

March 12, 2018

Michael Ritter, MD, Chair
Emergency Medical Care Committee
County of Orange
405 W. 5th Street - Suite 301A
Santa Ana, CA 92701

RE: Comments on January 5, 2018 "The Orange County Trauma System: 2018"

Dear Dr. Ritter:

On behalf of Fountain Valley Regional Hospital & Medical Center (FVRH), we wish to submit these comments on "The Orange County Trauma System: 2018" (Report) issued by the Orange County Health Care Agency's Emergency Medical Services (OCEMS).

Fundamentally, we believe the County of Orange, and its over 3 million residents, will benefit substantially by increasing trauma and trauma center capacity. As you may know, FVRH is seriously contemplating moving forward to secure provisional Trauma Center II status for our hospital and discussed this initiative with OCEMS prior to its issuing the Report.

While we continue to review and analyze the Report, we wish to submit these initial specific comments and observations for two purposes. First, we are requesting we review in detail these and other concerns with OCEMS; and, second, following those discussions, enable OCEMS to respond and resolve any questions, concerns or deficiencies prior to the Report being formally considered or adopted by OCEMS or its advisory committees, including EMCC.

While our review with OCEMS will likely include additional issues, we offer the following observations and comments at this time:

Report Page 1: *"Reputable research (peer-reviewed) has supported an association with higher individual trauma center volume of trauma cases and better quality care when compared to low volume centers."*

Comment: This is correct; however there are also peer reviewed studies that did not find a correlation between volume and outcomes. For example, a meta-analysis published in Injury (Caputo et al, 2014) found 16 studies that examined the relationship between trauma center volume and mortality. High institutional volume was associated with at least somewhat improved mortality in 10 of 16 studies; however, nearly half of these studies found only some subpopulations experience benefits. In the remaining six studies, volume was not associated with any benefit.

Page 1: *"The absorption of a new trauma center would add excess capacity to the current system yet significantly draw volume from existing trauma centers."*

Comment: Trauma centers are diverting ambulances away from their emergency rooms and while it is understood that ER diversion does not always equate to Trauma diversion, there currently are times that trauma is diverted from the existing Level I and II centers, suggesting a lack of capacity.

Page 3: *"National standards for urban-area trauma cases is(sic) that victims arrive at a trauma center within a 30 minute transport time (Resources for Optimal Care of the Injured Patient, Committee on Trauma, American College of Surgeons, 2014)".*

Comment: Our team is unable to find this information in the resource document and requests a specific page number or reference.

Page 4: *"Research evaluating a single trauma center has suggested a bell-shaped curve exists with too small or too large a trauma case volume having a negative impact for outcomes (London JA, et al, 2002)".*

Comment: Our team is unable to locate this reference; however, a paper by the same author, published in 2003 in Journal of Trauma, found that hospital volume was not a good proxy for outcome. "Low-volume centers appeared to have outcomes that were comparable to centers with higher volumes".

Page 5: *"Trauma center case volume is conceptualized into three major categories"...*

Comment: There is another subset not mentioned which is non-activations that are admitted by the trauma service. Most of these are walk-ins or do not meet activation criteria from the field. This may explain some of the unexpected numbers in the data at the bottom of the page. The American College of Surgeons (ACS) allows hospitals to determine their activation criteria, and the National Trauma Data Standard allows hospitals to define 'admission'. That heterogeneous criteria may be why the Level II at Orange Global admitted 792 more patients in the data year prior to their site visit than the Level I at UCI. These variables make it difficult to draw volume and acuity conclusions for the data presented.

Page 6: *"All Orange County trauma centers are within volume and injury severity targets set by the American College of Surgeons".*

Comments: The ACS sets volume targets *only* for Level I centers. That number is 1200 admissions annually OR 240 admission with an injury severity score >15.

