historical Aspects

- Clinical documentation improvement initiatives arose from institution of IPPS
- Medicare reimbursement depended on identification of principal diagnosis, complications and comorbid conditions, DRGs (now MS-DRGs)
- ICD codes developed since 1983 have been significantly directed toward adult population

Quality Data Streams

- Hospitals compared to each other on
  - Medicare site medicare.gov/hospitalcompare and medicare.gov/find-a-doctor/provider-search.aspx
  - HealthGrades
  - The Delta Group
  - Premier
  - Crimson
  - The Advisory Board
- All are dependent on data from MedPAR files
Reporting Strategies

IPPS Hospitals and Value-Based Purchasing

- Gross and severity adjusted
  - Mortality rates/indices – all diagnoses
  - Length of stay rates/indices – all diagnoses
  - Complication rates/indices – all procedures
- Core measures compliance
  - Heart failure – Acute myocardial infarction
  - Pneumonia – Postop wound infections
- Patient safety indicators and hospital-acquired conditions (HACs)
- Readmissions
- Comparing Medicare population with Medicare population

Children’s Hospital

Medi-Cal and Medicaid

- OAKLAND – Medi-Cal’s reimbursement in California is among the lowest in the nation, with California ranking number 49 out of the 50 states. It doesn’t cover the cost of services provided. For example, a CEO said reimbursement to the hospital ranges from 30¢ to as low as 10¢ for each $1 of the cost of the care provided by Children’s. Medi-Cal reimbursement rates are significantly below both private insurance reimbursement rates and below Medicare rates.

  “The pediatric healthcare reimbursement system is broken and rather than being rewarded for our commitment to children, we are being financially penalized.”

- BATON ROUGE – Children’s Hospital in New Orleans could bear the brunt of budget cuts in Medicaid reimbursement to private hospitals as the state health agency grapples with ways to reduce spending this year, Department of Health and Hospitals Secretary Alan Levine said Monday.
APR-DRG Payments

- Texas Medicaid uses the Medicare Severity Diagnosis-Related Group (MS-DRG) structure as the basis for calculating inpatient hospital prospective payments
- Effective September 1, 2012, Texas Medicaid will transition to the All Patient Refined Diagnosis-Related Group (APR-DRG) structure as the basis for calculating inpatient hospital prospective payments

Private Insurers

As Children’s Hospital and Insurer Negotiate, Families Scramble for Their Kids’ Care

April 27, 2012 | By WILLIAM WEIR, bweir@courant.com, The Hartford Courant

Donald Neville of West Hartford has spent the past few weeks trying to ensure that a contract dispute won’t keep his 6-year-old son, who has epilepsy and autism, from getting the care that he needs at Connecticut Children’s Medical Center.

“I sent what I was a thought was a pretty long letter [to CCMC] going through his medical history,” Neville said. He received a letter back that told him he had one more visit that would be paid for at the standard coverage rates that he has had through Anthem Blue Cross and Blue Shield. So he called Anthem. A representative told him he would have 30 days of “transitional care.”
Change

**Boston Globe**: Children’s, Blue Cross Deal Curbs Payments

Children’s Hospital Boston has agreed to a three-year contract with Blue Cross Blue Shield of Massachusetts that will not pay Children’s any more money this year, offering fresh evidence that the clamor to contain health costs is having an effect. In the second and third years of the pact, the hospital will be reimbursed by Blue Cross Blue Shield at a rate neither party would specify, but both said it was below the current 3 percent rate of medical inflation. Perhaps most important, Children’s and its doctors groups will accept global payments for the first time, meaning they will be given a budget for patients’ care rather than billing for each visit and procedure.

CMI vs. APR-CMI

- MS-DRGs
- 751 DRGs
- Divided into permutations depending on presence of MCC, CC
- Based on utilization criteria
- Each has a relative weight derived from utilization statistics
- No computation of risk of mortality

- APR-DRGs
- 314 APR-DRGs
- Each divided into four SOI versions (1256)
- Based on utilization criteria
- Each has a relative weight derived from utilization statistics
- Each of the 1256 associated with four possible risk of mortality levels
How They Look

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<td>SURG</td>
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Children’s Hospital Data Streams

- *Parents* magazine

- Statistics from CHA, Children’s Hospital Association (Union of NACHRI, National Association of Children’s Hospitals and Related Institutions, and CHCA, Child Health Corporation of America)
Methodology

• With advice from child health experts, we sent children’s hospitals (full members of the National Association of Children’s Hospitals and Related Institutions) a comprehensive survey developed by Parents magazine. The 250-question survey asked the hospitals about their survival rates, number of complex procedures performed, research studies, staff qualifications, safeguards to prevent medical errors, and more. The hospitals returned the survey a few months later—and Parents crunched the numbers and evaluated responses from more than 75 hospitals.

• Out of a possible 1,500 points, the scores ranged from 563 to 1,344. The range of scores among the top 10 hospitals was 1,106 to 1,344. In fact, the scores of the hospitals ranked 3 to 10 were very close, within about 50 points.

Reporting Strategies

• Mortality of acute lymphoblastic leukemia
• Nurse-patient ratio
• Reputation in the medical community
• Patient and parent satisfaction surveys
• Incidence of bloodstream infections
• Appropriate treatment and management of the asthma patient (core measure)
• No comprehensive database of severity-adjusted statistics in children’s hospitals and pediatric service lines in other hospitals available
10 Best Children’s Hospitals

#1 The Children’s Hospital of Philadelphia
#2 Children’s Hospital Boston
#3 Children’s Hospital of Wisconsin, Milwaukee
#4 Cincinnati Children’s Hospital Medical Center
#5 St. Louis Children’s Hospital
#6 Nationwide Children’s Hospital, Columbus, Ohio
#7 Texas Children’s Hospital, Houston
#8 Children’s Healthcare of Atlanta
#9 Rainbow Babies & Children’s Hospital, Cleveland
#10 Children’s Hospital Colorado, Aurora

Burgeoning Children’s Hospital Interest in PDI

- Desire for more comprehensive databases to compare and contrast best practices
- Recognition that severity-adjusted data is needed
- Value-based purchasing
- Recognition of current trends and upcoming changes in reimbursement for children’s hospitals
- We’re 25 years behind the times
## Who?

