EMD Aspirin Overview

Christopher Kahn, MD, MPH, FAEMS
Assoc. Prof. of Clinical Emergency Medicine
Base Hospital Medical Director

UC San Diego
MEDICAL CENTER

Overview

- Background
- What we know
- What we think we know
- What we're not sure of
- What one dispatch protocol is proposing to do
- Discussion

UC San Diego
Medical Center

Background

- San Diego's dispatch centers are working with County EMS to have standardized protocols across the county, with the goal of having all patients in the county get the same treatment throughout their EMS course regardless of location
- One area of current non-agreement involves the use of aspirin prior to paramedic arrival

UC San Diego
Medical Center

What We Know

- Aspirin is a low-cost, significantly effective way to decrease mortality from acute coronary syndrome
- Giving aspirin when appropriate is a key performance measure for CMMS, JC and most EMS systems
- Having EMS give aspirin improves administration rates AND patient outcomes
- Our rates of giving aspirin are good, but not perfect

UC San Diego
Medical Center

Cardiology 2002

- For this study: early means “prior to hospital admission”
- Early aspirin users (n = 338; 37%) were younger, less likely to be women, and more likely to smoke ($p < 0.006$) than late users (n = 584; 63%). Other baseline and clinical characteristics were similar
- Early aspirin users were more likely to be treated with thrombolysis or primary percutaneous transluminal coronary angioplasty
- Compared with late users, early aspirin users had significantly lower in-hospital complications and lower mortality rates at 7 (2.4 vs. 7.3%, $p = 0.002$) and 30 days (4.9 vs. 11.1%, $p = 0.001$). By multivariate adjustment, pre-hospital aspirin was an independent determinant of survival at 7 (odds ratio 0.43; 95% confidence interval 0.18-0.92) and at 30 days (odds ratio, 0.60; 95% confidence interval 0.32-1.08)
- Survival benefit associated with aspirin persisted for subgroups treated or not with reperfusion therapy.

UC San Diego
Medical Center

American Journal of Cardiology 2002

- Early (n = 364) versus late (n = 836) users were defined as those receiving emergency aspirin before versus after initiation of thrombolysis, respectively
- Early users experienced lower mortality at 7 days (2.5% vs 6.0%, p = 0.01), 30 days (3.3% vs 7.3%, p = 0.008), and 1 year (5.0% vs 10.6%, p = 0.002) than late users
- This survival benefit persisted for patients with and without previous aspirin therapy or revascularization and after adjustment for baseline characteristics and therapies at 7 days (odds ratio 0.36, 95% confidence interval 0.15 to 0.79), at 30 days (odds ratio 0.39, 95% confidence interval 0.17 to 0.82), and at 1 year (odds ratio 0.41, 95% confidence interval 0.21 to 0.74)

UC San Diego
Medical Center

Emergency Medicine Journal 2015

- Analysis of the 2011 NEMSIS database targeted patients aged ≥40 years with a paramedic primary impression of 'chest pain'. To identify patients with chest pain of suspected cardiac etiology, we included those for whom an ECG or cardiac monitoring had been performed. Trauma-related chest pain and basic life support transports were excluded
- Of the total 14,371,941 EMS incidents in the 2011 database, 198,231 patients met our inclusion criteria (1.3%). Of those, 45.4% received aspirin from the EMS provider
- No difference when grouped by age or sex

UC San Diego
Medical Center

What We Think We Know

- Patients often don’t think to take aspirin on their own
- Some people are on aspirin at baseline, but we think it’s helpful to take additional aspirin if you’re having an acute event

UC San Diego
Medical Center

Academic Emergency Medicine 1998

- EMS incident reports for patients with a complaint of chest pain from June 1, 1997, to August 31, 1997
- The study included 694 subjects. One hundred two (15%) took aspirin for their chest pain before the arrival of EMS personnel
- Of the 322 subjects who reported taking aspirin on a regular basis, 82 (26%) took additional aspirin for their acute chest pain
- Only 20 (5%) of the 370 patients who were not using regular aspirin therapy self-administered aspirin acutely ($p<0.001$)

