

Analysis of ED Diversion on STEMI Transports

Proposal: Create a new system whereby STEMI patients would not be subject to CVRC and/or ED diversion.

Rationale: STEMI is a very time sensitive condition where prolonged transport times that may result from CVRC diversion, which is currently tethered to general ED diversion, likely increase the potential for bad outcomes.

Question:

1) Is the time to treat adversely affected by our current policies and practices?

Evaluation:

1) We looked at an entire year (2025) of EMS transports (911 and non-911). Thankfully, we have both a large number of highly capable CVRC's (13) and relatively low diversion, which results in few cardiac patients that are affected by diversion and for those that were affected, the impact appears quite small.

In 2025, we saw 3442 patient transports directed to CVRC's. Of those, 427 were for STEMI and of those, 8 were subject to diversion and not transported to the nearest CVRC. Overall, there were 99 transports affected by CVRC diversion.

Overall Transport	Patients N=3442	Overall APOT
0:17:33	90th	0:10:49
0:10:30	Average	0:05:22
1:16:00	Max	1:58:10

Diversion Transport	Patients n=99	Diversion APOT
0:19:41	90th	0:11:19
0:12:45	Average	0:05:15
0:29:00	Max	0:36:23

STEMI Transport	Patients N=427	STEMI APOT
0:16:49	90th	0:09:12
0:10:06	Average	0:04:44
0:39:43	Max	0:36:07

STEMI Diversion Transport	Patients n=8	STEMI Diversion APOT
0:21:48	90th	0:04:27
0:14:02	Average	0:03:13
0:27:18	Max	0:05:01

It does not appear that our current policies and practices are causing any significant delay for our CVRC patients. Specifically, the 8 STEMI transports that went further due to diversion were received with APOTs shorter than the larger groups. Using 90th%, the transports are 5 min longer, but the APOTs are 5 min shorter, so that's a wash. Using Avg, the transport is 4 min longer and the APOT 1 min shorter, a delay of 3 min. We do not consider a 3 min delay to be significant.

In addition, our current policies support both A) transporting to the nearest when both the nearest and next closest CVRC's are both on diversion, and B) base hospital discretion to direct transport to the nearest when, for whatever reason, the patient is better served by that facility. These policies are used, which provides us with another comparison group, those patients who were directed to the nearest CVRC even though that facility was on diversion.

STEMI to Closed Transport	Patients n=25	STEMI to Closed APOT
0:17:56	90th	0:07:31
0:10:40	Average	0:05:16
0:24:04	Max	0:36:07

Using 90th%, the transports are 4 min shorter, but the APOTs are 3 min longer, for a delay of 1 min. Using Avg, the transports is 3 min shorter and the APOT 2 min longer, also a delay of 1 min. And importantly for considering individual patients, we had the longest APOT experienced by any patient in Orange County last year (>30 min) happen at a hospital that accepted the patient while on diversion.

Per our analysis it appears that when the longer APOT at the closed ERC's is factored in, there is no significant delay and potentially an increased likelihood that there will be an overall delay in time to treatment.