Nemours/A.I. duPont Hospital for Children  
200-bed pediatric teaching hospital

- 22 pediatric ICU beds
- 18 neonatal ICU beds
- 10 cardiac ICU beds
- 10 blood/bone marrow transplant beds
- 140 med/surg beds

## Why CDI?

- Born as a direct result of our ICD-10 initiative
- Concern for our CMI compared with other freestanding pediatric hospitals nationally
- Knowledge of our opportunities for improvement in quality of documentation
Our CDI Plan

- Focus is on quality, not financial; however, ultimate goal is to improve both
- Improve documentation in electronic medical record
- Utilization of the APR-DRGs to better demonstrate SOI/ROM
- Proactively prepare our providers for ICD-10
- Professional consultants for startup education

Our CDI Plan (cont.)

- Employ 2 registered nurses as clinical documentation specialists
- Select a physician advisor to assist with education of providers/negotiation of clarifications
CDI Goals

- Identify and clarify missing/conflicting/nonspecific provider documentation
- Support accuracy in diagnoses and procedures
- APR DRG, SOI, ROM for accurate reflection of complexity of patient care provided
- Improve our APR-CMI by better reflection of diagnoses/procedures

CDI Goals (cont.)

- Improve communication between providers and all members of healthcare team
- Improve quality of documentation to meet requirements of ICD-10
- Improve documentation to reflect quality and outcome scores
Challenges: Systems

- Majority of CDI programs are used in the adult hospital to focus on Medicare regulations and reimbursement
- Traditional use of MS-DRG and AP-DRG relate types of patients to resources consumed but do not reflect severity of illness and risk of mortality
- Neither MS or AP are severity adjusted and do not provide incentive to care for higher-need patients

Challenges: Providers

- Very few children are in the Medicare system
- Pediatric providers accustomed to documenting in symptoms and differential diagnoses, hesitant to add the label of a diagnosis
- Documenting in diagnoses required education and culture change
- Many providers had the misconception that this was only related to revenue
CDI Metrics

- APR case-mix index
- Severity of illness statistics
- Risk of mortality statistics
- Number of clarifications
- Physician response to clarifications
- Reasons for clarifications

Needs of PDI

- Development of team approach
  - Physicians and midlevels
  - CDI specialists
  - Coding professionals
  - Integration with quality, case management, UR, PSIs, EHR processes
- Education of team in needs of ICD (9, 10, 11, SnoMed)
- Recognition that ICD needs help in children’s diseases—ineffective classification
What You Don’t Need

- Experts in geriatric medicine directing your education for neonates and pediatric diseases and operative procedures
- Don’t have someone teach you to go for conditions that may mean nothing until you know they mean something (oliguria is a meaningless symptom in most kids—often significant in the adult; acute respiratory distress is inherent in asthma, croup, bronchiolitis—ARDS is different)

They Don’t Jive

<table>
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<tr>
<th>ADULTS</th>
<th>PEDS</th>
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<tr>
<td>Myocardial infarction—CAD</td>
<td>Myocardial infarction—Kawasaki disease</td>
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<tr>
<td>Septic shock—drop in blood pressure requiring volume and pressors</td>
<td>Septic shock—decreased perfusion of organs requiring volume and pressors</td>
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<tr>
<td>Respiratory distress</td>
<td>RDS or ARDS or TTN or ...</td>
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29

30
Polling Question #1

The most frequent hospital concern for pediatric type 1 diabetics is related to:

1. Autonomic neuropathy
2. Nephropathy
3. Osteomyelitis
4. Ketoacidosis

Pediatric Respiratory Failure

• Tube not necessary ...
• Symptoms to make you think:
  – Tachypnea early sign
  – Retractions
  – Belly breathing
  – Grunting
  – Head bobbing
• Rarely do ABG outside of PICU
Pediatric Respiratory Failure

- Look for low $O_2$ saturations
- Watch for progression from *nasal cannula* to
  - *High-flow nasal cannula* (Vapotherm) to *BiPAP* along with increased settings
- Be aware of the *chronically ill kids*—“frequent fliers”
- When they come for surgery—there is an expectation that they will have respiratory failure after surgery (POA?)

Even the Labs and Vital Signs Can Be Different

- Adult criteria are found as standards in lab reports at general hospitals
- Many data differences are based on age in pediatrics
  - Neonate (not coding definition of neonate)
  - First weeks
  - Up to age 5, over age 5
- See criteria for AKI, vital sign criteria for identification of SIRS, malnutrition methodologies
DM in a 10-Year-Old

- Are you going to automatically ask if it’s Type 1 or Type 2 diabetes?
- You need clues. If the patient has cystic fibrosis, chances are it’s diabetes secondary to cystic fibrosis and falls into the 249 code series. Look for other documented diseases. Leprechaunism, mongolism, pituitary tumors, or adrenal tumors can cause secondary diabetes. Is the child very obese? Are we dealing with Prader-Willi syndrome or another genetic abnormality?
- Or is this an obese child due to overeating and familial problems, representing acquired Type 2 diabetes in a 10-year-old?

