

EDUCATION/TRAINING

Over the Rainbow: Remembering the What's What of Color-Coding Kids

Lisa Banter-DeBoer, NREMT-P, PI, CET

January 2022

ISSN 51

Index 1

Back in the mid-1980s, when Jim Broselow, MD, an ER physician from North Carolina, and Bob Luten, MD, a pediatric ER doctor from Florida, came up with a simpler way to deal with the stressors associated with caring for critical children in the emergency department, they had no idea they would literally be changing the world of caring for sick kids forever.

Correctly measuring a child on their Broselow-Luten color-coding tape (commonly referred to as the Broselow tape) allows us to quickly obtain various emergency tube sizes and medication doses for a patient's age and weight. Since the tape came off patent, others have utilized the same color zones to create their own systems. With few exceptions, these color-coded systems are built from those original Broselow colors. In order, they are grey, pink, red, purple, yellow, white, blue, orange, and green. Each color corresponds to an appropriate tube size, fluid amount, drug dose, etc.

A challenge for many is identifying the correct color zone for the child. If you think that sounds crazy because it's easy, let me assure you otherwise. I've seen the tape used incorrectly for years during practice sessions even when people aren't stressed—it can and does happen all the time.

Practice Makes Proficient

When your tape is locked in a peds crash cart drawer or zip-tied in a pedi bag, looking at it, practicing with it, or even just touching it can be all but impossible. Think of the last time you took the tape out and really looked at it. The only way to truly get good at something is to do it over and over. Repetition is the key to mastery—so if you can't even look at your tape because it's locked up, how will you know where to find critical information on it when you're stressed?

The tape is meant to be used from the top of the child's head. Remember, *red goes to the head*—that's where *measure from this end* is printed on the red arrow. Then measure to the heel of their extended foot (not the toes). On the Broselow tape this technique gives you the color zone and approximate body weight of the child.

Now, this is the part where people freak out. "What about obese kids?! They clearly weigh more than the tape or app says!" Whether you're using the Broselow tape, Handtevy system, or one of the other rainbow-colored tapes out there, it's time to let this question go. The idea behind all the color-coded toys is simply to get you into the ballpark and hopefully keep you from unacceptable errors.

For more than 20 years my husband, Scott DeBoer, RN, MSN, EMT-P, and our team have been trying to teach better ways to care for kids. In our experience a seemingly universal axiom is, "The smaller the kid, the higher the stress"—and times of higher stress are when avoidable errors can occur. Despite our efforts and all the amazing educators we've met over the years trying to improve the world of pediatric emergency care, badness still abounds. Well-meaning practitioners are still committing errors despite one very simple and easily implemented solution: We don't practice enough with the tools in our pediatric toolbox!

If any piece of equipment requires concentration to use and you don't touch it for a year or more, it's darn near impossible to be good with that equipment, regardless of how good your memory is. When we encounter a child in full arrest, everyone is naturally and appropriately stressed. Then someone grabs the color-coded tape and proceeds to measure the child with the wrong end up! Suddenly a child who should have measured in the pink zone is now in the white zone, and no one catches it until the pediatric ICU has to replace the giant endotracheal tube.

This sad mistake has caused far too many children to needlessly require surgeries for damage to their tracheas and is a not-uncommon source of calls to our office from attorneys looking for pediatric malpractice experts. The other common malpractice call we receive involves the miscalculation of drug doses because healthcare professionals assume they will remember how to properly use the tape.

It all comes down to practice, practice, practice. If you knew it would be your child or grandchild on the next critical pediatric call, how much would you practice then? Would you practice daily? How about just weekly for a few minutes to keep your skills sharp? Perhaps it's time we give our tiny 1% (the national average EMS rate of critical peds calls) the training time they deserve instead of counting on someone more experienced being on shift to save the day.

An Apt Mnemonic

Want a simple way to remember the Broselow and Handtevy color sequences so you don't accidentally measure from the wrong side of the tape? Here's a mnemonic: *Give pediatric resuscitations priority—you will be overwhelmingly grateful*. These first letters correspond to those of the colors.

For additional ways to remember, see the sidebar.

Conclusion

We hope critical peds calls will never happen on our shift. We pray someone more experienced will save the day. We hope a supervisor or chase vehicle will pull up to take over. But what happens if no one shows up, and you have a brand-new partner on their first day—then what? All eyes are on you!

Regardless of whether you have a color-coded tape, a Pedi-Wheel in your pocket, or an app on your phone, please take a few extra minutes at the start of your shift and open those tapes and apps to prepare. Let's give our critical kids every possible chance to make it home to chase rainbows, and not send them somewhere over the rainbow for eternity!

The author thanks Scott DeBoer, RN, MSN, EMT-P, for his assistance with this article.

Sidebar: Additional Memory Aids

Here are some additional ways to help remember the ages that correspond to the colors on the Broselow tape and other pediatric systems:

Gray—Newborns can come out looking a little *gray*, covered in *goo*. Interestingly, Broselow never wanted to call this zone gray; it was meant to be sort of a “gray area” between 3–5 kg with various tubes/doses. But, having a drawer that looks gray and a section on the tape that looks gray, everyone started calling it gray. Measure head to heels to get an ideal body weight right off the tape.

Pink (4 months old)—There are four letters in *pink*, and we want these little ones to be pink, warm, and sweet. Mom and dad are also tickled pink when they (hopefully) start to sleep through the night.

Red (6 months old)—Three letters in *red*, and three letters in *six* (months).

Purple (1 year old)—By 1 year of age, these little ones will turn *purple* in one minute if you're not fast enough getting what they want!

Yellow (2–3 years old)—Terrible twos are usually *yelling* about something!

White (4–5 years old)—As 4- and 5-year-olds leave home for preschool and kindergarten, they are scared out of their minds, so they turn *white* as a ghost.

Blue (6–7 years old)—“Little Boy *Blue* has *six* boo-boos” (6–7-year-olds are crazy on the playground and get lots of bumps, bruises, and boo-boos).

Orange (8–9 years old)—“*Orange* you glad I *eight* [ate] the banana?” Kids start to love bad jokes at this age, so this is inspired by the classic punchline, “Orange you glad I didn't say banana?”

Green (10–13 years old)—This last zone is for kids going into double digits (10-plus years old). In the peds world these are the “jolly *green* giants.”

Lisa Banter-DeBoer, NREMT-P, PI, CET, is president and CEO of Pedi-Ed-Trics Emergency Medical Solutions LLC and a paramedic with Universal Studios Orlando and AMR Tampa/Auburndale (Fla.).

© 2024 HMP Global. All Rights Reserved.

[Privacy Policy](#) [Terms of Use](#)

ADVERTISEMENT