



If you can start the day without caffeine,
If you can get going without pep pills,
If you can always be cheerful, ignoring aches and pains,
If you can resist complaining and boring people with your troubles,
If you can eat the same food everyday and be grateful for it,
If you can understand when your loved ones are too busy to give you any time.
If you can overlook it when those you love take it out on you,
If you can take criticism and blame without resentment,
If you can ignore a friend's limited education and never correct him,
If you can resist treating a rich friend better than a poor friend,
If you can face the world without lies and deceit,
If you can conquer tension without medical help,
If you can relax without liquor,
If you can sleep without the aid of drugs,
If you can say honestly that deep in your heart you have no prejudice against creed, color, religion or politics,
THEN, my friend, you are almost as good as your dog.

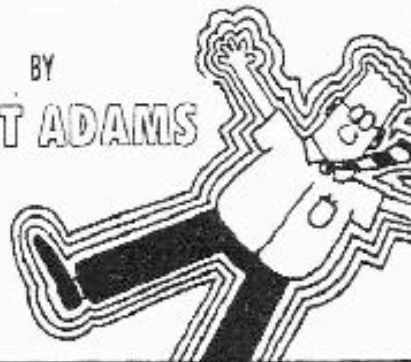
RATBERT, MY COMPANY IS HIRING FOR OUR QUALITY ASSURANCE GROUP. YOU'D BE PERFECT.

WHAT WOULD I HAVE TO DO?



DILBERT[®]

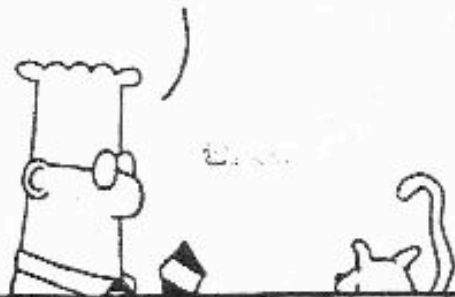
BY
SCOTT ADAMS



YOU WOULD FIND FLAWS IN OUR NEW PRODUCT, THUS MAKING YOURSELF AN OBJECT OF INTENSE HATRED AND RIDICULE.

BUT THEN YOU'D FIX THOSE FLAWS... AND YOUR RESPECT FOR ME WOULD GROW INTO A SPECIAL BOND OF FRIENDSHIP, RIGHT?!

NO, THEN WE SHIP.



Bundling to a Better Solution



Pulsecheck 2013
“Why Do Vital Signs When All You
Need is a Pulsecheck?”

Case 1

44YO F. 250lb. Call received 0601.

“ATF a large pt laying supine on her bed being tended to by NYSP and BLS provider. PD was performing chest compressions while attempting to ventilate the pt via BVM. Pt had combipads in place. PD appeared to be very tired. Pt had obvious airway compromise. Pts bedroom was very small with little room to work. Apartment it self had little room to work. Pt was at the top of a narrow staircase that had a sharp 90 degree bend half way down. Pt did not have obvious lividity or rigor. Pt still felt fairly warm to the touch. Pt obviously not stable at this time. Pt in obvious cardiac arrest.

Family state (F/S) that they had heard the pt breathing funny so when they checked on her, they noticed that she had stopped breathing. F/S that they called EMS at that time. F/S that the pt had been vomiting since they called EMS. F/S that the pt was seen in the ED this past night and was Dx with Bronchitis and D/C with Zithromax and "another medication" F/S not sure on exact Rx that was given. F/S that the pt had taken 5 50mg tablets of Tramadol earlier along with her Zithromax. F/S no ETOH or other current narcotic use. F/S that the pt has a past history of Crack/Cocaine abuse but they do not know of any in the past 6 months. F/S to EMS that the pt did not take any other drugs than what she was given. F/S that the pt had no outstanding complaints the night before aside from the Bronchitis S/S. F/S no trauma or other recent illness. Family is not sure on PMH or any other current Rx. BLS states that they did perform 2 Defibs prior to ALS arrival. BLS provider says that he thought that the NYSP Trooper was performing adequate CPR and ventilations by himself. BLS states that they did place an OPA but the pt had significant amount of emesis and they did not have suction present.