Polling Question Answer

The most frequent hospital concern for pediatric type 1 diabetics is related to:

1. Autonomic neuropathy
2. Nephropathy
3. Osteomyelitis
4. Ketoacidosis
Not the Same as the Adult

- Neuropathy—and which? Charcot foot? Neuropathic ulcer? Gastroparesis?
- Nephropathy—and what CKD stage? Or ESRD?
- Retinopathy—proliferative or non?
- Microvascular disease—part of body involved
- Dermopathy
- Gingivopathy
- Uncontrolled—for sure!!

Codes for Necrotizing Enterocolitis Are Good

777.50  Necrotizing enterocolitis in newborn, unspecified
777.51  Stage I necrotizing enterocolitis in newborn
777.52  Stage II necrotizing enterocolitis in newborn
777.53  Stage III necrotizing enterocolitis in newborn
Bell Staging of NEC

**Stage I:** Suspected NEC—vague signs such as fever, lethargy, bradycardia, apnea, poor feeding, vomiting, x-ray finding of ileus.

**Stage II:** Definite NEC—all of the above plus abdominal distension and GI bleeding, x-ray showing edema of the intestinal wall, air in the wall, air in the portal vein.

**Stage III:** All of the above plus vital sign instability, septic shock, severe GI bleeding, x-rays as in II, and free air in the abdomen. Remember 995.92!

ICD-9 May Be a Miss for Kids

- Codes were developed for the care of adult patients, inadequate for some pediatric care
- Developmental delays—in kids when a physician states “profound global developmental delays,” this is a very clear picture to any pediatric clinician. This diagnosis has a significant impact on utilization of resources, length of stay, and severity of illness. The codes available to describe this diagnosis are limited and inadequate.
NICU Review

- NICU codes give false sense of security for representing SOI/ROM
- RDS usually present in neonates < 30 wks gestation, may say “surfactant deficiency”
- Acute respiratory failure—prolonged ventilation, failed treatment with surfactant and unable to extubate, or full-term infant

NICU Review

- Look carefully at the prenatal/maternal history for clues of diagnoses that may be present in neonate; gestational diabetes, HELLP syndrome, abnormal ultrasound reports, chorioamnionitis, failure to progress, apgar scores, meconium aspirated from below the vocal cords
- Head/body cooling or ECMO required
NICU Case Study

Case study: 530 gms to a 25 yo G1P0 mom at 23 weeks. Mom is O pos, Ab neg, RI, HepB neg, NR, HIV neg, HSV neg, and GBS unknown. Mom presented in active labor, fully dilated with bulging membranes. A stat C/S was performed and the parents requested a full resuscitation. APGARS were 1/2/3 at 1/5/10 mins respectively. The baby was intubated in the DR, received one dose of epinephrine via the ETT, Curosurf® x 1.

Case Study (cont.)

- He received chest compressions intermittently for 10 mins.
- In the NICU he was placed on CMV, umbilical lines were placed, he was started on 100 ml/kg/d IVFs, and was started on Ampicillin and Gentamicin after a blood culture was obtained.
Case Study (cont.)

- On DOL #2, he required the HFOV on 54% FiO₂ and an ECHO was significant for a PDA. He received one dose of Indocin®. His platelets fell to 50k and further doses of Indocin® were held. Over the next two days, he required increased ventilatory support with difficulty ventilating and oxygenating.

Case Study (cont.)

Diagnoses: adm dx acute respiratory failure
Coded: pdx resp failure newborn
Septicemia newborn
Grade IV IVH
DIC
Severe sepsis
Septic shock
Acute/subacute necrosis liver
Intracerebral hemorrhage
Transient neonatal thrombocytopenia
Case Study (cont.)

- Many, many more diagnoses, including acute renal failure that led to anuria
- APR-DRG 589 neonate < 500gm/gest age < 24 wks
- SOI/ROM 3/3
- Coding does not reflect that this infant was among the sickest of the sick
- Infant expired at 1 mo of age
- NICU codes/DRG—accurate reflection??

Polling Question #2

TRUE OR FALSE: All pediatric heart failure patients should be identified as acute or chronic (or both) and then as systolic failure, diastolic failure or combined systolic and diastolic failure

1. True
2. False
Anemia

- “Is it acute blood loss anemia?” BAH!!!!
- SO many pieces of evidence to look through before you jump to conclusions.
- A fall and a head laceration can have significant blood loss. A traumatic rupture of the spleen can do it, too—but kids may have spontaneous splenic rupture more frequently than adults.
- Angiodysplasias of the intestinal tract, Meckel’s diverticulum, Boorhave, Mallory Weiss, ingestion of pills, congenital causes of portal hypertension.
- There are a huge number of nutritional and genetic causes of anemia, and they can have some very abnormal looking red cells. So it behooves one to get familiar with pediatric causes of anemia and what the red cells might look like in face of some of these causes.
- Don’t frame a question regarding causes of anemia with six million potential causes, but you aren’t likely to get the total answer you want by just asking “What’s the cause of the child’s anemia?” You might, if it’s totally a genetic issue (sickle cell anemia, thalassemia minor, etc.). But a lot of kids are not so simple.

