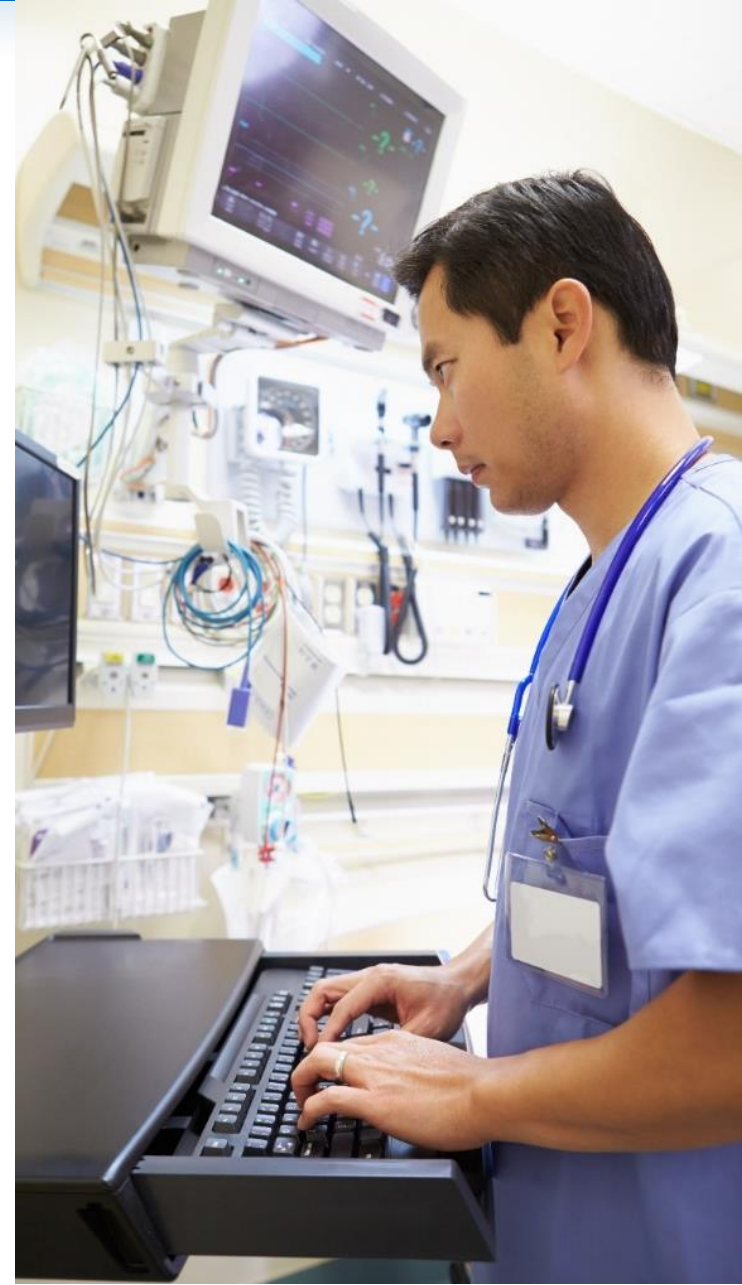


Case Presentation

- A 25-year-old man presented to ED with low back pain.
- Based on his history of recently lifting furniture, **the emergency physician diagnosed musculoskeletal strain.**
- Patient discharged on Motrin 800 mg tid, PRN follow up with physical therapy.



Case Continued

- Patient returned (Bounceback) 2 days later with worsened pain.
- **Diagnosis: Spinal epidural abscess**
- Patient had a lengthy hospitalization. Ultimately no malpractice claim was filed.



Cognitive Autopsy

- ED Doc **never** asked about a history of fever.
- Fever on the patient track board was **not** seen by the ED Doc.
- Temp of 102 F was auto-entered into chart but **never** seen by the EP.
- ED Doc did **not** consider a predisposition for an epidural process – patients was an IV drug user.
- ED Doc did **not** modify his DDx based on multiple levels of back pain.



Malpractice Claims

- 99% of ED practitioners sued by age 65
- 7% of Emergency Physicians sued each year
- AON national benchmark HPL cost \$6.83 per ED patient

Medical Errors



4th Leading Cause of Death in U.S.