Head: Normal Findings: No obvious trauma noted. Pupils dilated and sluggish. Jaw moves freely. Copious amounts of emesis in the airway. No broken or obviously missing teeth. No obvious dentures.

Neck Findings: No obvious trauma noted.

Chest: Normal Findings: No obvious trauma. No spontaneous respirations.

Abdomen: Distention. No masses noted. Pt is obese and appears to have significant gastric inflation. No obvious trauma noted.

Pelvis Findings: No obvious trauma.

Extremity Findings: No obvious trauma. Extremities initially move well and freely. No obvious rigor or lividity.

Skin: Cyanotic Findings: Pt had obvious systemic cyanosis. No obvious rigor. No obvious lividity. No obvious open wounds noted. No obvious abscesses noted.

Trachea: Midline

06:15

Asystole. I/I/I. Unresponsive. Arrived at pt side with chest compression being performed by PD. PD also attempting to ventilate the pt via BVM. Pt in obvious cardiac arrest. Pt had copious amounts of emesis across her face, mouth and bed. Pt did have an OPA in place. Pt had Combipads in place with no rhythm showing on the monitor. Cables were attached. Monitor was not in paddles mode. Monitor changed to paddles mode to see initial rhythm. Rhythm shows Asystole. Monitor placed in paddles mode. Cardiac monitor applied at time of ALS arrival but not changed over to 3 Lead.

06:20

Directed BLS provider to change positions with PD who was obviously tired. Directed another provider to continue to ventilate pt via BVM at this time. Directed another provider to obtain a LSB and prepare for extrication. Pt rolled onto LSB for extrication. CPR immediately following pt log roll onto LSB. During log roll, pts airway was held open to help clear it of emesis. After pt rolled, airway was cleared some and BVM was much more compliant. Pt moved to the floor. Due to the pts size and small amount of space, all providers felt it was safer to slide the pt on the LSB to the top of the stairs. Short stop in CPR, approx 30 seconds, until at the top of the stair. CPR performed again for approx 4-5 minutes prior to moving down the stairs. CPR is impossible to perform while moving down the stairs. ***Opted to extricate the pt prior to advanced interventions due to the very limited space to work in. Extrication was complicated by narrow stairs with a 90 degree bend. This provider felt that IVs and ETT had a very high likelihood of being pulled during extrication. Felt that it was best to continue with BLS until arriving at the ambulance.***

06:25

After stop at the top of the stairs to get some good chest compressions in, prior to going down the stairs, Pt was slid down the stairs via LSB. 90 degree turn made with little problems. Impossible to perform CPR during move down the stairs. Move lasted approx 1 minute. Once at the bottom of the stairs, CPR continued. Pt moved to stretcher. Pt moved to ambulance.

06:30

No change in patient status. King Airway LTD Intubation 5, cm at lips. Attempts: 1, successful. Placement verified by: Auscultation, Capnography, Chest Rise. Mallampati: Class IV. Laryngoscopic: Grade III. Authorization: Via Protocol. Very difficult to directly visualize the cords. Was able to see a small portion but became occluded by emesis. Suction performed again. Difficult to find landmarks due to emesis and tissue. At this time, based on down time and difficult airway, opted to use a King LTD. King placed with no problems. Cuffs inflated. King appeared to seat with no problems. Good capno return, good L/S. Good BVM compliance. Good chest rise. Good tube condensation. No other gastric inflation noted. No air leaking from around the cuffs.

06:30

Once in the ambulance, mechanical suction performed with no problems. CPR continuing. This provider advised both other providers to change places every 2-3 minutes. Both agreed. Pt tx to ED at this time. 911 notified ED for EMS. Also setting up Advanced airway equipment at this time. Felt that the airway was required prior to IV/IO access due to compromise and gastric inflation. Mechanical suction performed at this time with no problems.

06:35

Initiate IV

No change in patient status. BG from the IV cath. Glucometer read "HI". Peripheral IV initiated with 18ga. at Left Antecubital.

Attempts: 1, successful. Authorization: Via Protocol. NS wide open.

