



Assessing the Impact of Tele-ICU Presence at Rapid Response Calls in a Community Hospital

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Disclosures

**The authors have no industry relationships
or conflicts of interest to disclose**

Learning Objectives

After the presentation, the participant should be able to:

- **Discuss the role of ICU telemedicine in rapid response calls**
- **Describe the feasibility of ICU telemedicine participation in rapid response calls**



**CLEVELAND CLINIC
NATIONAL &
INTERNATIONAL
LOCATIONS**



VITAL STATISTICS:

2015 ANNUAL REPORT DATA FROM ACROSS THE CLEVELAND CLINIC HEALTH SYSTEM

PEOPLE:



3,432 PHYSICIANS AND SCIENTISTS

14,107 NURSES

49,166 EMPLOYEES

PATIENT CARE:

6.62 million OUTPATIENT VISITS

164,704 ACUTE ADMISSIONS

208,807 SURGICAL CASES

1,437 BEDS ON MAIN CAMPUS

4,362 BEDS SYSTEM-WIDE



RESEARCH & EDUCATION:



\$166 million GRANT AND CONTRACT REVENUE

\$104 million FEDERAL REVENUE

1,888 RESIDENTS & FELLOWS-IN-TRAINING

74 ACCREDITED TRAINING PROGRAMS



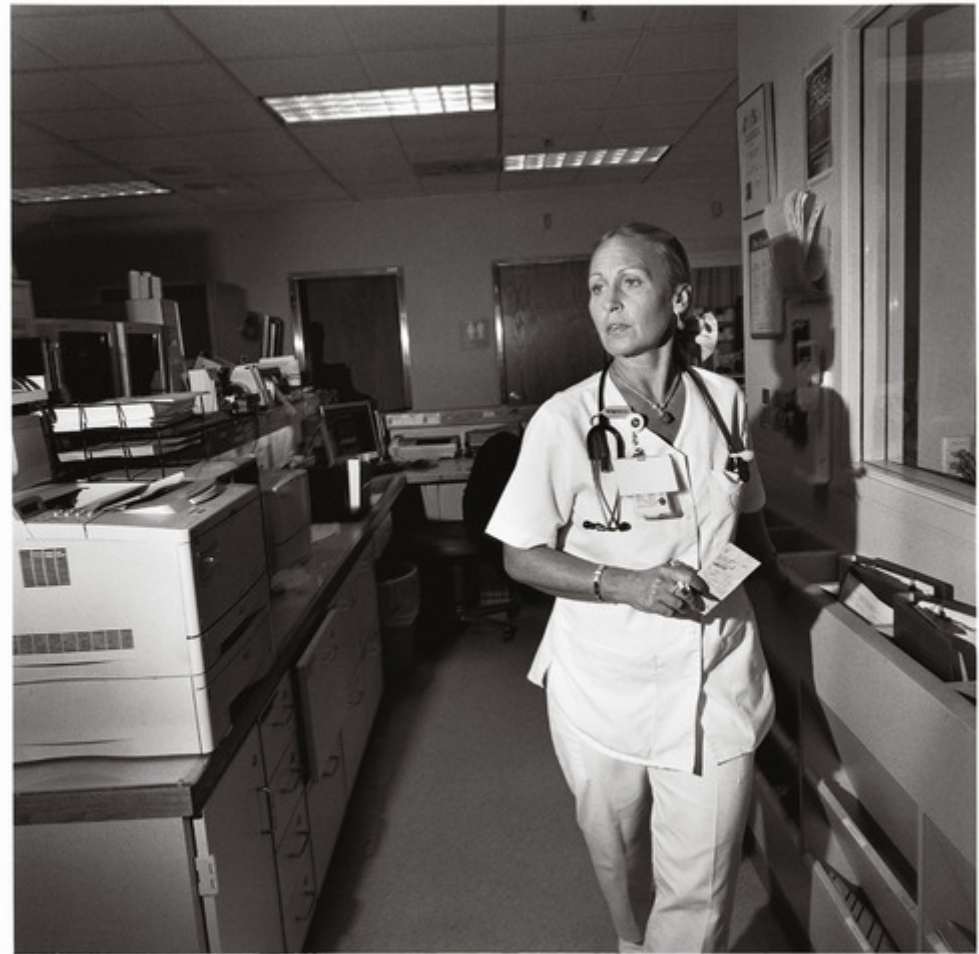
Cleveland Clinic

**Still #1 in heart care –
22 years in a row.**

Now the #2 hospital in the nation.