Page 8: *"While there are hypothetical arguments surrounding traffic delays within the County, current data fails to support a problem with prolonged transport times within the County".*

Comments: Current data may or may not support this statement; however, going forward and after reviewing information from the Orange County Transportation Authority (OCTA) and the California Department of Transportation (Caltrans), it is clear that the I-405 Freeway widening project, which has only just begun and which will last until at least December 2023, will trigger traffic delays. The project will certainly impact emergency transport times along the 16-mile corridor and includes the replacement of 18 bridges across this vital artery over which innumerable ambulances and other emergency vehicles will travel. We are verifying a Caltrans estimate that traffic time delays could average 30 minutes.

More importantly, with the exception of the trauma center at Mission Hospital, the other current trauma centers all lie north of the I-405, meaning all residents in the communities on the coastal side of the project will undoubtedly face the risk of delayed emergency transport.

March 12, 2018

Page Three

Page 8: "While considered an acceptable over-triage rate, it is likely that developing field trauma triage protocols that are more selective than the currently used national guidelines could reduce this 34.5%."

Comment: The ACS finds 25-50% over-triage acceptable but cautions that the trauma community should be more concerned about undertriage and the medical consequences that result from inadequate use of the trauma system. (American College of Surgeons Resources for Optimal Care of the Injured Patient, 2014, page 25.)

Overall, we believe that definitive conclusions cannot be drawn from the literature regarding optimal volumes for a survival advantage to be observed. While it is important to recognize that a minimum threshold is necessary to facilitate a hospital's ability to maintain the resources necessary for optimal trauma care, it appears, based on the data presented, that the three trauma centers serving primarily adults have more than adequate volume to support the addition of another trauma center. Therefore, based on the frequency of ER diversion experienced by the Level I trauma center, it seems that in spite of the center's dedication to the trauma program, its capacity to care for these patients is, at times, exceeded.

There are additional concerns with respect to the data utilized in the Report, including its completeness, consistency, and use of data over multiple (different) years. For example, we want to review in detail with OCEMS the calculations involving transport time as the Report states no area in Orange County are beyond the 30-minute transport time, yet we believe upon closer examination – by zip code – areas within Orange County may well fall outside the 30-minute window, especially when factoring in I-405 construction-induced delays for those communities referenced above.

This letter is intended to begin this hospital's dialogue with OCEMS and a detailed review of the Report. We remain fully committed to partner with OCEMS in the weeks and months ahead as we move to formally consider providing Orange County residents greater trauma and trauma surgery capacity; and, thank you for considering our view on these important matters.

Please do not hesitate to contact me at any time with any questions, comments or concerns.

Most sincerely,



Kenneth McFarland, CEO
Fountain Valley Regional Hospital & Medical Center

cc: Samuel Stratton, MD, Director, OCEMS
Peter Anderson, MD, Chair OCEMS Facilities Advisory Subcommittee
Whitney Ayers, Regional Vice President, HASC
Peggy Sale, RN, MSN, CEN, TCRN, Trauma Program Manager, FVRH

RECEIVED

MAR 07 2018

KPC
Healthcare, Inc.



March 5, 2018

Samuel J. Stratton, MD, MPH
EMS Medical Director
County of Orange
405 W. Fifth Street, Suite 301A
Santa Ana, CA 92701

Dear Dr. Stratton,

The Orange County Health Care Agency recently released a report regarding the current state of Orange County Trauma Services. I would like to take a moment to emphasize some of the findings from the report. There have been indications that additional health care systems are interested in providing emergency trauma services and qualifying for certain trauma designations that do not currently exist in Orange County.

Adding additional trauma centers to the OC EMS plan is not only unnecessary according to the study, it will actually lead to less effective trauma coverage for the region. Additional capacity is unneeded and will have the unintended consequence of reducing volume from all existing trauma centers. Any reduction in case volume would make it financially difficult to maintain current quality of care and would likely lead to an immediate loss of trauma service lines and eventual closure of current trauma centers.

Studies have shown that the projected population growth rate in Orange County is unlikely to increase to such a degree that additional trauma centers are necessary. Because of modest growth in population or additional population centers, all urban areas in Orange County remain able to access trauma services within the recommended 30-minute window, and current trauma center transport times average 13 minutes and a range between 5 and 22 minutes according to the OC EMS Report.