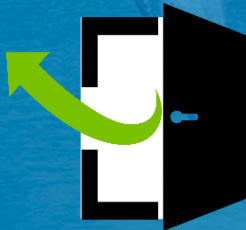
Diagnostic Error Rate

SEA
62%

AOD
28%

Thrombosis
24%

VTE/PE
20%



9 Patients Die per 100K ED Discharges within 7 days from medical errors.

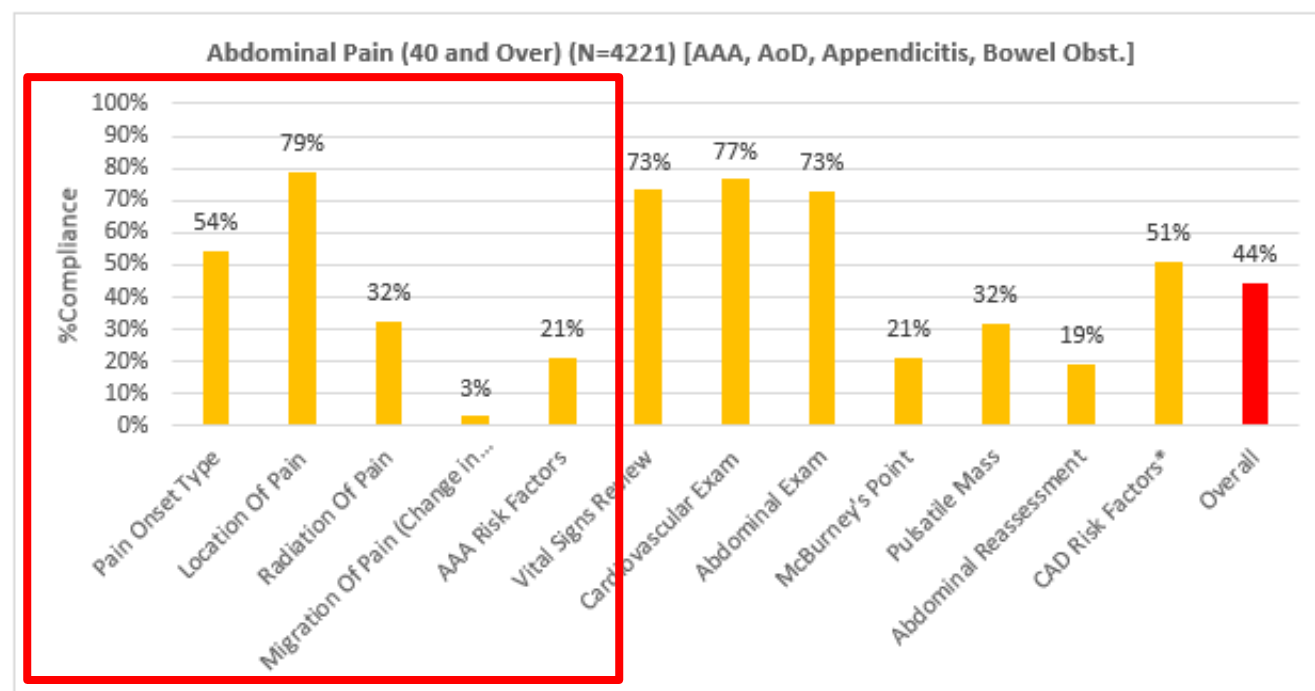


2.9% Bounceback Admit Rate
many related to medical error

Abdominal Pain (40 and older) Documentation (n = 4,221 patients 16 hospital orgs) – Artificial Intelligence Analytics Program

< AP > 40

Abdominal Pain (40 and Over)				
ED Guidance	Documented			
	YES	NO	Total	%YES
Pain Onset Type	2,291	1,930	4,221	54%
Location Of Pain	3,322	899	4,221	79%
Radiation Of Pain	1,366	2,855	4,221	32%
Migration Of Pain (Change in Loca	129	4,092	4,221	3%
AAA Risk Factors	905	3,316	4,221	21%
Vital Signs Review	3,091	1,130	4,221	73%
Cardiovascular Exam	3,234	987	4,221	77%
Abdominal Exam	3,086	1,135	4,221	73%
McBurney's Point	907	3,314	4,221	21%
Pulsatile Mass	1,347	2,874	4,221	32%
Abdominal Reassessment	814	3,407	4,221	19%
CAD Risk Factors*	648	619	1,267	51%
Overall	21,140	26,558		44%

