



## EM CASES SUMMARY

### Episode 191 Future of EM – Systems Thinking

*With Drs. Aleks Chochinov & David Petrie*

Prepared by Anton Helman February, 2024

#### How did we get here? Historical background to help understand the present situation in EM

Recent history and the evolution of the specialty of Emergency Medicine within health care systems reveals **4 key pathologies**:

1. **Population–capacity misalignment** – with increasing and aging populations we have outstripped the capacity to take care of them
2. **Accountability failure** – each service/program has failed to be accountable for their patients with patients ending up in the ED because they have nowhere else to go in a timely manner
3. **Lack of readiness** – with most of our attention paid to efficiency rather than readiness/resilience, it is increasingly difficult for our system to handle surges in patients, pandemics and other disasters; we need to build in

capacity, safe redundancies and optionality in our health care systems

4. **Complexity creep** – our patients are getting sicker and more complex; patients that are categorized as low acuity are often high complexity

#### How best to define the scope Emergency Medicine

A core moral dilemma in EM is how to define the scope of Emergency Medicine. EDs should prioritize emergent and urgent care based on the definitions of all the EM governing bodies (essentially, the diagnosis and treatment of unforeseen and time dependent illness and injury).

If we are going to redesign an emergency care system, we have to understand what is the *purpose* of that system and what is the *role* of the system. We cannot be seen as the universal contingency for every other part of the system. We should review our ED usage, identify non-emergent populations that have the greatest impact on our bottlenecks to flow, and then negotiate the most appropriate alternative care options and care pathways for these patients. While we arguably should have a role as a “safety net” for some patients, we should not be the “safety net” for other specialties or sectors that are unable to fulfill their own mandates, be it through poor design, misunderstanding, or lack of accountability.

*“Counterbalancing the paradigm of sovereignty over closed borders with a common good approach, in which resources are equitably*

*allocated to those most in need—including those we have variously called boarders, orphans or refugees— will be a major step forward. If the ED is the wrong place to meet a given need, then the right place must be clearly defined, appropriately resourced, and accountable for managing all patients with that need – including those waiting for care”.*

## The 5 Spheres of the future of EM as part of the health care system: The Quintuple Aim



### Sphere 1: Coordinated mission

5 point purpose for a coordinated mission in our health care systems:

1. Improved patient satisfaction
2. Improved population health outcomes
3. Cost considerations – getting value for money invested

4. Robust and resilient workforce
5. Health equity

Patient satisfaction has to be balanced with health outcomes for the entire population, at a reasonable cost and in an equitable way. Sometimes the doctor patient relationship may need to suffer for the greater good of the community. While our Hippocratic Oath states “first, do no harm” to the *patient*, we need to consider “first, do no harm” to the *system* which indirectly impacts patient outcomes.

### Integration of care and improving access to primary care

A coordinated mission requires integration of care and improved access to primary care. We need:

- A culture of respect between specialties and programs ([A Culture of Respect Part 1, Part 2](#))
- To understand population needs and match them with specific services
- An independent public entity at arm’s length from government for health planning and design to reduce the impact of election cycles on health systems decisions
- To learn from other international health systems – which ones work well?
- Unified *digital health integration* and *direct-to-patient digital access*
- Leaders in EM need to be engaged in systems issues so that simplistic responses to complex problems are not relied upon and to encourage system innovation

- Coordinated relationships between the availability of same day/next day primary care, urgent care, and emergency care in system redesign
- The availability of on-call specialists in an integrated network of emergency care – both for *peer-to-peer virtual care* and through patient transport systems
- *Vertical integration* of programs: from the home, public space, roadside, or clinic to the ED, and then on through to surgery and/or admission and ongoing in-hospital care if necessary
- For patients with complex chronic care who contribute greatly to ED bottlenecks in flow, and may not be best served in the ED, we need *regionally rostered multidisciplinary primary care access* with *advanced access scheduling*

### Sphere 2: Optimizing access points

#### *First, determine the size of the workforce and match the workforce to need by size of population and location*

A single system with many access points generally operates more efficiently and with better results than multiple independent systems. In order to design an effective single system one needs to first assess the *size of the population*, the *distances between patients and their access to care*, and the *connections between access points*. Only then can the size of the required workforce be accurately determined.

#### *Second, evaluate current triaging systems*

There is a need to evaluate current triaging systems in terms of patient outcomes, improving access, diversion from EDs and cost.

Eliminating poor systems and developing ones with proven benefit would go a long way to improving access points for patients in a cost effective way.

### EMS and pre-hospital triaging strategies

- **Multi-option EMS** is an approach to ambulance trip destination alternatives for some low acuity patients. Virtual triaging, where patients get triaged directly to an on call non-EM specialist, a primary care physician or the ED with next day appointments may help to lessen the volume of non-emergency patients presenting to the ED. This can be thought of as “Choosing Wisely EMS”
- **Mobile Integrated Healthcare (MIH)** is patient-centered, mobile resources in the out-of-hospital environment. MIH components may include traditional EMS response, community paramedics, advanced practice provider (PA-C, NP) responders, 911 nurse triage lines, and alternate destination/ER diversion. The approach aims to deliver higher quality and more cost-effective medical care by coordinating resources and helping patients get the right care at the right location, including assisting them in taking better care of themselves in their own homes. Benefits include reducing unnecessary ED visits, reducing hospital readmission rates and saving time and money.
- **Reassessment on arrival at the destination.** With more time and information, is the ED still the best destination? Would an urgent treatment centre or same day/next day appointment at the patient’s primary care home be a better alternative?