Statistics have shown that the three-adult/ pediatric trauma and one pediatric specific trauma designated facilities in Orange County fall well below the maximum number of trauma cases that industry guidelines recommend.

Based on the parameters established by the Orange County Emergency Medical Care Committee, hospital diversion is rare in Orange County particularly among the trauma designated facilities. If anything, the statistics show that some Orange County Emergency Departments are underutilized, and that diversion of care to hospitals like Chapman Global Medical Center should be carefully considered to reduce the already low diversion rates should the need arise.

As anyone who lives or works in Orange County, and as noted in the EMS report there are a number of factors (high costs for housing, limited land for development, high taxes, etc.) that act as barriers to increased population growth. The current population is adequately served by the current facilities, and the only risk comes from 1) diluting the system, and, 2) causing current systems to no longer offer trauma services.

As you review this important policy decision, please carefully consider the points that I have emphasized from the County's EMS report.

Sincerely,

Suzanne Richards, MBA, FACHE
System Chief Executive Officer, Healthcare Operations, KPC Health
Chief Executive Officer, Orange County Global Medical Center, Level II Trauma Center

CC: Richard Sanchez, Director, Health Care Agency, County of Orange



REGULATORY/ MEDICAL HEALTH SERVICES
EMERGENCY MEDICAL SERVICES

RICHARD SANCHEZ
DIRECTOR

STEVE THRONSON
DEPUTY AGENCY DIRECTOR
REGULATORY/MEDICAL SERVICES

DENISE FENNESSY
CHIEF OF OPERATIONS
REGULATORY/MEDICAL SERVICES

TAMMI McCONNELL MSN, RN
EMS ADMINISTRATOR

405 W FIFTH STREET, SUITE 301A
SANTA ANA, CALIFORNIA 92701
TELEPHONE: 714- 834-3500
FAX: 714- 834-3125

March 15, 2018

Kenneth McFarland, CEO
Fountain Valley Regional Hospital and Medical Center
17100 Euclid Street
Fountain Valley, CA 92708

**SUBJECT: COMMENTS ON JANUARY 5, 2018 "THE ORANGE COUNTY TRAUMA
SYSTEM: 2018"**

Dear Mr. McFarland:

This letter is to confirm receipt of a copy of the letter of March 12, 2018 regarding the above topic.

To provide a public forum for presentation of the issues brought forward in the letter, the topic of the Orange County Trauma System if being placed on the April 6, 2018 Emergency Medical Care Committee agenda. The emergency Medical Care Committee meeting will occur at 9:00 AM in the Commission Hearing Room of the Orange County Hall of Administration. You or your staff are welcome to participate in the discussion and to present the points brought forward in the March 12 letter.

I can best be reached by email at sstratton@ochca.com or telephone at 714 834 2824 for any questions or comments you may have.

With best regards,

Sam J. Stratton, MD, MPH
Medical Director, Orange County Emergency Medical Services

CC: Deputy Agency Director, Regulatory/Medical Health Services
Program Administrator, Emergency Medical Services
Chair, Emergency Medical Care Committee

SJS/#3202



REGULATORY/ MEDICAL HEALTH SERVICES
EMERGENCY MEDICAL SERVICES

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405 W FIFTH STREET, SUITE 301A
SANTA ANA, CALIFORNIA 92701
TELEPHONE: 714- 834-3500
FAX: 714- 834-3125

March 15, 2018

Suzanne Richards, MBA, FACHE
System CEO, Healthcare Operations, KPC Health
CEO, Orange County Global Medical Center
1001 N. Tustin Avenue
Santa Ana, CA 92705

SUBJECT: "THE ORANGE COUNTY TRAUMA SYSTEM: 2018"

Dear Ms. Richards:

This letter is to confirm receipt of your letter of March 5, 2018 regarding the white paper titled, "The Orange County Trauma System: 2018."