- 06:35. No change in patient status. Epinephrine 1:10,000, 1 MG via IV
- 06:40. No change in patient status. Sodium Bicarbonate, 100 MEQ via IV. Naloxone, 2 MG via IV. Vasopressin, 40 IU via IV.
- 06:45. Pt tx to ED with no problems. Pt remained in cardiac arrest. CPR continued during tx. interruptions in CPR were limited to provider swaps. No changes in BVM compliance. No further gastric inflation during tx. No obvious emesis during tx. No further need to suction. Pt moved to hospital bed via LSB. Full report given to ED MD with no problems. Pt care tx to ED staff at this time with no problems. Did not change the monitor from paddles to monitor. No change in rhythm noted with paddle view. Epinephrine 1:10,000, 1 MG via IV.



Care Compliance review of chart as follows. Did you bring in your suction unit since one was not present? Reasoning for ALS interventions being limited are sufficient however with patient presentation and short downtime aggressive management teachings would have benefited this patient in my opinion. Time from arrival at patient side to first line med is 17 minutes, early aggressive meds could have helped to correct this per training. IO could have been placed in room or hallway and first line meds admin while patient prepared for moving. First line med noted is Epi and care optimization proves Vasopressin works better the Epi in PEA/ASYSTOLE with acidosis present that would stand to be true with complicated airway as well as very high b/g levels. Was CPR stopped during any intubation attempts?. ETCO2 waveform not seen on any strips was monitor changed to visualize the waveform. Trend strips attached show dropping ETCO2 levels during the call post insertion seem to drop in the last 5 minutes was this recognized during the call and any assessment given to why. I agree that patient presentation in room making difficult patient interactions however 20 +/- minutes of patient in asystole with positive findings of high b/g could have been rapidly corrected for viability if aggressive meds were applied prior to extrication. You state ETCO2 at 0630 but first ETCO2 is 8 minutes later is the from the variance in time? Times to me per run times and monitor times are pretty close so I want to confirm no monitor issues. Did patient color ever increase or decrease with ETCO2 levels as noted? Correction on Bicarb dosage. Final treatment for HI b/g was fluid amount of how much? Was three lead ever utilized for more defined rhythm look. Care not to standard in my opinion, opportunity for improvement seen to this auditor.

I understand the questions and will do my best to answer them. I did not bring my own suction unit in because I had assumed that the BLS provider would have the required BLS equipment with him. After the pt was rolled onto her side, the airway did clear and use of BVM was much more compliant and with little compromise. I agree other statements fully and will answer better later in the comment. CPR was NOT interrupted for any airway attempt. I personally have a strict policy against that. I forgot to change over to the waveform capnography. I am attributing the drop in ETCO₂ to poor CPR due to providers being tired and/or performing poor CPR. I did notice the drop and did change out providers every two minutes or so. Did attempt to correct with little change so I am assuming they were getting tired. I did not notice the CO₂ error. I may have put it in the wrong place to start. There was a short delay in placing the pt on ETCO₂ due to not being able to find the tubing at first. No monitor issues that I am aware of but this was NOT our monitor so I can not promise that there was no issue with it. Pt did start to have lividity during tx and at end of tx. No other obvious changes in color of skin noted by me. 3Lead was placed but did not print with summary for some reason and I did not press print. To answer some of the other questions, this scene was out of control when I arrived. I did make several attempts to gain control with no success. The BLS provider on scene was NOT performing BLS skills and the other providers that arrived "under the radar" were very reluctant to assist, aside from extrication, because they did not want to be attached to the call. PD and initial BLS provider appeared exhausted. The apartment was very cramped and very little room to work. I did consider doing a King and IO prior to extrication but due to the stairs, pt size and the help that was present, I will guarantee that both would have been pulled, damaged or possibly cause injury to providers/pt during extrication. We basically had to stand the pt up at a 45 degree angle then twist another 45 degrees at the same time just to get down the stairs. Based on the scene when I walked in, I felt that extricating the pt to an environment that I can control was best case scenario with this pt. Once IV was obtained, I opted to give first round EPI to get something on board while drawing up other Rx. Both other providers were busy and not able to assist with Rx set up. I agree that this call does not meet the standard, but in my opinion, the standards are geared towards the "ideal situation", which I did not have, but I did attempt to follow once I was able to do so. If there are any other questions or concerns, please feel free to contact me or flag the chart again with any further questions.