UC San Diego
Medical Center

What We're Not Sure Of

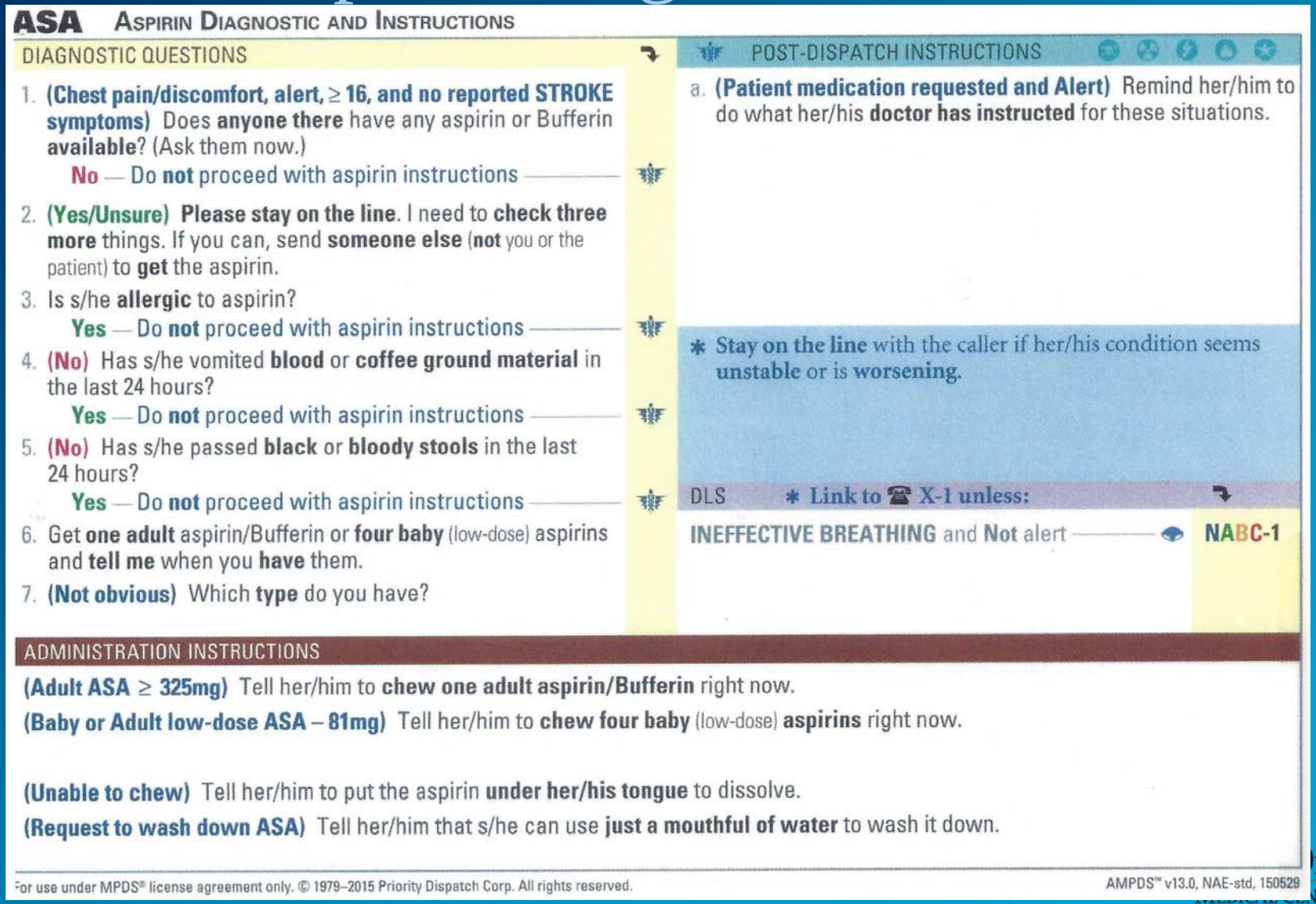
- Does it make a difference if aspirin is given prior to paramedic arrival?
  - Total administration rate
  - Ease of catheterization (e.g., complication rate)
  - Short- and long-term outcomes
- Can people reliably identify what aspirin is?
  - Correct medication
  - Correct dose

MPDS Proposal Regarding Aspirin

- Having EMDs help RPs through aspirin contraindications, identification, and administration can be completed prior to paramedic arrival
- EMDs are strictly held to protocol as non-medical personnel, possibly increasing the rate of adherence to aspirin administration

UC San Diego
Medical Center

MPDS Aspirin Diagnostic Tool



ASA ASPIRIN DIAGNOSTIC AND INSTRUCTIONS

DIAGNOSTIC QUESTIONS

1. **(Chest pain/discomfort, alert, ≥ 16, and no reported STROKE symptoms)** Does **anyone there** have any aspirin or Bufferin **available**? (Ask them now.)
   No — Do **not** proceed with aspirin instructions
2. **(Yes/Unsure) Please stay on the line.** I need to **check three more** things. If you can, send **someone else** (**not** you or the patient) to **get** the aspirin.
3. Is s/he **allergic** to aspirin?
   Yes — Do **not** proceed with aspirin instructions
4. **(No)** Has s/he vomited **blood** or **coffee ground material** in the last 24 hours?
   Yes — Do **not** proceed with aspirin instructions
5. **(No)** Has s/he passed **black** or **bloody stools** in the last 24 hours?
   Yes — Do **not** proceed with aspirin instructions
6. Get **one adult** aspirin/Bufferin or **four baby** (low-dose) aspirins and **tell me** when you **have** them.
7. **(Not obvious)** Which **type** do you have?