Know Your Red Cells

- Normocytic normochromic
  - Normal, acute blood loss or CKD
- Microcytic hypochromic
  - Iron deficiency, hemolytic, chronic bleed
- Macrocytic
  - Deficiencies B12, folic acid
- Schistocytes
  - DIC
- Many other forms
Heart Failure Adults

- No specific code for right or biventricular heart failure
- 428 codes expanded 2004 to include (congestive) heart failure due to LV dysfunction
  - (428.1) Acute pulmonary edema (L heart failure)
  - 428.2x Systolic LV failure
  - 428.3x Diastolic LV failure
  - 428.4x Systolic and diastolic failure

Polling Question Answer

TRUE OR FALSE: All pediatric heart failure patients should be identified as acute or chronic (or both) and then as systolic failure, diastolic failure or combined systolic and diastolic failure

1. True
2. False
Based On ...
Practice Guidelines for Heart Failure

ACC/AHA HEART FAILURE CLINICAL DATA STANDARDS
ACC/AHA Guidelines for the Evaluation and Management of Chronic Heart Failure in the Adult

A Report of the American College of Cardiology/American Heart Association Task Force on Practice Guidelines (Committee to Revise the 1995 Guidelines for the Evaluation and Management of Heart Failure) Endorsed by the Heart Failure Society of America

http://www.americanheart.org/downloadable/heart/1013201138293HFGuidelineFinal.pdf

Neonatal Heart Failure

- Congestive heart failure in the fetus, or hydrops, can be seen on fetal echocardiography
- May represent underlying
  - Anemia (e.g., Rh sensitization, fetal-maternal transfusion)
  - Arrhythmias (usually supraventricular tachycardia)
  - Myocardial dysfunction (myocarditis or cardiomyopathy)
- Structural heart disease is rarely a cause of congestive heart failure in the fetus
- Atrioventricular valve regurgitation in the fetus is a particularly troubling sign with respect to the prognosis
- Twin-twin transfusion in recipient with pressure overload
The Overcirculation Model

- Left-to-right shunts initially markedly increase pulmonary blood flow. Overcirculation of this vasculature may gradually make the vessels fibrotic and less elastic.
- Leads to pulmonary hypertension and eventually reverses the intracardiac shunt from the right to left.

Idiopathic Dilated Cardiomyopathy

- NOT secondary to any disease causing other dilated cardiomyopathies (ischemic, viral, alcoholic, toxic, etc.)
- Familial (autosomal dominant pattern of transmission)
- Humoral and cell mediated immune response
- No idea whatsoever—coded as primary CMP
DCM Criteria

- Patients 1 to 19 years of age with DCM and echocardiographic evidence of sustained cardiac dysfunction for at least 6 months
- DCM was defined according to the following echocardiographic parameters, which are based on normative data:
  1. LV end diastolic (ED) dimension ≥ 2 SD above the mean for body surface area (z score ≥ 2) and
  2. LV shortening fraction (SF) or ejection fraction (EF) ≤ 3 SD below the mean for age (z score ≤ −3)

Ejection Fraction Measures

- **Ejection fraction.** The left ventricle is a chamber which relaxes to fill with blood and then contracts to pump the blood out. Even in a healthy heart, the left ventricle does not pump all of the blood out with each beat. The ejection fraction is defined by the following formula:

\[ E_f = \frac{SV}{EDV} = \frac{EDV - ESV}{EDV} \]

- The ejection fraction is a useful measure of left ventricular performance. The normal range is 63–77% for males and 55–75% for females (reference: *Measurements in Cardiology*). If the left ventricle wall is thinned, a decrease in the ejection fraction is seen.
**Shortening Fraction Measures**

- **Shortening fraction.** The shortening fraction is a slightly different way of measuring left ventricle performance. Instead of measuring and ratioing blood volumes, the shortening fraction measures and ratios the change in the diameter of the left ventricle between the contracted and relaxed states.

- The normal range is 0.18–0.42, or 18–42% (reference: *Measurements in Cardiology*). According to the Oeffinger/Keene article, “... above 30% is considered normal, with 26 to 30% representing a mild decrease in function. ... A decrease in the shortening fraction usually precedes a detectable decrease in the ejection fraction.”

**Heart Failure, Congestive**

Author: Gary M. Satou, MD, FASE, Director, Pediatric Echocardiography, Mattel Children’s Hospital at University of California at Los Angeles; Associate Clinical Professor, Department of Pediatrics, David Geffen School of Medicine at University of California at Los Angeles

Coauthor: Nancy J. Halnon, MD, Assistant Professor in Residence, Division of Pediatric Cardiology (Heart Transplantation and Pediatric Cardiology), David Geffen School of Medicine and Mattel Children’s Hospital at University of California at Los Angeles

- **Systolic dysfunction**—diminished ventricular contractility leads to impaired ability to increase the stroke volume to meet systemic demands

- **Diastolic dysfunction**—diminished ventricular compliance, leading to increase in venous pressure to properly fill left ventricle
  - Anatomic obstruction as in pulmonary vein obstruction
  - Primary reduction in ventricular compliance as in stiffening of heart muscle, transplant rejection
  - External restriction as in pericardial effusion
  - Poor hemodynamics after the Fontan procedure
**Physician Participation**

- Education, education, education, and oh yes, education!
- Knowing the why improves the outcome
- Continuous follow-up with face-to-face rounding
- Asking for assistance with educating the residents
- Feedback about progress in CMI and outcomes

**Malnutrition and Morbid Obesity**

- Work closely with nutritionists
- Ours developed very conservative standards based on scales available
- Severe malnutrition seen in oncology patients with % body weight lost in a specific period of time—due to chemo effect, emotional reaction to diagnosis, oral aversion development
- Morbid obesity defined using > 99%ile (pediatric BMI), obesity > 95%ile
How We Do It

- We have found that face-to-face rounding with patient care team brings the best response
- Multi-disciplinary rounds occur daily at the bedside
- Two-fold benefit, questions asked while discussing patient, EMR on rounds, notes get entered and residents are educated to go forward with better documentation

Questions?

To ask our speakers questions today, press *1 on your telephone key pad. This will place you in our electronic queue. We will un-mute you and notify you when it is time to ask your question. When asking a question, please be sure to un-mute your speakerphone. You may also submit a question to the following email address: nferree@hcpro.com.