- **Expanding the role of EMS** to include in home palliative care and in-home simple procedures such as suturing lacerations, thus preventing transport to the ED

### Sphere 3: Accountability

[Access block](#) is ubiquitous throughout the health care system. Accountability is the *evolutionary stressor* that allows programs to respond to demand and not be able to close their doors. Every specialty, hospital floor, medical program and medical service needs to be accountable for the system to work well. If there exists demand-driven accountability to a zone in which, for example, all renal patients from prevention to dialysis and beyond are looked after by that program, there would likely and predictably be less stress on EDs and improved patient outcomes.

Healthcare leaders should create *accountability measurement and reporting systems, monitor for care gaps* and *define performance measures* – this will inform how these are best addressed – through new capacity, enhanced efficiency or reallocation of existing resources.

#### Solutions to improve accountability include:

- **Demand-driven overcapacity protocols:**
  - Use of formal or informal overflow areas for either ED patients awaiting admission or inpatients awaiting discharge
  - Processes, protocols, and meetings (whether triggered by overcapacity conditions or maintained under all conditions) that govern assignment of patients to different areas

- Invest in alternate level of care – programs that keep older people at home
- Publicly report ED performance

[More on accountability with Dr. Grant Innes in Episode 129 ED Overcrowding & Access Block – Causes & Solutions](#)

## Sphere 4: Disaster preparedness

A disaster occurs when demand outweighs resources. We are currently in the midst of a chronic ongoing disaster. Thus, disaster preparedness can be thought of as a proxy for general system preparedness. The principles of [Disaster Medicine](#) should be applied even when there is not an acute disaster such as pandemic, natural disaster or war.

- There exists an increase in preventable deaths partially attributed to long ED patient waits
- Hospitals need to be ready for disasters with *surge plans*
- Practice and testing of *mock disasters* and surge plans in real disasters is essential for readiness and effectiveness during a disaster
- *Redundancy* built into our systems is essential during a disaster
- *Integration at a national level* will likely improve disaster preparedness

[More on Disaster Preparedness on Episode 100 Disaster Medicine](#)

## Sphere 5: Adaptation and evolution

Our world is constantly changing, and we need to be prepared for these changes as they are likely to impact our workforce and the way we treat patients.

- **A research network** in which researchers across the country and disciplines work in the same integrated network instead of in silos, including integrated data sharing.
- **EM providers embracing leadership roles in digital health** – digital health tools to help patients be more autonomous and look after their own care, make their own appointments and follow up, have their own results
- **Incorporating health policy and advocacy in medical school and EM training curriculums** – the 3 pillars of education include research, basic/clinical sciences and health system science; all 3 are required to practice high quality care in a modern health care system
- **Trends in JEDI** – Justice, Equity, Diversity and Inclusion are likely to impact the workforce and the way we treat our patients.
- **Climate change** – applying the principles of disaster preparedness to somewhat predictable events such as floods, forest fires and hurricanes

### *EM provider burnout prevention*

- “If we have resilient systems, we will have resilient EM providers”
- We need to appreciate each other by personally and publicly praising each other
- Positive reinforcement

- This helps to strengthen teams and develop a culture of *shared purpose*

### Quote of the month

*"We don't rise to the level of our goals; we fall to the level of our systems"*

-James Clear, author of the popular book Atomic Habits

### References

1. Chochinov, A., Petrie, D.A., Kollek, D. *et al.* EM:POWER: if not us, who? If not now, when?. *Can J Emerg Med* **25**, 11–13 (2023).
2. <https://caep.ca/empower-2/>
3. Kreindler S, Aboud Z, Hastings S, Winters S, Johnson K, Mallinson S, Brierley M. How Do Health Systems Address Patient Flow When Services Are Misaligned With Population Needs? A Qualitative Study. *Int J Health Policy Manag.* 2022 Aug 1;11(8):1362-1372.
4. Rivas J. Advanced Access Scheduling in Primary Care: A Synthesis of Evidence. *J Healthc Manag.* 2020 May-Jun;65(3):171-184.
5. Louras N, Reading Turchioe M, Shafran Topaz L, Ellison M, Abudu-Solo J, Blutinger E, Munjal KG, Daniels B, Masterson Creber RM. Mobile Integrated Health Interventions for Older Adults: A Systematic Review. *Innov Aging.* 2023 Mar 1;7(3):igad017. doi: 10.1093/geroni/igad017. Erratum in: *Innov Aging.* 2023 Jun 22;7(5):igad053.
6. Kreindler SA, Star N, Hastings S, Winters S, Johnson K, Mallinson S, Brierley M, Goertzen LN, Anwar MR, Aboud Z. "Working Against Gravity": The Uphill Task of Overcapacity Management. *Health Serv Insights.* 2020 Jun 12;13:1178632920929986.
7. Krishnamurthy S, Soltany KA, Montez K. Incorporating Health Policy and Advocacy Curricula Into Undergraduate Medical Education in the United States. *J Med Educ Curric Dev.* 2023 Jul 31;10:23821205231191601.