A Picture is Worth 1000 PCRs:

Telemedicine and Real-Time Data Movement from the Bedside Provide an Economic Justification for Community Paramedicine

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I'm not a medic nor a clinician (though I work with both daily)

When agencies nationwide tell me "EMS is a business," I feel like…

I was thrilled to see an old friend show up at a Pinnacle 2014 lecture:

"Anything that's worth doing is worth doing for money."

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But let's be serious and talk about "System Savings"

(…and their corollary, Accountable Care…)

And how they impact your organizations.

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"System savings" are essential...

Expenditure Savings Analysis (1)
Based on Medicare Rates

Community Health Program

Analysis Dates: **January 1, 2013 - December 31, 2013**
Number of Patients (2): **74**

Category	CHP 9-1-1 Transports to ED Base	Avoided	Savings
Ambulance Charge	$1,668	813	$1,356,084
Ambulance Payment (3)	$427	813	$347,151
ED Charges	$904	813	$734,952
ED Payment (4)	$774	813	$629,262
ED Bed Hours (5)	6	813	4,878
Total Charge Avoidance			**$2,091,036**
Total Payment Avoidance			**$976,413**
Per Patient Enrolled			**CHP**
Charge Avoidance			**$28,257**
Payment Avoidance			**$13,195**

FIREHOUSE WORLD

SOURCE: Matt Zavadsky, "Program Implementation: The '*How*' of MIH." Pg. 5. 4 March 2014

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But what about the loss of revenues?

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Savings don't keep lights (sirens) on.

$3B in Uncompensated Care
"Ambulance services provide an estimated $2.869 billion in charity and undercompensated care in the U.S. annually.

Yes, you read that right: The nation's ambulance services provide almost **$3 billion in care *every year* to patients but don't get paid** for it; that is more than half of what Medicare pays for our services ($5.2 billion)."

Troy Hagen, "The Value of EMS" (EMS World, 1 Sept 2012)

Consider California's proportion of annual loss:

About 10% of U.S. EMS transports per year
About 10% of $3 billion financial loss per year
About $300 million in "uncompensated care"

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BTW…"Savings" to WHOM Exactly?

www.healthit.gov/buzz-blog/health-information-exchange-2/health-technology-ems-aspr-launches

Health IT Buzz > Health Information Exchange > Health Technology and EMS: ASPR Launches Campaign to Improve Pre-Hospital Care

Health Technology and EMS: ASPR Launches Campaign to Improve Pre-Hospital Care

March 18, 2014, 9:46 am / Kevin Horahan / Senior Policy Analyst, and Tara Holland

Getting a complete and accurate picture of a patient's medical history is a challenge under normal circumstances, but it is even more difficult – and even more important – in an emergency. Take, for example, a fairly common occurrence: A woman falls and breaks her arm. Someone calls 9-1-1 and an ambulance arrives. An emergency medical technician (EMT) or paramedic provides treatment and transports her to the emergency department (ED) where she gets an x-ray and a cast. After leaving the ED, she follows up with an orthopedic surgeon and receives treatment from a physical therapist.

Each of these providers creates a record, and there's a pretty good chance those records are electronic. However, in many cases these systems aren't integrated – and for emergency medical services (EMS) it's virtually all cases – making it difficult to get a complete picture of the patient's medical history or health needs.

In early 2014, a summit on prehospital health info exchange was held just before "EMS Today."

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BTW…"Savings" to WHOM Exactly?

ASPR, HHS, and ONCHIT attended.
The one group that didn't was CMS.

Chief Bill Sugiyama asked (paraphrasing):
"You're asking us *not* to transport. Doesn't that mean we *lose* money?"

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What is the REAL IMPACT —economic, operational, clinical, financial— of Community Paramedicine?

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Untapped Value of Prehospital Data

Quality improvement, regional planning data are currently lost (using paper PCRs)

Public Health & Hospital Administration

- Population health tracking
- Regional resource utilization
- Delivery of care inefficiencies

Physicians, Payers & Accountable Care Orgs

- Readmission prevention – post-discharge follow-up
- Close the data gap between emergency and outpatient care

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Clinical Impact Difficult to Measure*

- Challenging to show causative relationships between individual patients + population metrics
- Current CP/MIH projects are being managed with the help of "jimmied-together" software systems
- Sustainability must be measured, but R-T field data capture and analysis are currently lacking

*Medical director of one of the county's largest cross-service EMS agencies, and a leading advocate for Community Paramedicine / Mobile Integrated Health. (By phone, 9/2/2014)

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What We CAN Measure (Very Well)?

PROFIT Happy Crews **Less Overtime** Patient Safety

ORGANIZATIONAL HEALTH

Reduced Recidivism **Less Waste** **Room in Your Budget** LEGAL SAFETY

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Innovation ≠ Sustainability

CP/MIH reimbursement is not an option now, so you *must* find a meaningful justification:

- What are fewer readmissions worth to my hospital?
- What is post-discharge care worth to my community?

Must economically and socially justify a third-party subsidy. (Next: from whom?)

Note that the appropriateness of the above choices will vary by organization.

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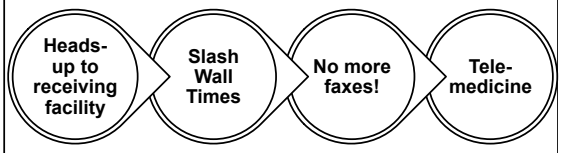
Scale + Savings = Sustainability

The key to scale is not building "toys" or implementing technology without a plan.