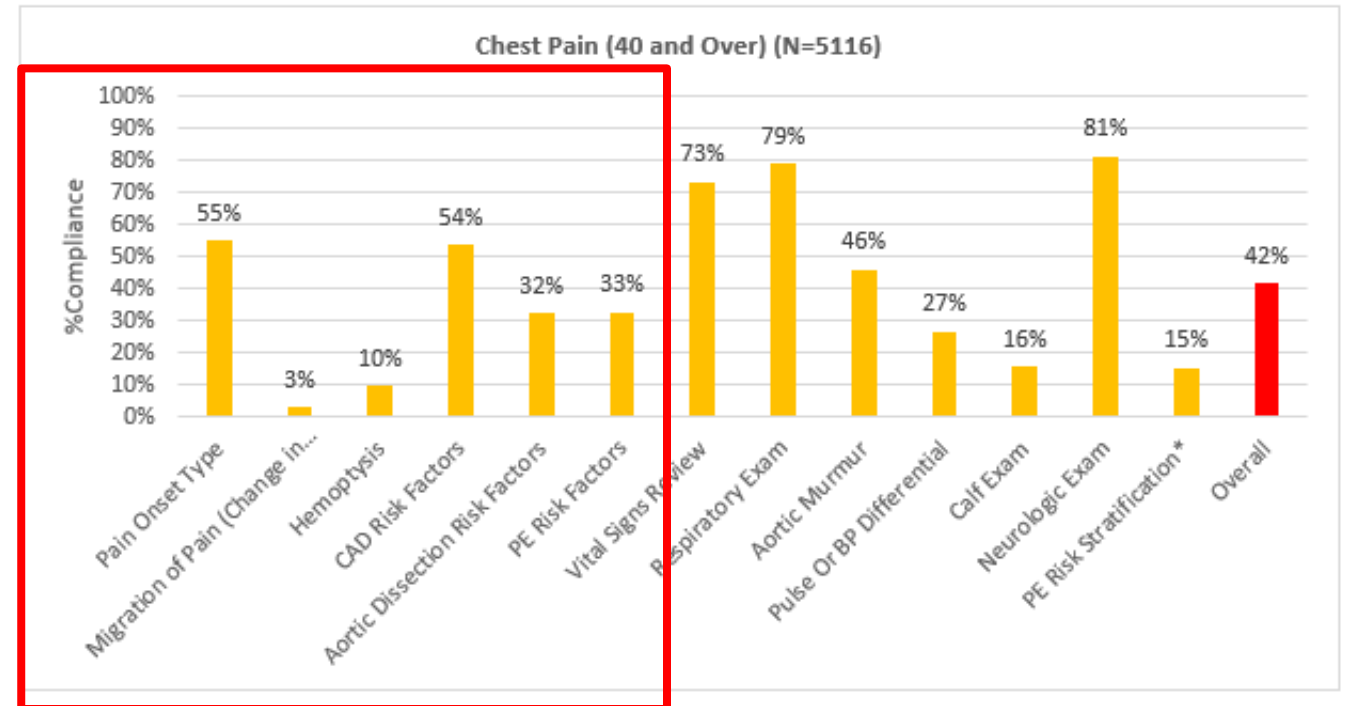


HPI = 34%

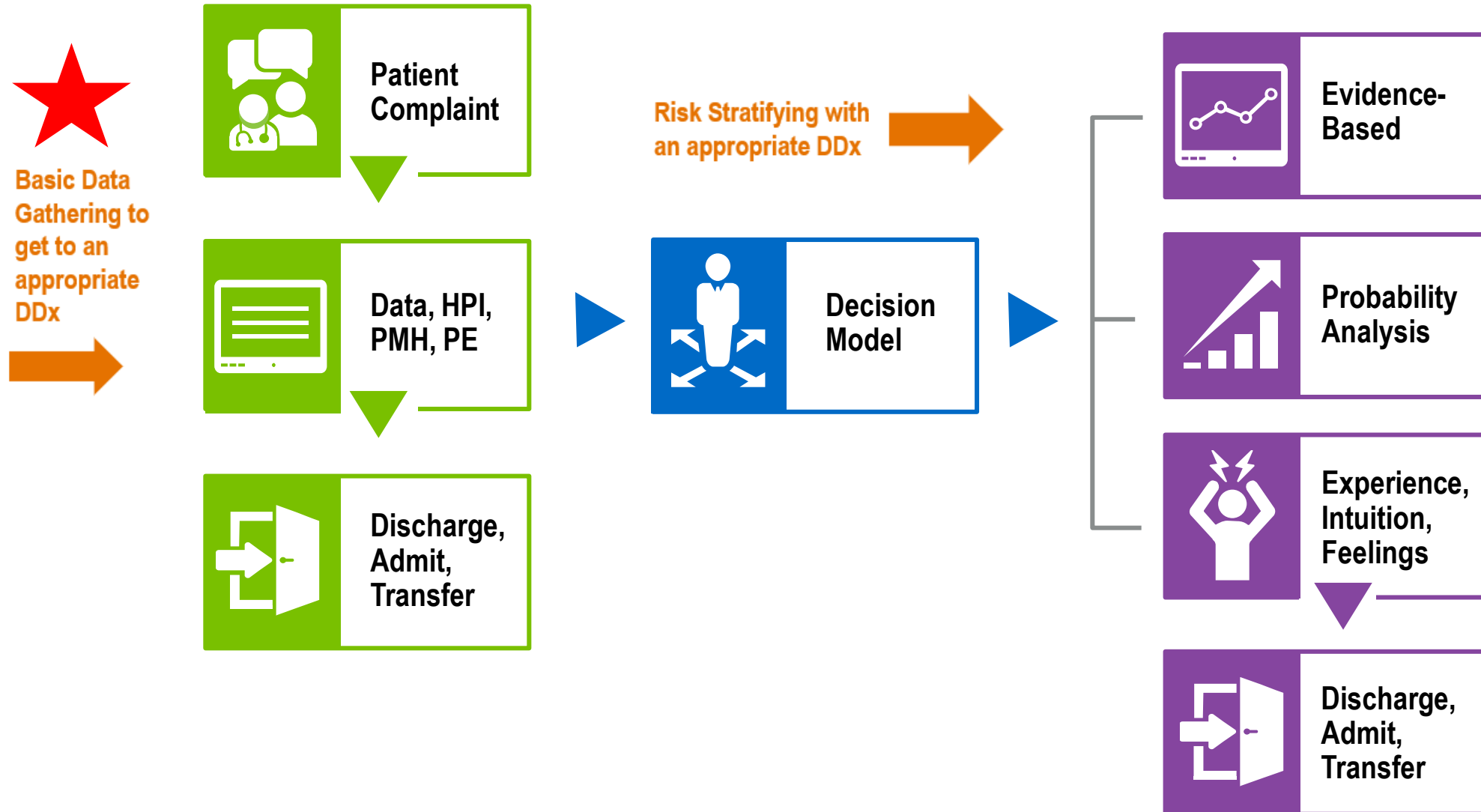
Chest Pain (40 and older) Documentation (n = 5,116 patients 16 hospital orgs) - Artificial Intelligence Analytics Program

<< CP > 40y

Chest Pain (40 and Over)				
ED Guidance	Documented			
	YES	NO	Total	%YES
Pain Onset Type	2,816	2,300	5,116	55%
Migration of Pain (Change in Loca	154	4,962	5,116	3%
Hemoptysis	487	4,629	5,116	10%
CAD Risk Factors	2,743	2,373	5,116	54%
Aortic Dissection Risk Factors	1,653	3,463	5,116	32%
PE Risk Factors	1,670	3,446	5,116	33%
Vital Signs Review	3,757	1,359	5,116	73%
Respiratory Exam	4,043	1,073	5,116	79%
Aortic Murmur	2,347	2,769	5,116	46%
Pulse Or BP Differential	1,365	3,751	5,116	27%
Calf Exam	802	4,314	5,116	16%
Neurologic Exam	4,157	959	5,116	81%
PE Risk Stratification*	268	1,492	1,760	15%
Overall	26,262	36,890		42%