*This information is also listed in the instruction email where you found the dial-in information for the program.*
Thank you

Please note: Continuing education credits are available for this program.

For instructions on how to claim your credits, please visit the materials download page at http://www.hcpro.com/downloads/11010
Exhibit B

Classification of acute kidney injury in children
Classification of Acute Kidney Injury in Children

The lack of a uniform definition of AKI in adults and children has lead to the adoption of a new classification system entitled the RIFLE criteria as a standardize criteria for AKI in adults and has been adapted for pediatric patients. The pediatric RIFLE (pRIFLE) classification better reflects the course of AKI in children admitted to the intensive care unit. The new classification system aims to standardize the definition of AKI based on changes in serum creatinine from baseline, a decrease in urine output, as well as the length of renal replacement at later stages. In adults, the RIFLE criteria were shown in a multinational and multicenter study to independently predict length of stay, cost, morbidity, and mortality. However no similar pediatric studies are available. To aid in the differential diagnosis of AKI, in general terms, AKI may be classified as pre-renal, intrinsic renal, and post-renal. However many pathophysiological features are shared among the different categories.

<table>
<thead>
<tr>
<th>Estimated CCI</th>
<th>Urine Output</th>
</tr>
</thead>
<tbody>
<tr>
<td>Risk</td>
<td>eCCI decrease by 25%</td>
</tr>
<tr>
<td>Injury</td>
<td>eCCI decrease by 50%</td>
</tr>
<tr>
<td>Failure</td>
<td>eCCI decrease by 75%</td>
</tr>
<tr>
<td></td>
<td>eCCI &lt;35ml/min/1.73m2</td>
</tr>
<tr>
<td>Loss</td>
<td>Persistent failure &gt;4 weeks</td>
</tr>
<tr>
<td>End stage</td>
<td>End-stage renal disease</td>
</tr>
<tr>
<td></td>
<td>(persistent failure &gt;3 months)</td>
</tr>
</tbody>
</table>
Exhibit C

Values commonly used to grade the severity of protein-energy malnutrition
### Values Commonly Used to Grade the Severity of Protein-Energy Malnutrition

<table>
<thead>
<tr>
<th>Measurement</th>
<th>Normal</th>
<th>Mild Malnutrition</th>
<th>Moderate Malnutrition</th>
<th>Severe Malnutrition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Normal weight (%)</td>
<td>90–110</td>
<td>85–90</td>
<td>75–85</td>
<td>&lt; 75</td>
</tr>
<tr>
<td>Body mass index</td>
<td>19–24*</td>
<td>18–18.9</td>
<td>16–17.9</td>
<td>&lt; 16</td>
</tr>
<tr>
<td>Serum albumin (g/dL)</td>
<td>3.5–5.0</td>
<td>3.1–3.4</td>
<td>2.4–3.0</td>
<td>&lt; 2.4</td>
</tr>
<tr>
<td>Transthyretin (prealbumin) (mg/dL)</td>
<td>17-40</td>
<td>11-16</td>
<td>7-10</td>
<td>&lt;7</td>
</tr>
<tr>
<td>Serum transferrin (mg/dL)</td>
<td>220–400</td>
<td>201–219</td>
<td>150–200</td>
<td>&lt; 150</td>
</tr>
<tr>
<td>Total lymphocyte count (per mm3)</td>
<td>2000–3500</td>
<td>1501–1999</td>
<td>800–1500</td>
<td>&lt; 800</td>
</tr>
<tr>
<td>Delayed hypersensitivity index†</td>
<td>2</td>
<td>2</td>
<td>1</td>
<td>0</td>
</tr>
</tbody>
</table>

*In the elderly, BMI < 21 may increase mortality risk.

†Delayed hypersensitivity index quantitates the amount of induration elicited by skin testing using a common antigen, such as those derived from Candida sp or Trichophyton sp. Induration grade 0 = < 0.5 cm, 1 = 0.5–0.9 cm, 2 = ≥ 1.0 cm.

Exhibit D

Peds vital sign criteria
## Peds Vital Sign Criteria

<table>
<thead>
<tr>
<th>Age Group</th>
<th>Respiratory Rate (R)</th>
<th>Heart Rate (H)</th>
<th>Leuko Count (L)</th>
<th>Systolic BP (S)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 days - 1 wk</td>
<td>&gt;50</td>
<td>&gt;180</td>
<td>&gt;34</td>
<td>&lt;65</td>
</tr>
<tr>
<td>1 wk - 1 mo</td>
<td>&gt;40</td>
<td>&lt;100</td>
<td>&gt;19.5 or &lt;5</td>
<td>&lt;7.5</td>
</tr>
<tr>
<td>1 mo - 1 yr</td>
<td>&gt;34</td>
<td>&gt;90</td>
<td>&gt;17.4 or &lt;5</td>
<td>&lt;10.0</td>
</tr>
<tr>
<td>2 - 5 yrs</td>
<td>&gt;22</td>
<td>NA</td>
<td>&gt;15.5 or &lt;5</td>
<td>&lt;9.4</td>
</tr>
<tr>
<td>6 - 12 yrs</td>
<td>&gt;18</td>
<td>NA</td>
<td>&gt;13.5 or &lt;4.5</td>
<td>&lt;10.5</td>
</tr>
<tr>
<td>13 - &gt;18 yrs</td>
<td>&gt;14</td>
<td>NA</td>
<td>&gt;11 or &lt;4.5</td>
<td>&lt;11.0</td>
</tr>
</tbody>
</table>
Exhibit E

