

# LOS ANGELES FIRE DEPARTMENT



RALPH M. TERRAZAS  
FIRE CHIEF

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BOARD OF FIRE COMMISSIONERS  
FILE NO. 18-029

TO: Board of Fire Commissioners

FROM:  Ralph M. Terrazas, Fire Chief

SUBJECT: TIERED DISPATCH SYSTEM (TDS) UPDATE

FINAL ACTION:	<input type="checkbox"/> Approved	<input type="checkbox"/> Approved w/Corrections	<input type="checkbox"/> Withdrawn
	<input type="checkbox"/> Denied	<input type="checkbox"/> Received & Filed	<input type="checkbox"/> Other

## SUMMARY

On December 1, 2014, the Los Angeles Fire Department (LAFD) implemented a new emergency medical dispatch system called the Los Angeles Tiered Dispatch System (LA-TDS). The purpose of TDS was to improve the handling of emergency medical calls for service by improving and streamlining the 911 interrogation process. This new medical dispatch system replaced a commercially available off-the shelf dispatch system which could not be modified and tailored to best fit our deployment model and the needs of our community.

## RECOMMENDATION

That the Board:  
Receive and file.

## FINDINGS

The following enhancements have been implemented in TDS:

1. Integration of fully automated TDS software to interrogate callers and quickly process 911 calls.
2. Replacement of the spiral bound manual TDS card sets with a card tray that allows for the updating of individual Complaint Cards.
3. Automation with software of the Emergency Instructions that direct call-takers to provide life-saving care by bystanders prior to the arrival of Fire Department resources. This provides for consistent, accurate and timely instructions for CPR, choking, childbirth, drowning, and severe hemorrhage.

In keeping with the Department's goal of maintaining TDS, the software is now fully supported by the in-house Computer Assisted Dispatch (CAD) Support Team instead of an outside vendor. The Dispatch Manager, the Dispatch Quality Improvement Unit (DQIU), and the Medical Director continually monitor performance to enhance the system. There are currently 110 members of the LAFD with a TDS credential to work as an emergency medical dispatcher (EMD).

### TDS performance metrics

The original goals of this new dispatch system were to:

- (1) Improve dispatch efficiency
- (2) Decrease call processing time to time-critical patients
- (3) Improve call-taker recognition of cardiac arrest and rate of dispatch-assisted CPR

Regarding dispatch efficiency, implementing LA-TDS was immediately associated with an 8% decrease in the number of resources sent to low-acuity Basic Life Support (BLS) calls despite a 31% increase in low-acuity BLS incidents – saving the Department over 23,000 deployments in its first nine (9) months using the new system.

Critical under-triage of resources (dispatching BLS resources to critical Advanced Life Support (ALS) patients) decreased from 0.2% to 0.1% of incidents, and over-triage (dispatching ALS resources to low acuity, BLS patients) decreased from 40% to 34%.

LA-TDS also decreased call processing time for time-critical patients from an average of 84.4 seconds to 68.5 seconds, which is a 19% decrease.

Finally, LA-TDS improved dispatcher performance in the most time-critical prehospital emergency: out-of-hospital cardiac arrest, which is the most commonly used benchmark of EMS system performance.

Using LA-TDS, LAFD call-takers have achieved the following metrics for cardiac arrest incidents:

1. ↑ the rate of cardiac arrest recognition by 9%
2. ↓ the average time to cardiac arrest recognition by 31%
3. ↓ the average call processing time by 26%
4. ↓ the average time to provision of dispatcher-assisted chest compression CPR by 22%
5. ↑ the number of cardiac arrest patients getting immediate bystander CPR from 43% to 57% - the largest one year increase ever documented in a major U.S. city

### **CONCLUSION**

The LAFD has taken a significant step in improving fire department dispatch operations, emergency resource utilization, and patient care with the implementation of LA-TDS. LA-TDS has significantly improved and expedited care for the most critical patients in our city, while simultaneously improving dispatch efficiency to low acuity calls. Follow-up studies performed on a routine basis by the DQIU have demonstrated that these gains have been sustained over time, and to date LAFD is the only dispatch center in Los Angeles County tracking these metrics and using them for performance improvement and system enhancement.

Board Report prepared by Marc Eckstein, M.D., MPH, Medical Director, EMS Bureau Commander.