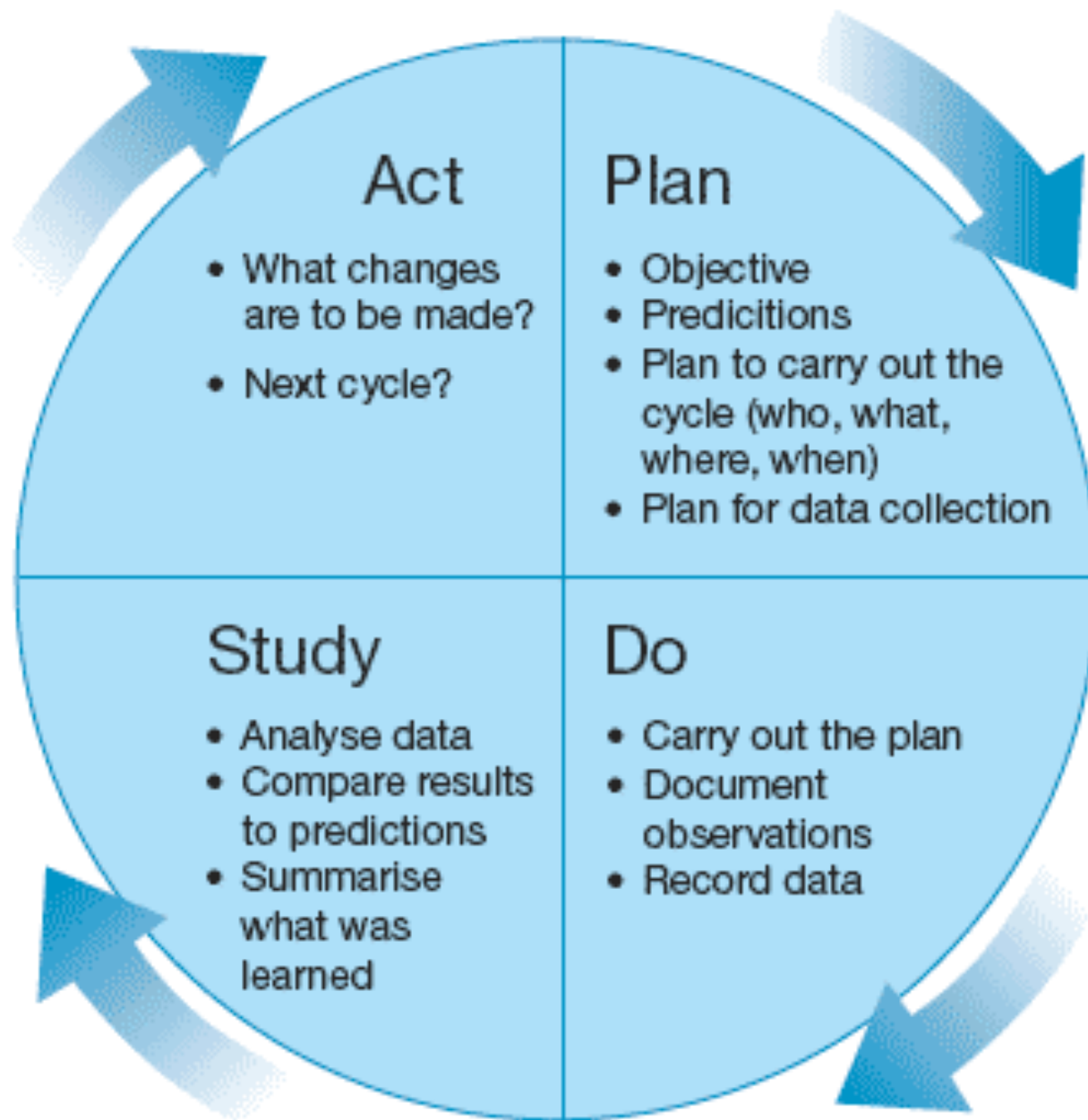
I have reviewed your answers to my questions and do not feel that you have adequately answered them.....