Introduction

Rapid Response Teams are currently used in 60% of hospitals in the United States (Salvatierra, 2014)



Introduction

- In 2014, A 488 bed community hospital reported over 200 Rapid Response Team calls between the hours of 1900 and 0700
- Rapid Response Team Structure
 - First and second year residents
 - Critical Care RN
 - Respiratory Therapist

In April 2014, a home-grown tele-ICU began providing nocturnal access to a critical care physician and experienced critical care nurses





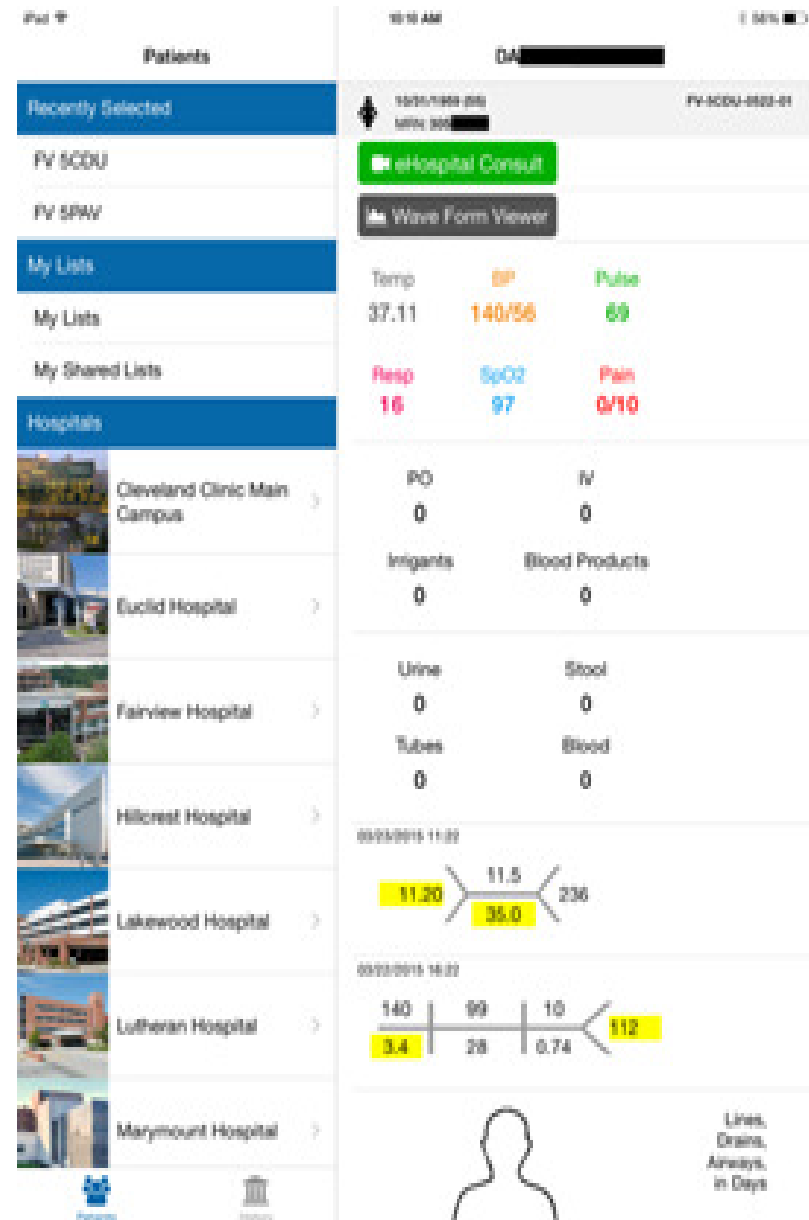
eHospital Rapid Response Pilot

- Provide remote consultation services to rapid response team activations
- Improve access to staff intensivists and experienced ICU RNs
- Expedite time between problem identification and intervention
- Improve patient outcomes

