

57 YR OLD MALE

**1400 HR: 57 YR OLD MALE COLLAPSES
ON RACQUETBALL COURT**

**1402: CLUB ATTENDANT BEGINS CPR
(JUST TRAINED ONE WEEK BEFORE)**

**1403: CLUB AED RESPONDED AND ONE
SHOCK CPR CONTINUED AFTER SHOCK**

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**1410: FIRST RESPONSE BY BLS, CPR
WITH CARDIO PUMP AND ITD**

**1411: AED APPLIED WITH ITD/PUMP, 3
SHOCKS**

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1427: ALS QUICK TRANSITION TO LUCAS

1428: VF SHOCKED X 1

**1429: INTUBATED WITH VIDEO, CPR
CONTINUED**

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**1430 TO 1503: PT WITH CONTINUED
LUCAS CPR, ITD, PT RECEIVED 15
SHOCKS FOR REFRACTOR VF
MEDS TO INCLUDED EPI, AMIODARONE,
MAGNESIUM, FLUIDS**

INITIAL RHYTHM FOR ALS

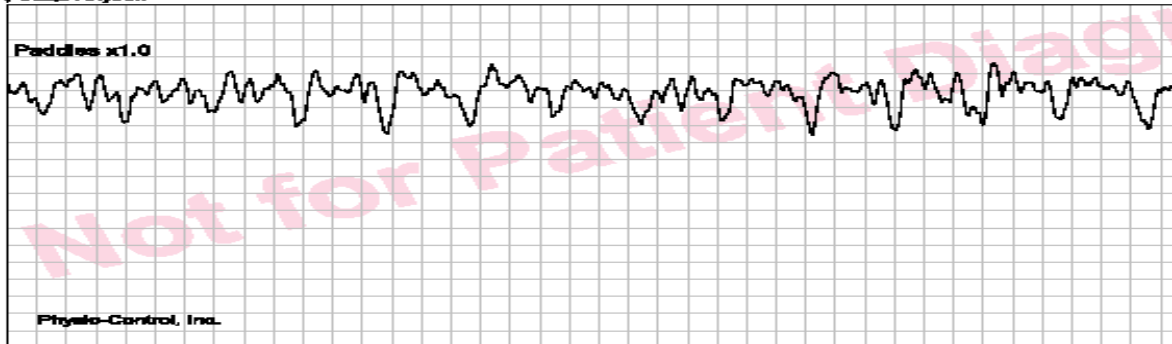
*Times have been adjusted by the system.

Initial Rhythm

Incident ID:	2015072408305900-LP154738 M5-A7	Device Type:	LP15
Patient ID:	2015072408305900-LP1538344738	Device ID:	LP154738 M5-A7
Patient Name:		Device Serial Number:	LP1538344738
Power On:	7/24/2015 06:30:57	Device Configuration:	2DH55RO40AB9OQ
Speed/Size:	25mm/sec / x1.0	Software Version:	3306808-005

Name:		Initial Rhythm	8:31:21 AM
ID:	072416063059		
Patient ID:			
Incident ID:			
Location:			
Age:	Sec		
7/24/2015			

Initial Rhythm



25mm/sec
ECG 1-30Hz Paddles 2.5-30Hz

LP154738 M5-A7 WHATCOM MED 1 3306808-005 LP1538344738

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1515: REFRACTORY VF-TRANSPORT

1535: TRANSFER TO ED/CATH LAB

1540: LUCAS ONGOING TO CATH

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**CATH LAB: PCI WITH 3 STENTS
VF STOPPED, WITH PERFUSING RHYTHM
POST PCI TRANSFERRED TO ICU**

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DAY 1: BALOON PUMP, AND TTM

**DAY 4: BALOON PUMP OUT AND PT
AWAKE SHORT TERM MEMORY LOSS**

DAY 5: MEMORY IMPROVING

DAY 9: HOME

Whatcom County EMS “the road to today”

**Marvin A. Wayne, MD, FACEP, FAAEM, FAHA
EMS Medical Program Director**



Whatcom County Washington State

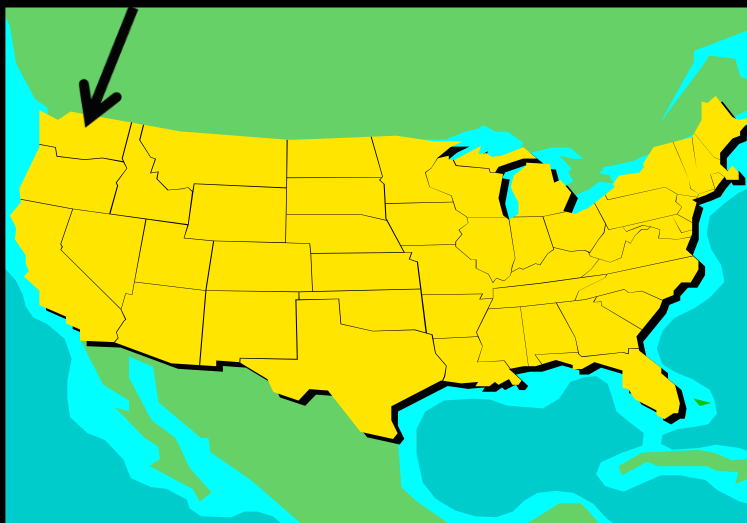
Most NW County in US

2200 Sq miles, 1 Island, and 1 non attached landmass

Population of 250K, with 105K City of Bellingham

Integrated City County EMS (4+ALS and 49 BLS)