I feel I answered them to the best of my ability.....



Medical Director Comment

“Case will be reviewed at next agency meeting. All comments should be taken offline”.



Current QA

- The “Good”
 - Calls are peer reviewed
 - Problem cases are identified
 - Bad providers may be tracked
 - May notice patterns

Current QA

- The “Bad”
 - Peers don't respect each other
 - Subjective
 - Used for things other than quality
 - Frustrations all round

Results

- People may write PCRs towards a median standard
- Providers disengage with patient centered care and move towards a documentation centered care

Results

- PCRs become sterilized when being written and as a result factors not considered previously continue to be missed
- Incorporates systemic problems into the accepted process

Another Way

- We need to ask.....
 - “Why are we doing what we do?”
- Initiate a drill down activity

Why?

- “To help people”
- “It gives me a purpose”
- “I’m good at it”
- “When I was younger.....”
- “I like to drive fast.....”

Common Thread

- “To provide effective, expedient, high quality care to the satisfaction of our providers, patients and community”

New Quality System

- Effective - Objective actions that are shown to make a difference
- Expedient - Simple actions that can be done quickly and don't delay other goals
- “Bang for your buck”

New Quality System

- Satisfaction
 - Patient - Positive clinical outcome
 - Provider - Fair, objective, impactful
 - Community - Outcome, safe

Bundle QA

What is Bundling

- A cohesive group of steps that must ALL be completed to succeed.
- Each step is an accepted best practices or has been determined to assist the agency in meeting a stated goal.
- A bundle is an all or nothing entity. Either a bundle is complete or it is not.
- A bundle is consistently applied to a specific complaint every time.

Just a Protocol?

- A bundle is will often take components of several protocols from several sources and ensure that together those protocols are implemented.
- Protocols often leave room for judgement or contain non-critical steps that do not impact patient care, a bundle selects specific critical elements or best practices and applies them together.

Just a Protocol?

- Protocols may give the impression that things are done at the end of the protocol. Because a bundle determines select specific critical elements from previously disconnected elements of care (911, Fire response, Police, EMS) the bundle becomes a unifying tool that draws together those disconnected elements. One provider will not be able to complete all the aspects of a bundle. To complete a bundle will require multiple providers to complete individual components of the bundle.

Checklist?

- A bundle is a combination of desired and evidence based actions that usually contain many elements. It is not a checklist for an individual but rather a tool to ensure that a system has done everything that it can to impact the management of the patient.

Checklist

- There is no identified accountability within a bundle, while individual agencies or providers may have more of an impact on certain elements of a bundle it is a collective quality target and standard. A bundle is either complete or not. If a bundle is incomplete when the patient arrives at hospital then the patient's care is incomplete.

What Does it Look Like?