Definitions of malnutrition
### Definitions of malnutrition

<table>
<thead>
<tr>
<th>Classification</th>
<th>Definition</th>
<th>Grade</th>
<th>Grading</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gomez</td>
<td>Weight below % median WFA</td>
<td>Mild (grade 1)</td>
<td>75%–90% WFA</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Moderate (grade 2)</td>
<td>60%–74% WFA</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Severe (grade 3)</td>
<td>&lt;60% WFA</td>
</tr>
<tr>
<td>Waterlow</td>
<td>z-scores (SD) below median WFH</td>
<td>Mild</td>
<td>80%–90% WFH</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Moderate</td>
<td>70%–80% WFH</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Severe</td>
<td>&lt;70% WFH</td>
</tr>
<tr>
<td>WHO (wasting)</td>
<td>z-scores (SD) below median WFH</td>
<td>Moderate</td>
<td>-3% ≤ z-score &lt; -2</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Severe</td>
<td>z-score &lt; -3</td>
</tr>
</tbody>
</table>
Exhibit F

Classifications of malnutrition in children
## Classification of Malnutrition in Children

<table>
<thead>
<tr>
<th></th>
<th>Mild Malnutrition</th>
<th>Moderate Malnutrition</th>
<th>Severe Malnutrition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Percent Ideal Body Weight</td>
<td>80-90%</td>
<td>70-79%</td>
<td>&lt; 70%</td>
</tr>
<tr>
<td>Percent of Usual Body Weight</td>
<td>90-95%</td>
<td>80-89%</td>
<td>&lt; 80%</td>
</tr>
<tr>
<td>Albumin (g/dL)</td>
<td>2.8-3.4</td>
<td>2.1-2.7</td>
<td>&lt; 2.1</td>
</tr>
<tr>
<td>Transferrin (mg/dL)</td>
<td>150 - 200</td>
<td>100 - 149</td>
<td>&lt; 100</td>
</tr>
<tr>
<td>Total Lymphocyte Count (per µL)</td>
<td>1200 - 2000</td>
<td>800 - 1199</td>
<td>&lt; 800</td>
</tr>
</tbody>
</table>
Exhibit G

Subjective global assessment scoring sheet
Subjective Global Assessment Scoring Sheet

Part 1: Medical History SGA Score

1. Weight Change A B C
   A. Overall change in past 6 months: kgs.
   B. Percent change: ______ gain - < 5% loss
      ______ 5-10% loss
      ______ > 10% loss
   C. Change in past 2 weeks: ______ increase
      ______ no change
      ______ decrease

2. Dietary Intake
   A. Overall change: ______ no change
      ______ change
   B. Duration: ______ weeks
   C. Type of change:
      ______ suboptimal solid diet ______ full liquid diet
      ______ hypocaloric liquid ______ starvation

3. Gastrointestinal Symptoms (persisting for >2 weeks)
   ______ none ______ nausea ______ vomiting ______ diarrhea ______ anorexia

4. Functional Impairment (nutritionally related)
   A. Overall impairment: none
      moderate
      severe
   B. Change in past 2 weeks: improved
      no change
      regressed

Part 2: Physical Examination

SGA Score

Normal Mild Moderate Severe

5. Evidence of: Loss of subcutaneous fat
   Muscle wasting
   Edema
   Ascites (hemo only)

Part 3: SGA Rating (check one)

A. Well-Nourished B. Mildly-Moderately Malnourished C. Severely Malnourished
Exhibit H

List of useful industry acronyms

Source: HCPro, Inc.
### HIM Acronyms to Know

<table>
<thead>
<tr>
<th>Acronym</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>AAPC</td>
<td>American Academy of Professional Coders</td>
</tr>
<tr>
<td>ABN</td>
<td>Advance beneficiary notice</td>
</tr>
<tr>
<td>ACDIS</td>
<td>Association of Clinical Documentation Improvement Specialists</td>
</tr>
<tr>
<td>ADR</td>
<td>Additional documentation request</td>
</tr>
<tr>
<td>AHA</td>
<td>American Hospital Association</td>
</tr>
<tr>
<td>AHIMA</td>
<td>American Health Information Management Association</td>
</tr>
<tr>
<td>AHRQ</td>
<td>Agency for Healthcare Research and Quality</td>
</tr>
<tr>
<td>AMI</td>
<td>Acute myocardial infarction</td>
</tr>
<tr>
<td>AOA</td>
<td>American Osteopathic Association</td>
</tr>
<tr>
<td>APCs</td>
<td>Ambulatory payment classifications</td>
</tr>
<tr>
<td>ARRA</td>
<td>American Recovery and Reinvestment Act of 2009</td>
</tr>
<tr>
<td>ASC</td>
<td>Ambulatory surgery center</td>
</tr>
<tr>
<td>ASP</td>
<td>Average sales price</td>
</tr>
<tr>
<td>AWP</td>
<td>Average wholesale price</td>
</tr>
<tr>
<td>CAH</td>
<td>Critical access hospital</td>
</tr>
<tr>
<td>CC</td>
<td>Complication and comorbidity</td>
</tr>
<tr>
<td>CCHIT</td>
<td>Certification Commission for Health Information Technology</td>
</tr>
<tr>
<td>CCR</td>
<td>Continuity of care record/Cost-to-charge ratio</td>
</tr>
<tr>
<td>CDI</td>
<td>Clinical documentation improvement</td>
</tr>
<tr>
<td>CDM</td>
<td>Charge description master</td>
</tr>
<tr>
<td>CERT</td>
<td>Comprehensive Error Rate Testing</td>
</tr>
<tr>
<td>CPI</td>
<td>Consumer price index</td>
</tr>
<tr>
<td>CMI</td>
<td>Case-mix index</td>
</tr>
<tr>
<td>CMS</td>
<td>Centers for Medicare &amp; Medicaid Services</td>
</tr>
<tr>
<td>CMSA</td>
<td>Consolidated Metropolitan Statistical Area</td>
</tr>
<tr>
<td>CPI</td>
<td>Consumer price index</td>
</tr>
<tr>
<td>CPT</td>
<td>Current procedural terminology</td>
</tr>
<tr>
<td>CRNA</td>
<td>Certified registered nurse anesthetist</td>
</tr>
<tr>
<td>CT</td>
<td>Computed tomography</td>
</tr>
<tr>
<td>CY</td>
<td>Calendar year</td>
</tr>
<tr>
<td>DED</td>
<td>Dedicated emergency department</td>
</tr>
<tr>
<td>DRG</td>
<td>Diagnosis-related group</td>
</tr>
<tr>
<td>DSH</td>
<td>Disproportionate share hospital</td>
</tr>
<tr>
<td>ED</td>
<td>Emergency department</td>
</tr>
<tr>
<td>EDMS</td>
<td>Electronic Document Management System</td>
</tr>
<tr>
<td>EHR</td>
<td>Electronic health records</td>
</tr>
<tr>
<td>E/M</td>
<td>Evaluation and management</td>
</tr>
<tr>
<td>EMR</td>
<td>Electronic medical records</td>
</tr>
<tr>
<td>EOB</td>
<td>Explanation of benefits</td>
</tr>
<tr>
<td>ePHI</td>
<td>Electronic protected health information</td>
</tr>
</tbody>
</table>
## HIM Acronyms to Know

