

Staffing and Productivity Metric for Perfusion

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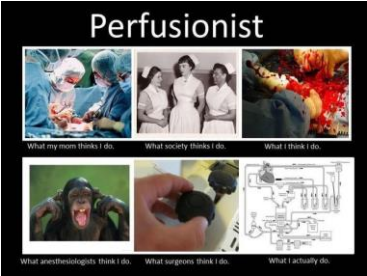
Conflicts of Interest

- I have no conflicts of interest on this topic



Perfusion Evolution

- Then:
- Operate HLM in the OR
 - IABP



New Age

- Now:
- Operate HLM
 - Hybrid Procedures
 - ECMO/ECLS
 - VAD
 - VV Liver Tx Support
 - IOAT
 - POC
 - Plt/BM sequestration
 - Thrombotic evacuation
 - TAVR
 - LLE
 - HIPEC/ILP
 - Intra/Extra Hospital Transport
 - Other



Original Article

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Staffing Issues at Open-Heart Centers Offering both Pediatric and Adult Perfusion Service: 1998 Survey Results

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Keywords: pediatric, cardiopulmonary bypass, specialization, survey

ABSTRACT

A survey directed to centers offering both pediatric and adult perfusion services was conducted to determine how pediatric cases were distributed among individual perfusionists in their departments. These centers were also asked what they believed the clinical activity level should be for a perfusionist each year to remain proficient in pediatric cardiopulmonary bypass. The questions were asked via e-mail and then followed up with telephone interviews as necessary.

One of the 108 centers contacted, 43 responded to the survey (43 North American, 2 European). Of the forty-three centers, forty-one provided both pediatric and adult perfusion services. Thirteen centers (30%) offered adult as well as pediatric perfusion services distributed the pediatric caseload to a select group of perfusionists. Nine centers (21%) distributed the pediatric caseload to the entire staff. From the respondents, the average minimum number of pediatric cases believed necessary to remain proficient in pediatric perfusion was 63.9 cases annually. Centers having additional pediatric perfusionists had a slightly higher

Discussed CPB caseload for adult/peds combined programs

How Do We Measure...

- Autotransfusion
- Standby
- Ancillary
- Competency Training/Simulation
- On Call
- Administrative

Not All Duties Created Equal

Relative Value (Case Equivalent)

- You Can Only Measure Things That Have a Value Attached to It
- Establish a Standard by Which All Procedures are Measured Against
- For UW the Standard is an Adult CPB procedure

Standard Procedure (CPB) Considerations

- Personnel
 - Time
 - Equipment
 - Expertise
 - Logistics
- CPB Procedure = 1 CE

How Do Other Procedures Measure Against CPB Procedure

- CPB Standby = 1
- Pediatric CPB = 2
- ECMO initiation = 1, Daily = 0.5, Shift 0.125/hr
- Autotransfusion = 0.5
- VAD Insertion = 0.5
- HIPEC = 0.5
- Misc = 0.25 – 0.5
- On Call, Inservice, Admin = 0 (built into CE)
- Actual Value vs. Standard Value

UW Health Data Collection

- Every Case Entered Into MSAccess DB
- Auto-generated Monthly Report
- Graphical Representations of:
 - CE per Month/Year
 - Average CE per Perfusionist
 - Event List
- Data collected prospectively since 7/2013 & retrospectively since 1/2007

Monthly CE Report

Perfusion Dept Case Equivalent Report
(Includes all UW, AFCH, and VA cases)

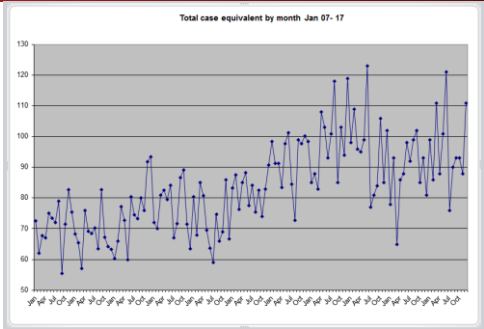
	2012	2014	2015	2016	2017
Total CE Count	900	1170	1184	1080	1116

By Month	2012	2014	2015	2016	2017
January	87	85	88	78	100
February	72	86	100	73	80
March	75	81	86	65	111
April	77	108	95	89	90
May	76	100	98	88	107
June	71	95	113	88	111
July	72	105	77	84	76
August	82	119	81	79	100
September	88	107	84	100	107
October	91	100	105	81	91
November	84	86	85	83	88
December	82	119	100	81	111

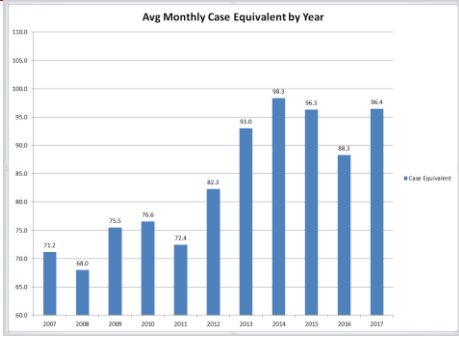
By Case Type	2012	2014	2015	2016	2017
CPB	87	124	119	108	108
CPB Standby	80	115	81	3	3
ECMO	17	146	84	63	148
Misc	15	75	51	72	84