A number of letters have been received regarding the white paper. To provide a public forum for presentation of the issues brought forward in the letters, the topic of the Orange County Trauma System has been placed on the agenda of the April 6, 2018 Emergency Medical Care Committee that will occur at 9:00 AM in the Commission Hearing Room of the Orange County Hall of Administration. You or your staff are welcome to participate in the discussion and to present the points brought forward in the March 5 letter.

Please let me know of any questions or comments you may have. I can best be reached by email at sstratton@ochca.com or telephone at 714 834 2824.

With best regards,

Sam J. Stratton, MD, MPH
Medical Director, Orange County Emergency Medical Services

CC: Deputy Agency Director, Regulatory/Medical Health Services
Program Administrator, Emergency Medical Services
Chair, Emergency Medical Care Committee

SJS/#3203



CITY OF FOUNTAIN VALLEY

CITY HALL 10200 SLATER AVENUE FOUNTAIN VALLEY, CALIFORNIA 92708

THE OFFICE OF THE MAYOR
Website: www.fountainvalley.org

(714) 593-4403 FAX: (714) 593-4494
Email: fvproud@fountainvalley.org

March 28, 2018

Mayor:
Michael Vo

**Mayor Pro
Tem:**
Steve A. Nagel

**Council
Members:**
Cheryl
Brothers
John J. Collins
Larry Crandall

City Manager:
Rob Houston

Michael Ritter, MD, Chair
Emergency Medical Care Committee
County of Orange
405 W. 5th Street - Suite 301A
Santa Ana, CA 92701

RE: Additional Trauma Services for Orange County Residents

Dear Dr. Ritter:

I am writing in support of bringing additional trauma services to west and southwest Orange County and the assessment by Fountain Valley Regional Hospital and Medical Center to provide these critical services for Orange County residents.

Orange County has not added a new trauma center for almost thirty years and there is no doubt that many of the communities served by the hospital could benefit greatly with the addition of a new trauma center and related services. A new trauma center would help decrease transport times for those injured in our local community. This issue will become increasingly important as we face new traffic entanglements and delays associated with the multi-year I-405 construction project.

As a local leader and as a current member of this hospital's board of directors, I have watched this issue with great interest. Without question, it would be very timely that Orange County update its trauma system as part of our overall disaster management and response planning including for not only seismic considerations but also to ensure adequate capacity to respond to threats to the safety of the public.

Thank you for allowing me to express my views on this important matter.

Sincerely,

Michael Vo
Mayor
City of Fountain Valley

Cc: Samuel Stratton, MD, Director, OCEMS

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MAR 29 2018



FIRE DEPARTMENT

(714) 593-4436 Office

(714) 593-4508 Fax

10200 Slater Avenue, Fountain Valley, CA 92708
From the Office of the Fire Chief - Tony Coppolino

March 29, 2018

Michael Ritter, MD, Chair
Emergency Medical Care Committee
County of Orange
405 W. 5th Street - Suite 301A
Santa Ana, CA 92701

Re: Additional Trauma Services for Orange County Residents

Dear Dr. Ritter:

I am writing in support of Fountain Valley Regional Hospital and Medical Center's efforts to bring additional trauma services to west and southwest Orange County. With the I-405 freeway construction project looming, access to these critical services will be increasingly important to the residents of Fountain Valley and our surrounding communities.

Fountain Valley Fire Department is the primary pre-hospital care provider within Fountain Valley. For this reason, we must continually plan for any contingency and threat to the safety of the public. Sadly, such planning now takes us well beyond unforeseen natural disasters. Today, we face a new range of threats including acts of terrorism and other mass casualty events that require trauma hospital services.

Orange County's disaster and emergency response system would significantly benefit by expanding trauma and trauma surgery services within the county for the first time in almost three decades. During this time, Orange County's population, housing density and transportation infrastructure have all expanded, creating additional challenges to protecting and serving the public.

We are extremely supportive of doing whatever we can to both increase trauma services to the community in and around Fountain Valley, while also decreasing transport times for those in need of critical emergency trauma care. We are confident this hospital is more than capable of fulfilling the above stated obligations in the spirit of a public-private partnership.

