



Agenda Report

File #: 19-0045

AGENDA REPORT REQUEST FOR CITY COUNCIL ACTION

DATE: 1/16/2019

TO: Honorable Mayor and City Council Members

FROM: Fire Department

SUBJECT:

City Council consideration of a purchase order for Zoll Auto Pulse equipment in the amount of \$153,220.50 and General Fund appropriation of \$153,220.50.

RECOMMENDED ACTION:

That the City Council:

1. Approve the purchase of 10 Zoll AutoPulse Cardiopulmonary resuscitation (CPR) Units pursuant to Corona Municipal Code 3.08.140 (E) as Exceptions to Competitive Bidding - Non-Public Projects, the purpose of bidding is otherwise accomplished.
2. Authorize the Purchasing Manager to issue purchase orders to Zoll Medical Corporation in the amount of \$153,220.50.
3. Authorize the appropriation of \$153,220.50 from the unappropriated General Fund Balance-City Equipment Reserve, to the Fire Department's operating budget for the purchase of 10 Zoll AutoPulse CPR Units.

ANALYSIS:

The Corona Fire Department requests an exception to bidding pursuant to CMC 3.08.140(E) to approve the purchase of (10) new Zoll AutoPulse Units to improve Cardiopulmonary resuscitation (CPR) and cardiac arrest outcomes. The Zoll AutoPulse is the only device of its kind, automatically sizing the patient and providing circumferential compressions squeezing the patient's entire chest to improve blood flow to the heart and brain. All other units on the market utilize a simple piston driven compression foot to simply push straight down on the patient's chest which in clinical trials have been shown far less effective then circumferential squeezing.

The Corona Fire Department Emergency Medical Service (EMS) Division and EMS Technical

Advisory Group (TAG) have been in pursuit of increasing department CPR performance as well as up to date technology to improve service to our community in the form of improving survivability rates from Sudden Cardiac Arrest (SCA). As a department, we have initiated numerous measures to give our citizens the highest chances of survival. This spans from training as many potential bystanders as possible (Community CPR), providing alerts to potential CPR trained individuals in the event they are close enough to make a positive impact (Pulse Point), and maintaining crews that are trained in the most up to date and effective methods of delivering manual high-performance CPR. The next step is to acquire technology that aids in the consistent delivery of artificial perfusion when as it is impossible to provide manually. This next step is the Zoll AutoPulse which delivers more effective, circumferential compressions, continuously, even during movement and transport of the patient. The AutoPulse also aids in crew safety and decreases the risk of injury.

The Corona Fire Department responds to an average of 10 SCA per month and has achieved Return of Spontaneous Circulation (ROSC) at a rate of 47% in the 2017 calendar year.

Unit ID	Total # of Cardiac Arrests with Resuscitation Attempt	Total # of SCA where Transport was Warranted	Percentage of SCA where the patient was transported
Engine 1	29	20	69%
Engine 2	11	9	82%
Engine 3	16	12	75%
Engine 4	14	10	71%
Engine 5	6	4	67%
Engine 6	22	17	77%
Engine 7	9	7	78%
Total	107	79	74%

The 'Total # of SCA where "Transport was warranted" represents those patients who remained viable enough to continue resuscitation en-route to the hospital. This means compromised CPR performance during movement downstairs, through hallways, and in the back of a moving ambulance. 74% of our SCA patients would have benefited from this technology

74% of our patients show signs of viability warranting transport to the hospital but will be exposed to subpar CPR during movement and transport. Even the 47% with ROSC statistically have a 40% chance of relapse into cardiac arrest, meaning that the potential for further resuscitation efforts en-route to definitive care is high.

The three categories are Utstein, Asystole, and Return of Spontaneous Circulation (ROSC).

- Utstein - This measurement is widely used as a measurement of success on only the most viable patients. This includes a witnessed arrest, with bystander CPR and with shockable rhythms. Most SCA do not fall within this category, so it generally provides a very high percentage skewing the true stats.
- Asystole - These are patients who are traditionally considered to be the least viable patient or not viable at all. Rialto has determined that ROSC on these patients is achieved at an average of 26 minutes with use of the AutoPulse. Corona Fire Department personnel currently attempt resuscitation efforts for a minimum of 30 minutes.
- Return of Spontaneous Circulation (ROSC) - How often ROSC is achieved regardless of circumstance or rhythm.