Single 911 dispatch with operator assisted CPR



Background

North ⇒ Canadian Border



Background

East ⇒ Cascade mountains



Background

West ⇒ Bellingham Bay, San Juan Islands



Background

- South ⇒ Skagit County



Background



- Population 1974 ~ 90K(B'ham 35K)
- Population 2016 ~ 250K(B'ham 105K)
- 22K EMS runs/yr (65:35 BLS v ALS)
- 700 EMT/FR (50% volunteer)
- 40 paramedics
- One hospital, level I cardiac center, level II trauma center

Background

Hospital

- Level I cardiac center
- 24/7 cath lab
- ECMO (started 2016)
- Aggressive TTM program
 - Started 2008
 - Until today 840 pts
 - 42% home post TTM

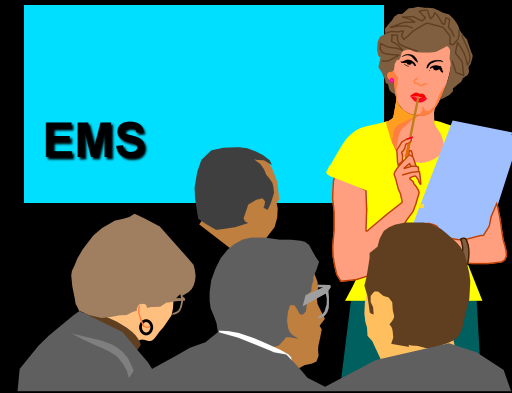


Background

Prior to 1974 EMS transport delivered by “pvt” ambulance service! July 74
OOB



Background



- **Challenge 1: How to operate?**
 - Parties came together with unique idea
 - City/County partnership (joint powers agreement)
 - Operating entity BFD, Now WCEMS
 - Cooperative response all fire districts and cities

Background

- **Challenge 2:How to fund?**
 - **1/4 from county,1/4 from city, 1/2 from user fees**
 - **Required annual appropriation city/county**
 - **Require establishment of billing service**
 - **Today we have a countywide funding levy, plus fee for service model**

Background

- **Challenge 3: What type of response?**
 - **Tiered response vs single level?**
 - **Who transports?**
 - **Different for city vs county?**
 - **City response: engine co. and medic unit-rationale**
 - **County response: fire district and medic unit-rationale**

Background

- **Challenge 4: What level of service?**
 - **All ALS, vs BLS/ALS**
 - **All ALS**
 - **Pros: you have what you need when you need it**
 - **Cons: cost of training, salaries, equipment, need**
 - **ALS/BLS**
 - **Pros: many calls don't need ALS**
 - **Cons: with long distances, if wrong dispatch now what?**
 - **If paramedic, how to fund and train?**
 - **Medical direction, hospital support**
 - **Who will train and how?**
 - **Alternative levels of care, ILS?**



Background

- **Challenge 5: Dispatch**

- **1974:**

- **Antiquated fire dispatch BFD, some county**
- **Multiple county numbers for each city etc.**

Totally separate law enforcement dispatch



Background

- **Challenge 5: Dispatch**
 - **1982-today:**
 - **Integrated Countywide 911 system**
 - **Single call receiver for all of City/County law enforcement, fire, EMS**
 - **Separate consoles but single system**
 - **All dispatchers EMT trained EMD certified**
 - **TELEPHONE CPR **Standard** of Care**
 - **Physician oversight of Dispatch Center**



Device use and progress

- Integrate new ideas with MPD, Ed committee, ED
- 2006-2012 ResQ Trial (pump ITD)
- Positive results
- Incorporated into System 2016
- LUCAS mechanical CPR, ALS, ED, Cath Lab
- Consider and implement direct to Cath Lab ?ECMO
 - Refractory VF (specific criteria) with LUCAS

Today



- **Integrated City/County EMS/ALS system**
- **Single dispatch center for fire/ems**
- **Funded through Countywide Levy + user fees**
- **All responses via EMD dispatch**
- **Strong emphasis on dispatcher involvement**
- **New EHR for documentation**
- **Data Collection (EHR, code stat)**

Results

- Response City Fr=4 min, ALS=6 min
- Response County Fr=7 min, ALS=10 min
- VF resuscitation rate to home ~18.2%
- Utsetine 42%
- Cares data all rhythms 14%
- AED's >1/1000, EMS, schools, gov't blds, recreational, industry, PDs
- SGA by FR

Tomorrow-Improvement

- **Must improve community CPR and Stop the Bleed training**
- **Get all AEDs in community mapped**
- **Get “Pulse Point” working, not just “there”**
- **More data to show what we are, and are not, doing**
- **Continue research to help ourselves and others**

Research

- Head-Up CPR, implement and evaluate
- IMMEDIATE 2 Trial (GIK for ACS)
- Work with Hospital to monitor TTM and results
- Always look at what we do, and how we can do better to

“Save Lives”



Questions?