We urge the County's emergency medical and planning leadership to support Fountain Valley Regional Hospital and Medical Center's efforts to ensure that all county residents benefit from having the collective and adequate capacity to respond to threats to the safety of the public. Not only will the residents in and around the hospital's service area clearly be better served, but the entire region's disaster and emergency safety net will also benefit.

Thank you for allowing us to express our views on this important matter.

Sincerely,

Tony Coppolino
Fire Chief

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APR 03 2018

cc: Samuel Stratton, MD, Director, OCEMS



CITY OF FOUNTAIN VALLEY

POLICE DEPARTMENT

10200 SLATER AVENUE • FOUNTAIN VALLEY, CALIFORNIA 92708-4736

Kevin L. Childe

(714) 593-4485 • FAX (714) 593-4453

Chief of Police

March 29, 2018

Michael Ritter, MD, Chair
Emergency Medical Care Committee
County of Orange
405 W. 5th Street - Suite 301A
Santa Ana, CA 92701

SUBJECT: Additional Trauma Services for Orange County Residents

Dear Dr. Ritter:

We are writing in support of Fountain Valley Regional Hospital and Medical Center's efforts to bring additional trauma services to western and southwest Orange County. With the I-405 freeway construction project looming, access to these critical services will be increasingly important to the residents of Fountain Valley and our surrounding communities.

From the law enforcement and emergency perspectives, we must also continually plan for any contingency and threat to the safety of the public. Sadly, such planning now takes us well beyond unforeseen natural disasters. Today, we face a new range of threats, including acts of terrorism and other mass casualty events.

Orange County's disaster and emergency response system would significantly benefit by expanding trauma and trauma surgery services within the County for the first time in almost three decades. During this time, Orange County's population, housing density and transportation infrastructure have all expanded, creating additional challenges to protecting and serving the public.

We are extremely supportive of doing whatever we can to both increase response times, while at the same time decreasing transport times for those in need of critical emergency and trauma centers; and we are confident that this hospital is more than capable of fulfilling those obligations in the spirit of a public-private partnership.

We urge the County's emergency medical and planning leadership to support Fountain Valley Regional Hospital and Medical Center's efforts to ensure that all County residents benefit from having the collective and adequate capacity to respond to threats to the safety of the public. Not only will the residents in and around the hospital's service area clearly be better served, but the entire region's disaster and emergency safety net will also benefit going forward.

Thank you for allowing us to express our views on this important matter.

Sincerely,

KEVIN L. CHILDE
CHIEF OF POLICE

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APR 03 2018

c: Samuel Stratton, MD, Director, OCEMS

April 3, 2018

Dr. Sam Stratton
Medical Director
Orange County Emergency Medical Services
405 W. Fifth Street, Suite 301A
Santa Ana, CA 92701

Re: Comments on The Orange County Trauma System:2018 White Paper

Dr. Stratton,

Thank you for the opportunity to comment on the Orange County Emergency Medical Services Agency ("OCEMSA") white paper entitled "the Orange County Trauma System: 2018. UCI agrees with many of the report's findings. We believe the Trauma System is mature and stable. We believe that trauma services are accessible throughout Orange County ("OC") and that transport times are well within national standards.

Also, UCI agrees with the report's conclusion that the current trauma centers serve the county well and there is little population growth anticipated to support the need for additional trauma centers. In addition UCI agrees that Ambulance Patient Off-load Times ("APOT") for the trauma centers are within normal ranges, though one hospital has excessive non-trauma ED diversion. Overall, it was a well written report.

At the Facilities Advisor Committee ("FAC") meeting on January 16, 2018, there was discussion concerning the possibility of an existing Paramedic Receiving Center ("PRC") applying for either a Level II or Level III Trauma Center designation.

As the Chief Executive Officer for the only Level I Trauma Center in Orange County, I have some additional thoughts and considerations which I would like you to consider as a potential application for an additional Trauma Center comes forward.

