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# 10:05-10:20 Electronic Charting – Why do I need it?

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## Disclosure

- Employee of Biomedical Simulations, Inc.
- Consulting agreements with Terumo CVS, LivaNova, and University Hospitals Cleveland Medical Center

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## Electronic charting – Why do I need it?

You need electronic charting to:

- ✓ be able to reproduce the perfusion procedure in detail[1-3]
- ✓ improve the accuracy and frequency of your recording[5]
- ✓ free you to concentrate on safety and communication[4]
- ✓ provide detailed information for quality improvement projects[6]


1. Hankins T. Computer assisted bypass management. JECT 1980;12:95-10
2. Riley J. A Technique for Computer Assisted Monitoring in the Management for Total Heart-Lung Bypass. JECT 1981;13:171-178
3. Hayes RS. Computerized Data Acquisition and Data Management for the Open Heart Patient. JECT 1987;19:287-289
4. Homoelle L, McKelvey S, Riley JB, Olshove V. Comparison of Computerized Perfusion Electronic Records to Hand-Written Records During Cardiopulmonary Bypass in Children (Abstract). JECT 2006;38:86
5. Ottens J, Baker RA, Newland RF, Mazzone A. The Future of the Perfusion Record: Automated Data Collection vs. Manual Recording. JECT 2005;37:355-359
6. Stammers AH, Trowbridge CC, Pezzuto J, Casale A. Perfusion Quality Improvement and the Reduction of Clinical Variability. JECT 2009;41:48-58


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## Reproduce the CPB procedure in detail

- Answer queries from multi-disciplinary team members
- Capture critical events[2]
- Decrease response time to events[2]
- Legal documentation


1. Justison G. Is Timing Everything? JECT. 2017;49:13-18
2. Beck J, Fung K, Lopez H, Mongero L, Argenziano M. Real-time data acquisition and alerts may reduce reaction time and improve perfusionist performance during cardiopulmonary bypass. Perfusion. 2015;30:41–4
3. Mongero LB. Will Real-Time Monitoring Technology be a Game Changer for Perfusion Safety? JECT. 2017;49:19-24

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## Free the perfusionist up to concentrate on safety

- One pediatric study demonstrated an average of 20 minutes of the CCP's CPB time freed up to perform other duties[3]
- The use of compliance alerts improves CCP response time to critical events[2]
- CCP can focus on communication and attend to other team members[1-3]


1. Mongero LB. Will Real-Time Monitoring Technology be a Game Changer for Perfusion Safety? JECT. 2017;49:19-24
2. Beck J, Fung K, Lopez H, Mongero L, Argenziano M. Real-time data acquisition and alerts may reduce reaction time and improve perfusionist performance during cardiopulmonary bypass. Perfusion. 2015;30:41–4
3. Homoelle L, McKelvey S, Riley JB, Olshove V. Comparison of Computerized Perfusion Electronic Records to Hand-Written Records During Cardiopulmonary Bypass in Children (Abstract). JECT 2006;38:86


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## Improve the accuracy of your recording

- There are significant differences between arterial blood pressure recordings between hand records and automated records
- There is higher specificity and sensitivity in charting accuracy with electronic recording versus manual recording
- Dashboards: Intra-op and post-op analysis (AUC)


1. Homoelle L, McKelvey S, Riley JB, Olshove V. Comparison of Computerized Perfusion Electronic Records to Hand-Written Records During Cardiopulmonary Bypass in Children (Abstract). JECT 2006;38:86
2. Ottens J, Baker RA, Newland RF, Mazzone A. The Future of the Perfusion Record: Automated Data Collection vs. Manual Recording. JECT 2005;37:355-359
3. Steffens TG, Gunser JM, Saviello GM. Perfusion electronic record documentation using epic systems software. J Extra Corpor Technol. 2015;47:237–41.
4. Riley J, Justison G. Perfusion Electronic Record Documentation Using Epic Systems Software. JECT. 2015;47:242-244
5. Weir M, et al. Acute  Acute Kidney Injury following Cardiac Surgery: Role of Perioperative Blood Pressure Control. Amer J Nephol. 2011;33:438–452.

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# Provide information for CQI projects

- QI dashboards automatically generated area under curve (AUC)
- Strive for optimal perfusion: Goal Directed Perfusion
- Link intra-operative events and data to post-op outcomes


1. Stammers AH, Trowbridge CC, Pezzuto J, Casale A. Perfusion Quality Improvement and the Reduction of Clinical Variability. JECT 2009;41:48-58
2. Warren CS, DeFoe GR, Groom RC, et al. Variation in Arterial Inflow Temperature: A Regional Quality Improvement Project. JECT. 2011;43:58-63.
3. Blessing JM, Riley JB. Lean Flow: Optimizing Cardiopulmonary Bypass Equipment and Flow for Obese Patients—A Technique Article. JECT. 2017;49:30-5
4. Bronson SL, Riley J, Blessing J, Ereth MH, Dearani JA. Prescriptive Patient Extracorporeal Circuit and Oxygenator Sizing Reduces Hemodilution and Allogeneic Blood Product Transfusion during Adult Cardiac Surgery. JECT. 2013;45:167-172.
5. Groom RC. Is it Time for Goal Directed Therapy in Perfusion? J Extra Corpor Technol. 2017;49:8–12


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# To summarize: Electronic charting – Why do I need it?

- ♥ More granularity and detail
- ♥ Greater accuracy
- ♥ Safer, especially with alerts
- ♥ Generate QIP dashboards