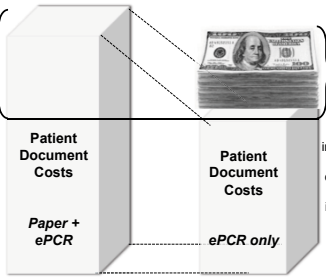


The key to scale is acquiring *meaningful* technology against measureable ROI.

Digital Data from CA Ambulances: Replace Paper, Save $6.5MM / Year

$6.5MM of current direct documentation cost can be saved by using digital records.

Expenses include: EMS labor associated with documentation (including overtime); administrative costs; paper and ink costs



Additional Revenue:

Collections made possible using ePCR that includes enhanced data and image capture, including telemedicine and insurance details.

Operational/Economic Justification

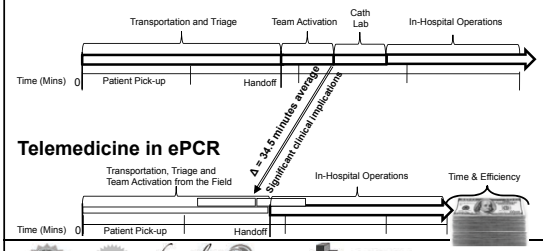
Cutting just 3.5 minutes from the time to digitize (i.e., re-type or scan and review) paper PCRs used in the field today **could save California $6.5MM+ per year**.

These are not clinical costs.

They are administrative waste. Wall times up to 3 hours. Faxes. Scanning. *Can't...read...scribbles...*

Telemedicine in Patient Care Record

Current: Typical STEMI Response – ED Non-Activated
(Paper-based Data Handoff *and* Nearly Half of Data Lost)



Telemedicine in ePCR

Economic Justification

Save **$22.54MM** by using prehospital technology to activate ED teams in STEMI/PCI cases.

STEMI patients represent just 1% of EMS transports in California.

Coordination, Notice and Tracking

Patient record *Capture*

Real-time data transfer *Use*

Patient Tracking *Lookup*

"Connected" Emergency Incident Response

- Emergency Response Teams
- Medical Personnel
- Patient's Family
- Company Management
- Legal, Political and Regulators
- Public Relations

Why Must EMS2020 Take So Long?



Patient record *Capture*

Real-time data transfer *Use*

Patient Tracking *Lookup*

"Connected" Emergency Incident Response

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- Legal, Political and Regulators
- Public Relations

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SOURCES:

Mahler SA et al. "Emergency Department Activation of Interventional Cardiology to Reduce Door-to-Balloon Time." *Western Journal of Emergency Medicine*. 2010 Sept; 11(4): 363–366.[Emphasis added]

Average Cost: Editorial by Alex Macario, MD, MBA. Stanford University School of Medicine. "What does one minute of operating room time cost?" *Journal of Clinical Anesthesia*. 2010. 22:233-236. http://ether.stanford.edu/asc1/documents/management2.pdf

SFGH Cost: "San Francisco General Hospital OR Efficiency Project Boosts Revenue." National Association of Public Hospitals and Health Systems. http://www.naph.org/Homepage-Sections/Explore/Innovations/Staffing-Strategies/San-Francisco-General-Hospital-OR-Efficiency.aspx

American College of Cardiology / CardioSource. "If You Have Chest Pain or Any Other Sign of a Heart Attack- Call and Ambulance!" [sic] http://www.cardiosource.org/en/News-Media/Media-Center/News-Releases/2011/04/STEMI-Ambulance.aspx

PCIs in CA Figure (2011 data): http://www.oshpd.ca.gov/HID/Products/PatDischargeData/ResearchReports/Hospipqualind/vol-util_indicatorsrpt/2011Vol.pdf

Number of STEMIs in U.S.: Contra Costa County STEMI System Performance Report (2010): http://cchealth.org/ems/pdf/stemi_0910_mtg.pdf

46,670 PTs requiring PCI intervention in CA, out of 2,300,000 EMS transport patients. Only 56% of PCI STEMI patients arrive by ambulance. http://www.oshpd.ca.gov/HID/Products/PatDischargeData/ResearchReports/Hospipqualind/vol-util_indicatorsrpt/2011Vol.pdf

Kleindorfer, Dawn et al. (2006). "Community Socioeconomic Status and Prehospital Times in Acute Stroke and Transient Ischemic Attack." *Stroke*. 37:1508-1513.

Talbot, Rhiannon and Anthony Bleetman. "Retention of Information by Emergency Dept Staff at Ambulance Handover: Do Standardized Approaches Work?" *Emergency Medicine Journal*. (2007) 24:539-542.

Calculations:

Avg. time savings x avg. hourly O.R rate

Avg. hourly OR. Rate x 0.575 (34.5 mins / 60) Time and cost per PCR assumes same cost for CA as in AZ

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At your service…

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EMS Technology Impact Overview

- Expected systemic impact to CA: **$29.04MM annually**
- Impacts two distinct care provider groups:
  - **EMS:** $6.5MM Reduced Documentation Expenses
  - **HOSPITALS:** Expected Range of Reduced Time, Costs

Low-cost hospital:	$16.14MM
Mid-cost hospital:	$22.54MM – *Conservative assumption for CA hospitals*
High-cost hospital:	$30.05MM

- **Impact range: $22.59 – $36.55MM per year**
  Activate EDs on STEMI/PCI calls, make patient intake more efficient, and lower EMS operational expenses.

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