Wednesday, January 23, 2017 Page 1 of 1

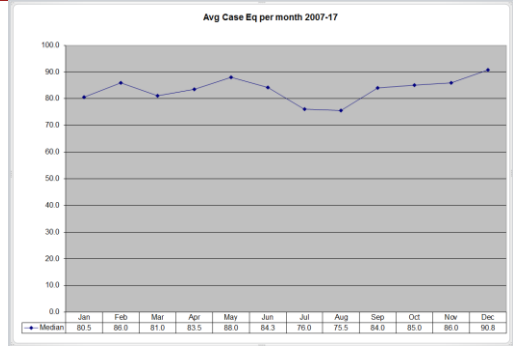
UW, AFCH, VA 2007-17 Data



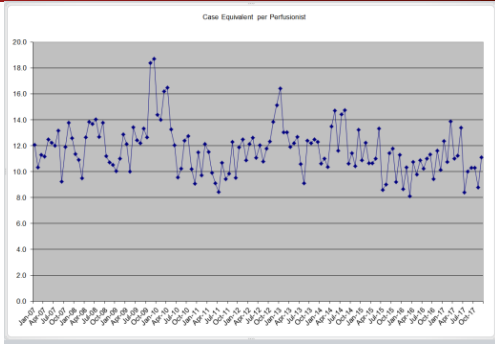
CE per Year



CE per Month



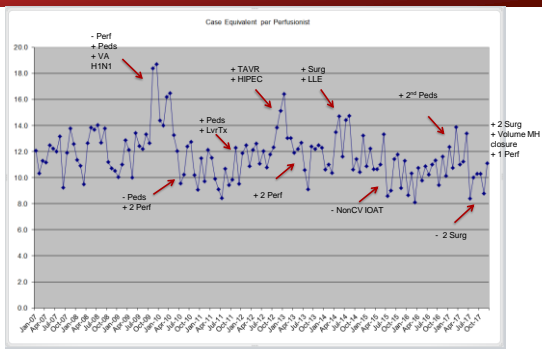
CE per Perfusionist



Events

Event	Value
Jan 15, 16, 17, 18, 19	
Jan 20, 21, 22, 23, 24	
Jan 25, 26, 27, 28, 29	
Jan 30, 31, Feb 1, 2, 3	
Feb 4, 5, 6, 7, 8, 9	
Feb 10, 11, 12, 13, 14	
Feb 15, 16, 17, 18, 19	
Feb 20, 21, 22, 23, 24	
Feb 25, 26, 27, 28, 29	
Feb 30, Mar 1, 2, 3, 4	
Mar 5, 6, 7, 8, 9, 10	
Mar 11, 12, 13, 14, 15	
Mar 16, 17, 18, 19, 20	
Mar 21, 22, 23, 24, 25	
Mar 26, 27, 28, 29, 30	
Mar 31, Apr 1, 2, 3, 4	
Apr 5, 6, 7, 8, 9, 10	
Apr 11, 12, 13, 14, 15	
Apr 16, 17, 18, 19, 20	
Apr 21, 22, 23, 24, 25	
Apr 26, 27, 28, 29, 30	
Apr 30, May 1, 2, 3, 4	
May 5, 6, 7, 8, 9, 10	
May 11, 12, 13, 14, 15	
May 16, 17, 18, 19, 20	
May 21, 22, 23, 24, 25	
May 26, 27, 28, 29, 30	
May 31, Jun 1, 2, 3, 4	
Jun 5, 6, 7, 8, 9, 10	
Jun 11, 12, 13, 14, 15	
Jun 16, 17, 18, 19, 20	
Jun 21, 22, 23, 24, 25	
Jun 26, 27, 28, 29, 30	
Jun 30, Jul 1, 2, 3, 4	
Jul 5, 6, 7, 8, 9, 10	
Jul 11, 12, 13, 14, 15	
Jul 16, 17, 18, 19, 20	
Jul 21, 22, 23, 24, 25	
Jul 26, 27, 28, 29, 30	
Jul 31, Aug 1, 2, 3, 4	
Aug 5, 6, 7, 8, 9, 10	
Aug 11, 12, 13, 14, 15	
Aug 16, 17, 18, 19, 20	
Aug 21, 22, 23, 24, 25	
Aug 26, 27, 28, 29, 30	
Aug 31, Sep 1, 2, 3, 4	
Sep 5, 6, 7, 8, 9, 10	
Sep 11, 12, 13, 14, 15	
Sep 16, 17, 18, 19, 20	
Sep 21, 22, 23, 24, 25	
Sep 26, 27, 28, 29, 30	
Sep 30, Oct 1, 2, 3, 4	
Oct 5, 6, 7, 8, 9, 10	
Oct 11, 12, 13, 14, 15	
Oct 16, 17, 18, 19, 20	
Oct 21, 22, 23, 24, 25	
Oct 26, 27, 28, 29, 30	
Oct 31, Nov 1, 2, 3, 4	
Nov 5, 6, 7, 8, 9, 10	
Nov 11, 12, 13, 14, 15	
Nov 16, 17, 18, 19, 20	
Nov 21, 22, 23, 24, 25	
Nov 26, 27, 28, 29, 30	
Nov 30, Dec 1, 2, 3, 4	
Dec 5, 6, 7, 8, 9, 10	
Dec 11, 12, 13, 14, 15	
Dec 16, 17, 18, 19, 20	
Dec 21, 22, 23, 24, 25	
Dec 26, 27, 28, 29, 30	
Dec 31, Jan 1, 2, 3, 4	

Events Over Time



Now What?

- Historical Data Provides Justification for Staffing Levels
- For UW “Sweet Spot” 11-13 CE/Perf/Mo
- Equivalent to 132-156 CE/yr
- 2007 – 6 FTE
- 2017 – 10.6 FTE
- 2019 – 12.6 FTE

Conclusion

- Data Driven Staffing Model
- Useful for Monitoring Multiple Duties
- Plan for Future Growth
- Subcategory examination (Adult/Peds)
- Easily Adjustable as Surgeons, Procedures, Program Expansion (Contraction) Occur
- Gives Value to Perfusion Productivity beyond “Pumping Cases”

Thank you