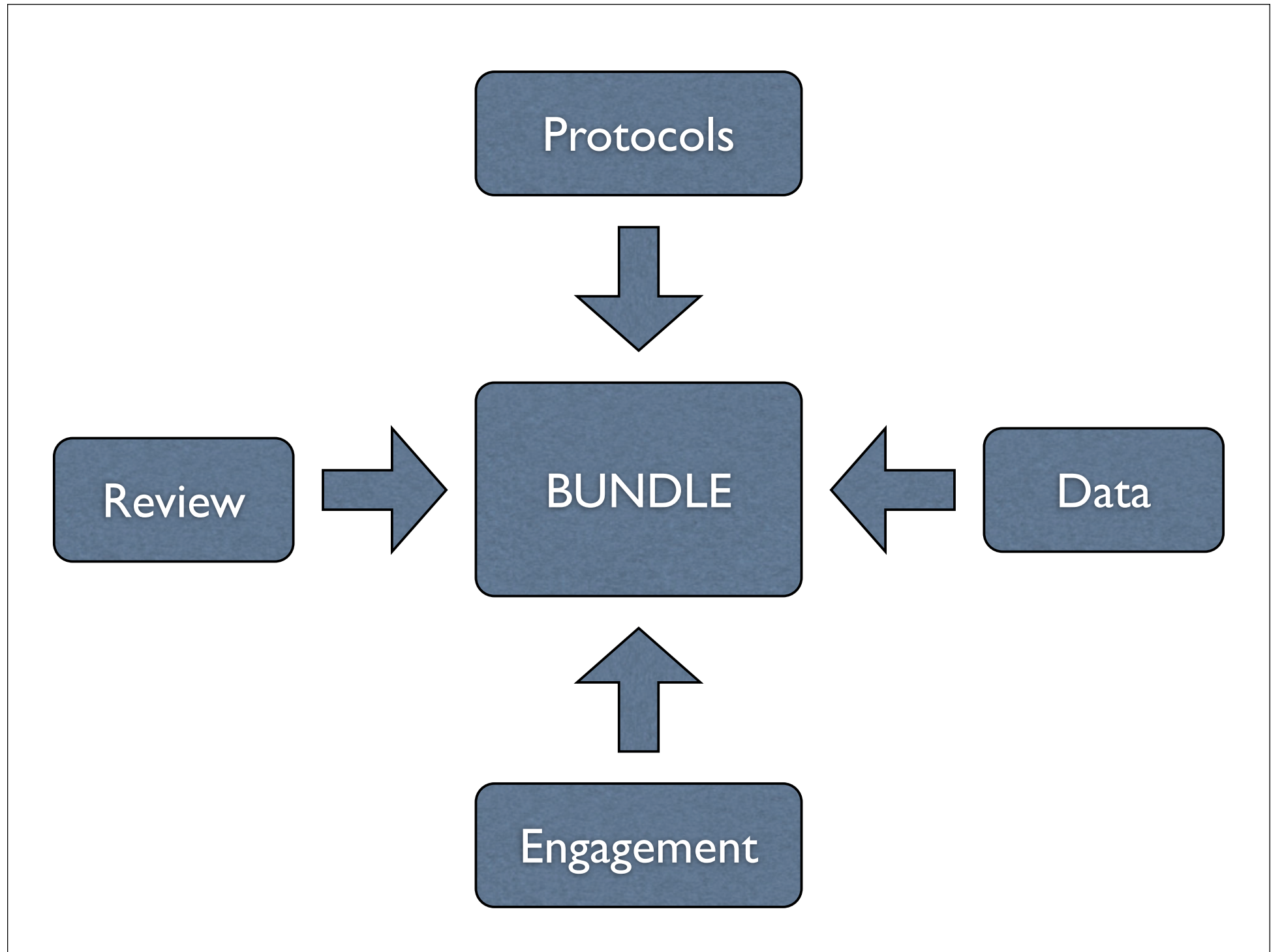
- Each bundle contains major elements, each of which prior to inclusion has been determined to be represent a critical aspect of the care of the patient.
- Each major element is then broken down to its component steps that are required to be completed in order to meet the major element goal.

Summary

- A small but critical set of actions or processes that cannot be missed.
- When an element is missed, the patient is at a much greater risk for serious complications.
- When an element is missed, the collective responding team has failed to optimize the care of the patient.
- A bundle is a team responsibility.
- Has a specific time frame and actions or processes should be regarded as time-critical.

Flexibility

- As new information is presented and considered, the bundle can respond by changing
- Can be altered more rapidly than protocols that require multiple levels of authorization



Frustration

- It is a constantly moving target
- Rapid changes occur in heavily studied conditions
- Goals remain the same
- Commitment to educate/read by techs

Cardiac Arrest

- Easy First Target because of mass of information and multiple “experts”.

Cardiac Arrest

- Stage I - Evaluate who are the players in the management of Cardiac Arrest.

Players

- 911
- Community Responders
- Trained BLS Responders
- Trained ALS Responders
- Hospital Care Providers

Cardiac Arrest Bundle

- Stage 2 - Identify Critical Elements
 - Actions that have been demonstrated to make a difference

Cardiac Arrest Elements

- Early and continuous high quality CPR.
- Early Defibrillation/Appropriate energy.
- Safe ALS management.
- Aggressive medication management.
- Post-resuscitation management.