POST-DISPATCH INSTRUCTIONS

a. **(Patient medication requested and Alert)** Remind her/him to do what her/his **doctor has instructed** for these situations.

* **Stay on the line** with the caller if her/his condition seems **unstable** or is **worsening.**

DLS * **Link to ☎ X-1 unless:**

INEFFECTIVE BREATHING and **Not** alert — **NABC-1**

ADMINISTRATION INSTRUCTIONS

(Adult ASA ≥ 325mg) Tell her/him to **chew one adult aspirin/Bufferin** right now.

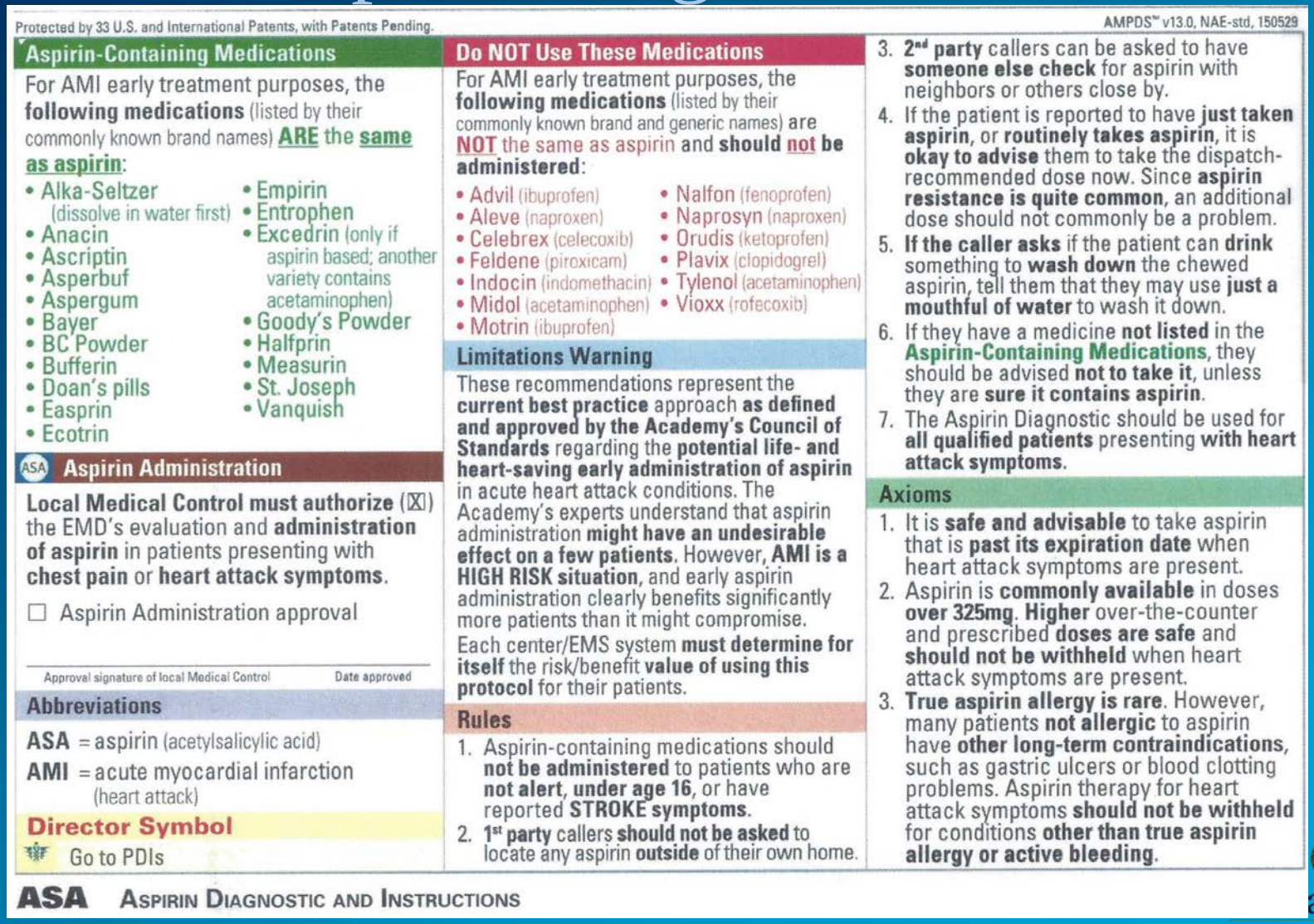
(Baby or Adult low-dose ASA – 81mg) Tell her/him to **chew four baby** (low-dose) **aspirins** right now.