Listed below are the most recent numbers we have obtained comparing ourselves to the Rialto Fire Department, who currently uses the Zoll AutoPulse.

	Rialto Fire Department	Corona Fire Department
Utstein	83%	58%
Asystole	39%	18%
ROSC	65%	32%

The AutoPulse allows for some other techniques to be used such as heads up CPR, which can only effectively be performed with an automated compression device. By elevating the patient's head and torso 30 degrees venous pressure is reduced allowing for increased blood flow to the brain and heart. Heads up CPR decreases Internal Cranial Pressure increasing coronary and cerebral perfusion pressures, allowing for greater oxygenation of the brain.

Multiple comparative studies have demonstrated improved vital signs because the AutoPulse drives superior blood flow, resulting in coronary perfusion pressure levels 33% higher than those of sternal compressions, positively impacting return of spontaneous circulation (ROSC) and survival.

POSITIVE IMPACTS

- Increased provider safety as it allows for rescuers to remain seated during transport.
- Allows for the delivery of continuous compressions during patient movement and transport.
- Delivers high quality circumferential chest compressions without the need for rotation of personnel or risk of rescuer fatigue.
- Allows rescuers to focus on other considerations and life-saving measures.

SHORTCOMINGS

- Cannot be utilized on all patients depending on age, weight, and SCA etiology. However, it can be used on the majority of SCA resuscitated.
- Initial startup costs for equipment.

The Zoll AutoPulse equipment utilizes "life bands" which are for one-time use and are disposable. The department anticipates purchasing 150 life bands per year at \$135 each, for a total of \$20,250. This figure will vary depending on actual usage of the equipment. The Zoll AutoPulse batteries have a life expectancy of approximately four years and currently cost \$890 each to replace.

COMMITTEE ACTION:

Not Applicable.

STRATEGIC PLAN:

This item supports the City's Strategic Plan Goal to Promote Public Safety: Protect our Residents and Businesses (b) ensure adequate funding for facilities and equipment needed to support timely delivery of fire services to our community.

FISCAL IMPACT:

Approval of the recommended actions will result in a budget appropriation of \$153,220.50 from the General Fund Balance's Equipment Reserve to the Fire Department's operating budget to purchase 10 Zoll AutoPulse CPR Units.

The City of Corona receives an annual distribution of ambulance fine monies from the Riverside County EMS Agency. The distribution is based on late response penalties charged to American Medical Response (AMR). The City's distribution for Fiscal Year 2017-18 was \$74,113.35. The estimate for Fiscal Year 2018-19 is \$79,107.15 and is included in the General Fund revenue estimates for the Paramedic Program. The combined total of the two years is \$153,220.50.

The purchase of the equipment will result in recurring annual costs of approximately \$20,250 for the replacement of the life bands (150 each x \$135). Batteries are anticipated to be replaced every four years with a cost of \$890 each. Future funding requests will be incorporated into the Fire Department's General Fund operating budget request during the budget process.

GENERAL FUND	
Budget Workshop May 23, 2018 - Estimated Revenue Over Expenditures	\$6,626,911
Previously approved budget adjustments (net)	<u>(5,524,609)</u>
Current Estimated Revenue Over Expenditures*	1,102,302
Appropriate \$153,220.50 to Fire's operating budget, reduce General Fund City Equipment Reserve by \$153,220.50. Net Fund Balance Impact \$0.	0
Revised Estimated Revenue Over Expenditures	\$1,102,302
Budget Balancing Measures Reserve - Estimated for 07/01/18	\$20,645,252
Estimated FY 2018-19 Change in Budget Balancing Measures	<u>1,102,302</u>
Budget Balancing Measures Reserve - Estimated Balance 06/30/19	\$21,747,554
<i>*Approved through Council Action or other operational process.</i>	

ENVIRONMENTAL ANALYSIS:

No environmental review is required because the proposed action is not a project governed by the California Environmental Quality Act.

Zoll AutoPulse



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REVIEWED BY: MICHELE NISSEN, ASSISTANT CITY MANAGER

SUBMITTED BY: DARRELL TALBERT, CITY MANAGER

Attachment: Zoll AutoPulse Quote - January 2019