Break Down Elements

- Early and Continuous High Quality CPR.
 - Early Recognition by 911/EMD coding of Cardiac Arrest and accurate pre-arrival instructions
 - Dispatching of closest 1st responder to the scene to assume CPR duties using previously optimized CPR technique
 - Ensuring continuous, uninterrupted CPR for the duration of the resuscitation
 - Utilization of CPR that generates a palpable pulse and application of mechanical CPR device if available

Break Down Elements

- Early Defibrillation/Appropriate energy
 - Application of an AED by first responder on arrival at scene
 - Appropriately applied shocks by ALS (Single Shock, Correct Energy Level)

Break Down Elements

- Safe and Effective ALS Management
 - Early Aggressive Airway Management without interruption in CPR with situation dictated by clinical setting and resources available
 - No interruption in CPR to establish an airway
 - With single ALS provider consider King airway over endotracheal intubation
 - Endotracheal intubation is regarded as the preferred airway for use in resuscitation, however King Airway is an acceptable alternative based on circumstance

Break Down Elements

- Aggressive medication management.
 - Early IV or IO access established
 - Placement of IO is more rapid and can be used as a primary resuscitation line with later placement of an IV
 - Preferred use of initial vasopressin IV over epinephrine IV
 - Early administration of sodium bicarbonate

Break Down Elements

- Aggressive Post-Resuscitation Care
 - Initiation in the field of post-resuscitation induced hypothermia if protocol for initiation met
 - Initial and +10min post-resuscitation 12 lead ECG secured
 - Transport to the appropriate care facility and use of sedation and paralysis as needed after discussion with medical control
 - Medicate and ventilate to maintain MAP>60, ETCO₂ 40-45, oxygen saturation 94-97%

Cardiac Arrest Bundle

- Provides
 - The Current Optimized Care to Achieve the Stated Goals
 - A QA scorecard that everyone knows about
 - A Clear, Objective, Realistic and Fair Standard
 - A Peer Developed Standard

Cardiac Arrest Bundle

- Provides
 - A Structure for Education

Does It Work

- Major ALS response agency
 - Pre-Bundle - ROSC 9% (1 year data)
 - Post-Bundle - ROSC 41% (1 year data)

Changes

- Initial Bundle
 - Use of the King Airway as the Primary Airway
 - “King Airway should be the initial airway management device utilized when an ALS provider has determined a need to secure the airway during cardiac arrest. Any deviation should be clearly documented including description of the reason for deviation.”

Changes

- New data suggested that King Airway may impede cerebral blood flow and Paramedics expressed concern over skill degradation
- “With single ALS provider consider King airway over endotracheal intubation”
- “Endotracheal intubation is regarded as the preferred airway for use in resuscitation, however King Airway is an acceptable alternative based on circumstance”

Vasopressin

- Must be clear about goals to achieve them
 - “Discharge from Hospital” vs “ROSC”
 - EMS Standard is currently “ROSC”
 - Bundles reflect that goal

Case

- QA Flag to “All Providers”
 - “The Cardiac Arrest was reviewed utilizing the Cardiac Arrest Bundle Standard”

Case

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Change Language....

- CPR.....look tired
- “CPR was being done and (was/was not) generating a palpable pulse”

Component	Recommendation
911	Positive feedback to telecommunicator for initiating CPR instructions.
BLS	Stress importance of continuous CPR.
ALS	Orotracheal intubation should not have been attempted and delayed or prevented other lifesaving techniques being utilized. ALS providers should be provided with references for airway optimization in OOHCA. Medication administration was not optimal. ALS providers should be provided with referenced for medication optimization in OOHCA. Future compliance should be monitored.

Active Bundles

- Cardiac Arrest
- Stroke
- Chest Pain
- Shortness of Breath
- BLS response
- Trauma - General
- Altered Level of Consciousness

Results

- General Satisfaction with Program
- “Everyone is involved”
- “I know the rules”
- “I like this but can we change.....”
- Flags fewer and shorter
- Improved Outcomes with Decreased Contact Times

From Here

- Bundles are now driving the clinical and protocol process
 - “SOB”
 - Interventions generalized and applicable to multiple presentations
 - Introduced aggressiveness steps

Contact

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