<table>
<thead>
<tr>
<th>Acronym</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>FDA</td>
<td>U.S. Food and Drug Administration</td>
</tr>
<tr>
<td>FFY</td>
<td>Federal fiscal year</td>
</tr>
<tr>
<td>FI</td>
<td>Fiscal intermediary</td>
</tr>
<tr>
<td>FY</td>
<td>Fiscal year</td>
</tr>
<tr>
<td>GAF</td>
<td>Geographic adjustment factor</td>
</tr>
<tr>
<td>GME</td>
<td>Graduate medical education</td>
</tr>
<tr>
<td>H&amp;P</td>
<td>History and physical</td>
</tr>
<tr>
<td>HAC</td>
<td>Hospital-acquired condition</td>
</tr>
<tr>
<td>HCCA</td>
<td>Health Care Compliance Association</td>
</tr>
<tr>
<td>HCFA</td>
<td>Health Care Financing Administration</td>
</tr>
<tr>
<td>HCPCS</td>
<td>Healthcare Common Procedure Coding System</td>
</tr>
<tr>
<td>HCRIS</td>
<td>Hospital Cost Report Information System</td>
</tr>
<tr>
<td>HHA</td>
<td>Home health agency</td>
</tr>
<tr>
<td>HHS</td>
<td>U.S. Department of Health and Human Services</td>
</tr>
<tr>
<td>HIC</td>
<td>Health insurance card</td>
</tr>
<tr>
<td>HIMSS</td>
<td>Healthcare Information and Management Systems Society</td>
</tr>
<tr>
<td>HINN</td>
<td>Hospital-Issued Notice of Non-Coverage</td>
</tr>
<tr>
<td>HIPAA</td>
<td>Health Insurance Portability and Accountability Act of 1996</td>
</tr>
<tr>
<td>HIS</td>
<td>Health information system/services</td>
</tr>
<tr>
<td>HIT</td>
<td>Healthcare information technology</td>
</tr>
<tr>
<td>HITECH Act</td>
<td>Health Information Technology for Economic and Clinical Health Act</td>
</tr>
<tr>
<td>HMO</td>
<td>Health maintenance organization</td>
</tr>
<tr>
<td>HSA</td>
<td>Health savings account</td>
</tr>
<tr>
<td>HSRVcc</td>
<td>Hospital-specific relative value cost center</td>
</tr>
<tr>
<td>HQA</td>
<td>Hospital Quality Alliance</td>
</tr>
<tr>
<td>HQI</td>
<td>Hospital quality initiative</td>
</tr>
<tr>
<td>ICD-9-CM</td>
<td>International Classification of Diseases, 9th Revision, Clinical Modifications</td>
</tr>
<tr>
<td>ICD-10-PCS</td>
<td>International Classification of Diseases, 10th Revision, Procedure Coding System</td>
</tr>
<tr>
<td>ICU</td>
<td>Intensive care unit</td>
</tr>
<tr>
<td>IHS</td>
<td>Indian Health Service</td>
</tr>
<tr>
<td>IOM</td>
<td>Institute of Medicine</td>
</tr>
<tr>
<td>IPF</td>
<td>Inpatient psychiatric facility</td>
</tr>
<tr>
<td>IPPS</td>
<td>Inpatient prospective payment system</td>
</tr>
<tr>
<td>IRF</td>
<td>Inpatient rehabilitation facility</td>
</tr>
<tr>
<td>IT</td>
<td>Information technology</td>
</tr>
<tr>
<td>JCAHO</td>
<td>Joint Commission on Accreditation of Healthcare Organizations</td>
</tr>
<tr>
<td>LCD</td>
<td>Local coverage determination</td>
</tr>
<tr>
<td>LTC-DRG</td>
<td>Long-term care diagnosis-related group</td>
</tr>
<tr>
<td>LTCH</td>
<td>Long-term care hospital</td>
</tr>
<tr>
<td>MAC</td>
<td>Medicare Administrative Contractors</td>
</tr>
<tr>
<td>MCC</td>
<td>Major complication and comorbidity</td>
</tr>
</tbody>
</table>
# HIM Acronyms to Know