1. Patient outcomes - Adding additional trauma centers would likely have negative impact on the outcomes of OC residents. Our risk weighted trauma mortality at UCI versus other American trauma centers is 30% lower than national averages. Based on the volume of trauma cases at UCI last year, that could be interpreted as 74 OC residents saved per year over an average trauma center. Ultimately increased patient mortality is the most important risk of changing the current trauma system.
2. Trauma Panels - The fixed costs of creating a trauma center are very high. For example, every trauma center requires a panel of immediately available specialists to be on call at all times. To insure a complete panel of specialist, the costs can be hundreds of thousands of dollars per year. The cost for this service is spread out over the volume of patients seen. With less volume, the fixed costs for every patient will increase to the

facility as well as the public at large. Per the report, the volume of trauma patients is essentially fixed, so any increase in the number of Trauma Centers will increase per patient costs substantially. This will have significantly negative impact on the financial viability of each Trauma Center and will increase the cost of trauma care to patients.

3. Infrastructure - Each of the current Trauma Centers has a physical infrastructure which has been created to provide optimal tertiary trauma care. For example, at UCI, we spent over \$8 million to build 4 state-of-the-art trauma bays with a dedicated trauma CT scanner. Increasing the number of trauma centers would result in the underutilization of the scanner creating excess capacity in the system. The current physical infrastructure put in place was based on the fact that the system was going to continue to mature as it has for the past 30 years.
4. Optimal Care and Skills - To assure optimal care, each trauma center has recruited a large number of trauma specialized surgeons. At UCI we have recruited 10 academic Surgical Critical Care boarded trauma surgeons along with 7 trauma nurse practitioners to manage our trauma service. These investments were made to insure optimal trauma care as well as enhance the safety of the people of Orange County.
5. Research - As a Level I Trauma Center, there is a volume requirement for trauma related research. Decreasing patient volume, particularly the volume of significantly injured patients, would certainly decrease the ability to perform quality research.
6. Trauma Education - UCI is the centerpiece of trauma education in Orange County. As the only surgical training center in the county, our surgical residency is the main source of new surgeons for our over 3 million residents. These Surgical Residents struggle to attain the optimal number of trauma operations. More significantly, the trauma/surgical critical care fellowship is currently the largest source of new trauma faculty for all the TraumaCenters in OC and throughout Southern California. A fellowship in trauma and critical care requires a high volume of trauma cases.
7. Trauma and Military Readiness - UCI is near completion of an agreement with the Department of Defense (“DoD”) and the U.S. Navy to be a tertiary trauma training site. The trauma training will keep our military personnel ready for combat medical care. The mortality rate of our soldiers is very high during the first years of warfare unfortunately due to a degradation of trauma skills among existing military medical personnel. Keeping the large number of reserve and active duty military medical personnel in OC and Southern California current and experienced in trauma care is critical to their combat readiness. They have entered into this training agreement due, in large part, to our high trauma volume. We are also on the short list to become a national training site for the DoD. Decreasing our volume would certainly have a significantly negative impact on our ability to serve in that capacity for our military.
8. Level III Trauma Centers - Since the inception of the trauma system in OC in 1980, we have maintained only Level I and II Trauma Centers. A Level III Trauma Center does not have neurosurgical capabilities and has significantly lower requirements for quality of

care including delayed presence of the trauma surgeon and delayed operating room availability. In general, the Level III TC is reserved for rural areas without access to Level I or II TCs. It is easy to surmise that the small dense geography of Orange County should never allow the new precedent of a level III center. Currently no populated area in California allows for a Level III center.

In summary, the OCEMA report on the Trauma System provides an excellent overview of a mature trauma system. The County is to be commended for developing such a system over the past 30 years. The current system provides excellent patient outcomes and provides the residents with more than adequate access to trauma care. Based upon the report, any changes to such a successful system appear to not be warranted at this time.

Thank you for providing UCI an opportunity to comment on this report. If you have any questions, please contact me at (714) 456-7830.

Sincerely,

A handwritten signature in black ink, appearing to read 'R. Gannotta', with a stylized flourish at the end.

Richard Gannotta
Interim CEO
UC Irvine Health