HPI = 31%

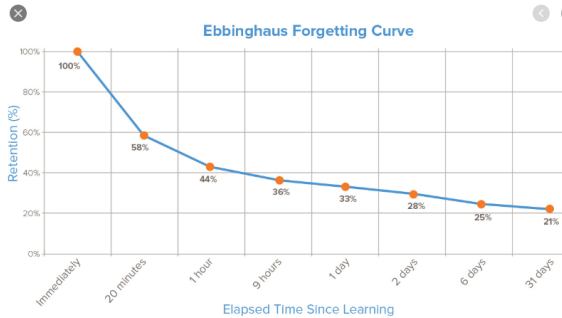


Current Risk & Safety Paradigm



Current Approach

Books, lectures and on-line training.



Problem

The human forgetting curve, recall ability and memory loss. Key information is not front of mind at the bedside.



Impact

Over decades the frequency of errors and claims is steady to rising. The cost of claims is currently rising dramatically.



Using AI

provides **conditional algorithms,**
checklists & decision support,
real-time during the patient encounter.

It Must Be

visually available &
comfortably in the
practitioner's **workflow.**

Christopher Ulrich [Visit Id: v0773112]



MRN: mrm0773113 Sex: Male Blood Pressure: 95/60mmHg
DOB: 8/15/1999 Height: 150 cm Pulse: 68
Age: 21 Weight: 70 kg Temperature: 38.0° C

dsullivan

Note Patient Summary Problems

Arial 12

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Save

Sign

Advisor

Ulrich, Christopher

MRN mrm0773113

Christopher Ulrich [Visit Id: v0773112]



MRN: mnn0773113 Sex: Male Blood Pressure: 95/60mmHg
DOB: 8/15/1999 Height: 150 cm Pulse: 68
Age: 21 Weight: 70 kg Temperature: 38.0° C



dsullivan



Advisor



Ulrich, Christopher

MRN mnn0773113

Note Patient Summary Problems



Arial

12

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00:00



Chief Complaint: []

History of Present Illness:

[]

Review of Systems:

[]

Physical Examination:

[]

Medical Decision Making:

[]

Impression: []

Save

Sign

Christopher Ulrich [Visit Id: v0773112]



MRN: mrm0773113 Sex: Male Blood Pressure: 95/60mmHg
DOB: 8/15/1999 Height: 150 cm Pulse: 68
Age: 21 Weight: 70 kg Temperature: 38.0° C



dsullivan



Note Patient Summary Problems



Arial

12



Chief Complaint: The patient is a 21-year-old male with a chief complaint of severe back pain.

History of Present Illness:

The patient states that his onset of pain has been gradual over the last few days, it is aching in character. There has been no movement of the pain; it has been steady in the same location. The mechanism of injury according to the patient was lifting furniture over the weekend. He has had no other accident or injury. The pain is located predominantly in the lumbar area. Patient denies incontinence.

Review of Systems:

[]

Physical Examination:

[]

Medical Decision Making:

[]

Impression: []

Save

Sign



Advisor



Ulrich, Christopher

MRN mrm0773113

1 ED Guidance

CME 34.0

Back Pain (18 to 39) Resources

Pain Onset Type

Sudden/Rapid | Gradual | Crescendo | Intermittent | Other

Mechanism Of Injury

Chronic Back Pain/Osteo | Lifting | MVA | Other |
Other Known Cause | [No Apparent Mechanism](#)

Location Of Pain

[Multiple Levels](#) | Lumbar | Thoracic | Cervical | Other

Migration Of Pain

No Migration | Upper to Lower Back | Upper Back to Abdomen |
Chest to Back

Fever By History

No History of Fever | History of Fever

Incontinence

No Incontinence | Recent Incontinence

Vital Signs Review

<document review of vital signs>

Fever On Exam

No Fever | Fever in ED

Back Or Spinal Exam

<document back exam>

Neurologic Exam

[Sensory](#) | [Motor](#) | [DTRs](#) | [Straight Leg Raise](#) |
[Cauda Equina Eval](#)

Summary

- The 'failure to diagnose' is overwhelmingly the single greatest risk issue in emergency medicine.
- Basic HPI, PE & MDM data gathering is at the root of the problem.
- One potential solution: AI carefully woven into the fabric of the EM experience can reduce medical error and the failure to diagnose.