<table>
<thead>
<tr>
<th>Acronym</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>MCO</td>
<td>Managed care organization</td>
</tr>
<tr>
<td>MCV</td>
<td>Major cardiovascular</td>
</tr>
<tr>
<td>MDC</td>
<td>Major diagnostic category</td>
</tr>
<tr>
<td>MDH</td>
<td>Medicare dependent hospital (small rural)</td>
</tr>
<tr>
<td>MedPAC</td>
<td>Medicare Payment Advisory Commission</td>
</tr>
<tr>
<td>MedPAR</td>
<td>Medicare Provider Analysis and Review</td>
</tr>
<tr>
<td>MIC</td>
<td>Medicaid Integrity Contractors</td>
</tr>
<tr>
<td>MRHFP</td>
<td>Medicare Rural Hospital Flexibility Program</td>
</tr>
<tr>
<td>MS-DRG</td>
<td>Medicare Severity DRG</td>
</tr>
<tr>
<td>NAHIT</td>
<td>National Alliance for Health Information Technology</td>
</tr>
<tr>
<td>NCCI</td>
<td>National Correct Coding Initiative</td>
</tr>
<tr>
<td>NCD</td>
<td>National coverage determination</td>
</tr>
<tr>
<td>NCHS</td>
<td>National Center for Health Statistics</td>
</tr>
<tr>
<td>NCQA</td>
<td>National Committee for Quality Assurance</td>
</tr>
<tr>
<td>NCVHS</td>
<td>National Committee on Vital and Health Statistics</td>
</tr>
<tr>
<td>NHIN</td>
<td>National Health Information Network</td>
</tr>
<tr>
<td>NICU</td>
<td>Neonatal intensive care unit</td>
</tr>
<tr>
<td>NPI</td>
<td>National Provider Identifier</td>
</tr>
<tr>
<td>NQF</td>
<td>National Quality Forum</td>
</tr>
<tr>
<td>NVHRI</td>
<td>National Voluntary Hospital Reporting Initiative</td>
</tr>
<tr>
<td>OCE</td>
<td>Outpatient code editor</td>
</tr>
<tr>
<td>OCR</td>
<td>Office for Civil Rights</td>
</tr>
<tr>
<td>OES</td>
<td>Occupational employment statistics</td>
</tr>
<tr>
<td>OIG</td>
<td>Office of Inspector General</td>
</tr>
<tr>
<td>OMB</td>
<td>Office of Management and Budget</td>
</tr>
<tr>
<td>OPPS</td>
<td>Outpatient prospective payment system</td>
</tr>
<tr>
<td>OR</td>
<td>Operating room</td>
</tr>
<tr>
<td>OSCAR</td>
<td>Online Survey Certification and Reporting (System)</td>
</tr>
<tr>
<td>PHR</td>
<td>Personal health record</td>
</tr>
<tr>
<td>PO</td>
<td>By mouth</td>
</tr>
<tr>
<td>POA</td>
<td>Present on admission</td>
</tr>
<tr>
<td>PPI</td>
<td>Producer price index</td>
</tr>
<tr>
<td>PPS</td>
<td>Prospective payment system</td>
</tr>
<tr>
<td>PRA</td>
<td>Per resident amount</td>
</tr>
<tr>
<td>PRM</td>
<td>Provider Reimbursement Manual</td>
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<tr>
<td>PRRB</td>
<td>Provider Reimbursement Review Board</td>
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<tr>
<td>PS&amp;R</td>
<td>Provider Statistical and Reimbursement (System)</td>
</tr>
<tr>
<td>QIO</td>
<td>Quality Improvement Organization</td>
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<tr>
<td>RA</td>
<td>Remittance advice</td>
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<tr>
<td>RAC</td>
<td>Recovery Audit Contractor</td>
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HIM Acronyms to Know

<table>
<thead>
<tr>
<th>Acronym</th>
<th>Description</th>
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<tbody>
<tr>
<td>RBC</td>
<td>Red blood cell</td>
</tr>
<tr>
<td>RC</td>
<td>Revenue code</td>
</tr>
<tr>
<td>RHC</td>
<td>Rural health clinic</td>
</tr>
<tr>
<td>RHIO</td>
<td>Regional health information organization</td>
</tr>
<tr>
<td>ROI</td>
<td>Release of information (OR return on investment)</td>
</tr>
<tr>
<td>RY</td>
<td>Rate year</td>
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<tr>
<td>SAF</td>
<td>Standard analytic file</td>
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<tr>
<td>SCH</td>
<td>Sole community hospital</td>
</tr>
<tr>
<td>SNF</td>
<td>Skilled nursing facility</td>
</tr>
<tr>
<td>SOCs</td>
<td>Standard occupational classifications</td>
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<tr>
<td>SSA</td>
<td>Social Security Administration</td>
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<tr>
<td>SSI</td>
<td>Supplemental Security Income</td>
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<tr>
<td>ST</td>
<td>Status indicator</td>
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<tr>
<td>TAG</td>
<td>Technical Advisory Group</td>
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<tr>
<td>UHDDS</td>
<td>Uniform Hospital Discharge Data Set</td>
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<tr>
<td>WBC</td>
<td>White blood cell</td>
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<tr>
<td>ZPIC</td>
<td>Zone Program Integrity Contractor</td>
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</table>
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<tr>
<td>Grand total</td>
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Speaker contact information

Robert S. Gold, MD  
CEO  
DCBA, Inc.  
4611 Brierwood Place  
Atlanta, GA 30360  
Phone: 770-216-9691  
Email: DCBAInc@cs.com

Valerie Bica, BSN, RN, CPN  
Clinical Documentation Specialist  
Nemours/A.I. duPont Hospital for Children  
Wilmington, DE 19803  
Phone: 302-651-6319  
Email: vbica@nemours.org

For post-program questions:  
Melissa Varnavas  
Senior Managing Editor  
HCPro, Inc.  
Email: mvarnavas@hcpro.com

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