(Unable to chew) Tell her/him to put the aspirin **under her/his tongue** to dissolve.

(Request to wash down ASA) Tell her/him that s/he can use **just a mouthful of water** to wash it down.

AMPDS™ v13.0, NAE-std, 150529

MPDS Aspirin Diagnostic Tool



Protected by 33 U.S. and International Patents, with Patents Pending.

AMPDS™ v13.0, NAE-std, 150529

Aspirin-Containing Medications

For AMI early treatment purposes, the **following medications** (listed by their commonly known brand names) **ARE the same as aspirin**:

- Alka-Seltzer (dissolve in water first)
- Anacin
- Ascriptin
- Asperbuf
- Aspergum
- Bayer
- BC Powder
- Bufferin
- Doan's pills
- Easprin
- Ecotrin
- Empirin
- Entrophen
- Excedrin (only if aspirin based; another variety contains acetaminophen)
- Goody's Powder
- Halfprin
- Measurin
- St. Joseph
- Vanquish

ASA Aspirin Administration

Local Medical Control must authorize (☒) the EMD's evaluation and **administration of aspirin** in patients presenting with **chest pain** or **heart attack symptoms**.

☐ Aspirin Administration approval

Approval signature of local Medical Control — Date approved

Abbreviations

ASA = aspirin (acetylsalicylic acid)

AMI = acute myocardial infarction (heart attack)

Director Symbol

Go to PDIs

Do NOT Use These Medications

For AMI early treatment purposes, the **following medications** (listed by their commonly known brand and generic names) are **NOT** the same as aspirin and **should not be administered**:

- Advil (ibuprofen)
- Aleve (naproxen)
- Celebrex (celecoxib)
- Feldene (piroxicam)
- Indocin (indomethacin)
- Midol (acetaminophen)
- Motrin (ibuprofen)
- Nalfon (fenoprofen)
- Naprosyn (naproxen)
- Orudis (ketoprofen)
- Plavix (clopidogrel)
- Tylenol (acetaminophen)
- Vioxx (rofecoxib)

Limitations Warning

These recommendations represent the **current best practice** approach **as defined and approved by the Academy's Council of Standards** regarding the **potential life- and heart-saving early administration of aspirin** in acute heart attack conditions. The Academy's experts understand that aspirin administration **might have an undesirable effect on a few patients**. However, **AMI is a HIGH RISK situation**, and early aspirin administration clearly benefits significantly more patients than it might compromise.

Each center/EMS system **must determine for itself** the risk/benefit **value of using this protocol** for their patients.

Rules

1. Aspirin-containing medications should **not be administered** to patients who are **not alert**, **under age 16**, or have reported **STROKE symptoms**.
2. **1st party** callers **should not be asked** to locate any aspirin **outside** of their own home.
3. **2nd party** callers can be asked to have **someone else check** for aspirin with neighbors or others close by.
4. If the patient is reported to have **just taken aspirin**, or **routinely takes aspirin**, it is **okay to advise** them to take the dispatch-recommended dose now. Since **aspirin resistance is quite common**, an additional dose should not commonly be a problem.
5. **If the caller asks** if the patient can **drink** something to **wash down** the chewed aspirin, tell them that they may use **just a mouthful of water** to wash it down.
6. If they have a medicine **not listed** in the **Aspirin-Containing Medications**, they should be advised **not to take it**, unless they are **sure it contains aspirin**.
7. The Aspirin Diagnostic should be used for **all qualified patients** presenting **with heart attack symptoms**.

Axioms

1. It is **safe and advisable** to take aspirin that is **past its expiration date** when heart attack symptoms are present.
2. Aspirin is **commonly available** in doses **over 325mg**. **Higher** over-the-counter and prescribed **doses are safe** and **should not be withheld** when heart attack symptoms are present.
3. **True aspirin allergy is rare**. However, many patients **not allergic** to aspirin have **other long-term contraindications**, such as gastric ulcers or blood clotting problems. Aspirin therapy for heart attack symptoms **should not be withheld** for conditions **other than true aspirin allergy or active bleeding**.

ASA ASPIRIN DIAGNOSTIC AND INSTRUCTIONS

an Diego
MEDICAL CENTER

Discussion

- Is this something we should consider?

UC San Diego
Medical Center

Questions?

UC San Diego
MEDICAL CENTER