Institutional Benchmarks

- Response time <5 minutes from time of call
- Rapid response team with the patient <30 minutes
- Patient to remain on nursing unit > 50% of the time

eHospital Technology-based Solution

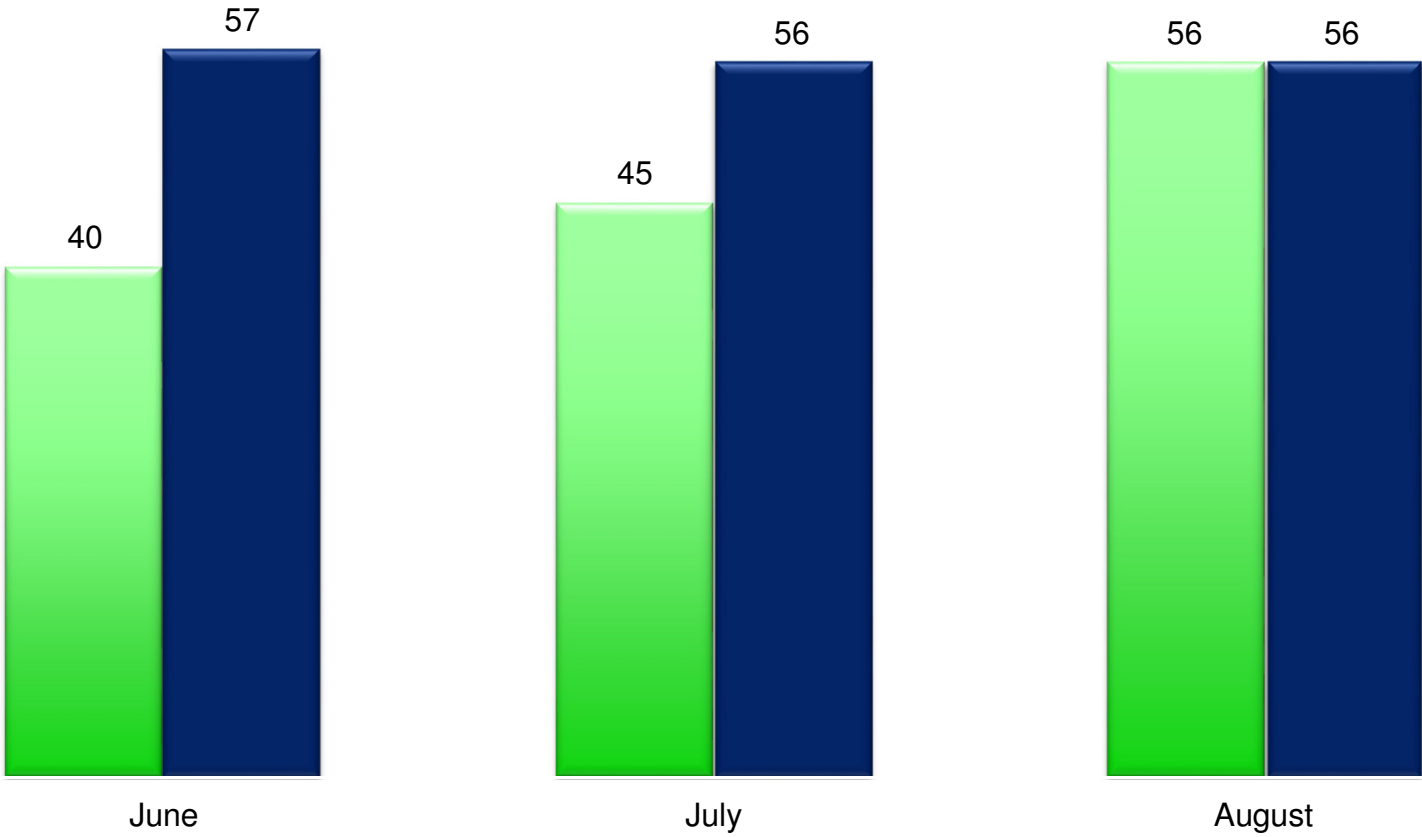


Pilot Structure

- eHospital was consulted on all non-obstetric Rapid Response calls during the hours of 1900 and 0700 for 90 days
- eHospital provided clinical supervision for all calls
- Clinicians were asked to complete a post-event survey

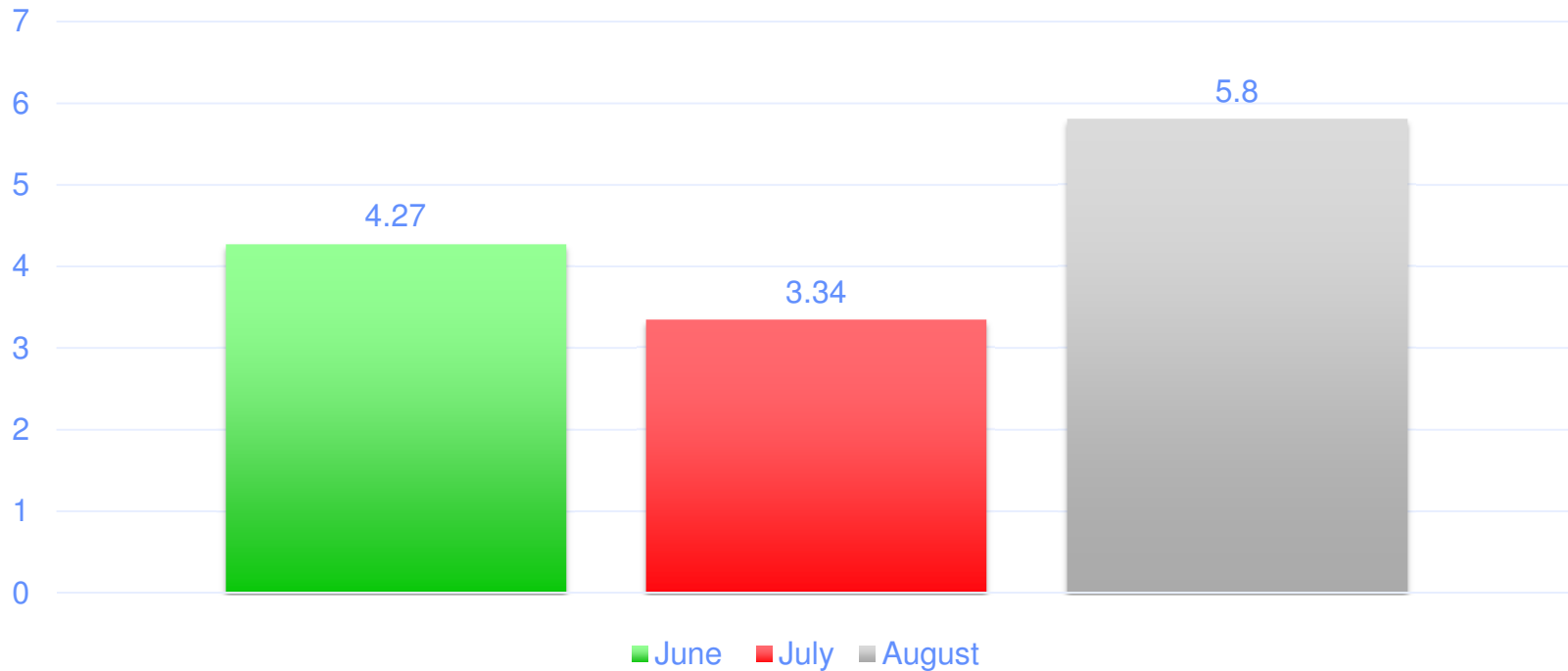
Rapid Response Calls, 2014 vs 2015

■ 2014, Control ■ 2015, Pilot



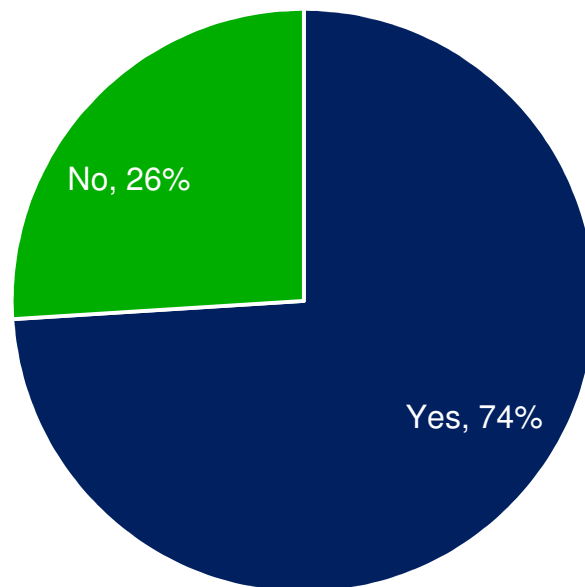
Perceived Value

I feel that eHospital brought value to the Rapid Response Call



A/V Quality

The Quality of the A/V was Sufficient to Provide Patient Care



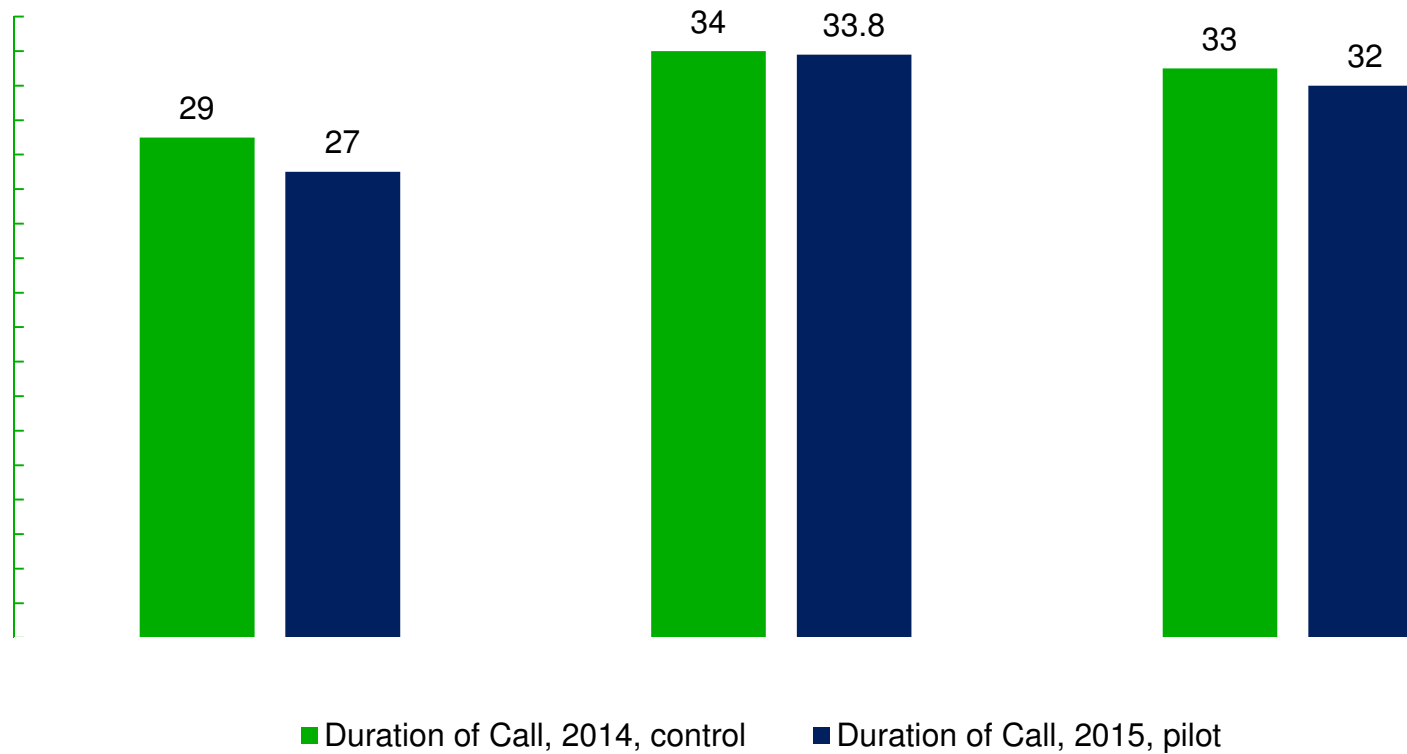
Feedback

- Identifying the need of an ICU bed, and managing acute issues quickly.
- Good teamwork throughout the rapid. Pt was code brain attack, was taken down to CT scan relatively efficiently.
- eHospital intensivist very helpful, good recommendations for appropriate dosages for patient, etc.
- Good communication and collaboration between resident and intensivist

Outcomes

- Time from initiation of call to arrival at the bedside increased by 0.3 minutes (18 seconds)
 - Benchmark: Response time <5 minutes from time of call
- Total time with the patient decreased by 1.6 minutes
 - Benchmark: Rapid response team with the patient <30 minutes
- 46% remained on the nursing unit (increased by ~8%)
 - Benchmark: Pt. to remain on nursing unit > 50% of the time

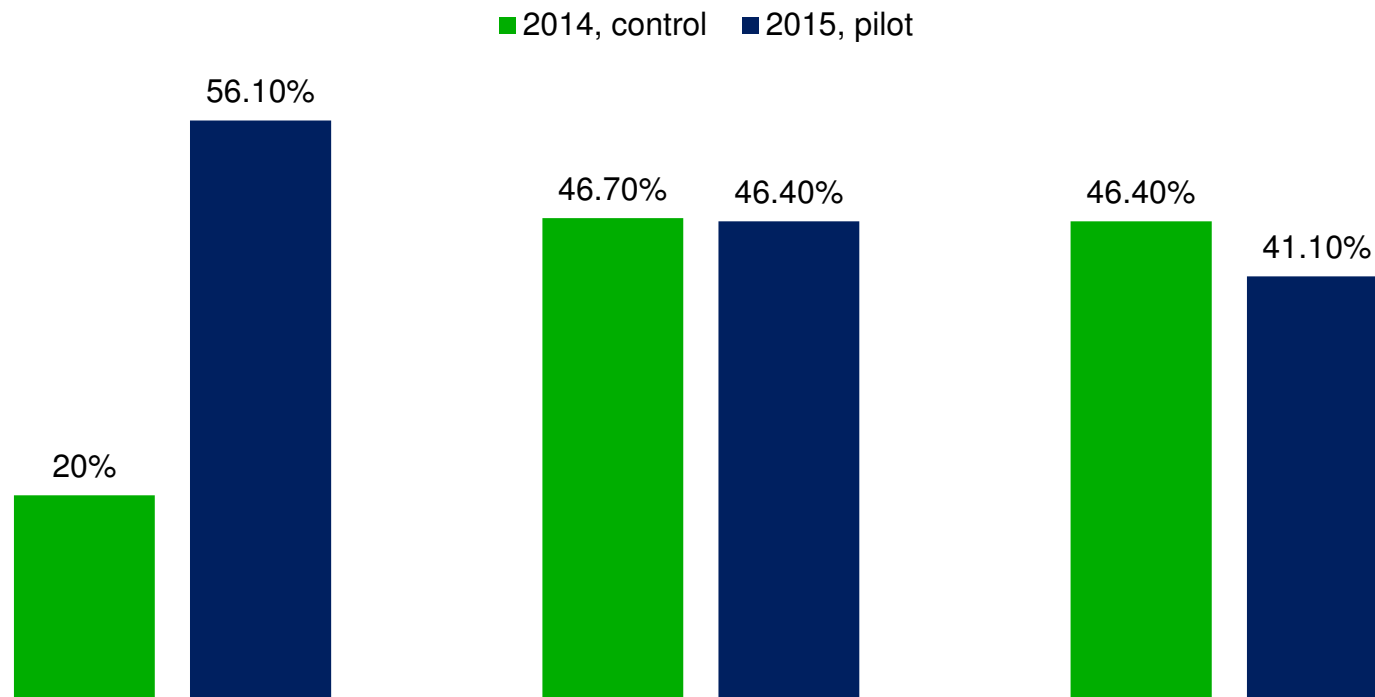
Duration of Calls



The average duration of calls decreased ($p < 0.01$)

Decreased Transfer to ICU

Percent of Patients who Remained on the Unit



Discussion

- A decrease in ICU transfers equates to a monthly savings of \$48,000
 - Average of 58 calls monthly
 - Estimated incremental cost between regular unit and ICU of \$3200

Conclusion

This pilot demonstrates feasibility of tele-ICU application to the Rapid Response strategy.

Use of tele-ICU to augment a Rapid Response Team may be associated with positive outcomes.





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Every life deserves world class care.