A SIMPLE SOLUTION FOR CRT OPTIMIZATION.
Clinical Perspectives into QuickOpt Timing Cycle Optimization
**Simple Timing Optimization for More Effective Therapy.**

In one simple step, QuickOpt™ Timing Cycle Optimization provides IEGM-based AV timing optimization in CRT and ICD systems and VV timing optimization in CRT devices. Clinically proven to correlate favorably with conventional echocardiogram-based optimization methods, QuickOpt Timing Cycle Optimization can increase practice efficiencies and simplify patient management at a fraction of the time and cost.
Timing cycles do change over time.\textsuperscript{1, 2}

- Timing cycle optimization is your first line of defense for non-responders and your opportunity to improve the outcomes of patients who do respond to CRT therapy.
- There are several possible reasons optimization is not occurring as frequently as it should:
  a. Lack of clear ESC (European Society of Cardiology) and ACC/AHA (American College of Cardiology/American Heart Association) guidelines
  b. Typically reserved only for CRT non-responders
  c. Requires a skilled echo sonographer
  d. Coordination of clinical services
  e. Resource constraints (e.g., cost, time)

A study by O'Donnell, et al. demonstrates that timing cycles in CRT patients do change in optimal AV and VV delay over time in the total patient cohort.\textsuperscript{1}

Temporal variation in optimal VV and AV delays over the eight post-implant visits in the overall patient cohort. There is a significant reduction in LV predominance of the VV delay and a significant increase in optimal AV delay.

QuickOpt Timing Cycle Optimization is an IEGM-based method that recommends optimal AV and VV delays.

A clinical study in which Porciani, et al. assessed the effects of QuickOpt Timing Cycle Optimization on LV asynchrony and performance, as evaluated using real-time 3D echocardiography (RT3DE), supports QuickOpt Timing Cycle Optimization and CRT optimization.\textsuperscript{3} During follow up visits (9 +/- 8 months post implant), an echo test was performed before and after QuickOpt Timing Cycle Optimization of the AV and VV delays.

<table>
<thead>
<tr>
<th>Parameters</th>
<th>Pre</th>
<th>Post</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>$T_{\text{ms}6}$-SD (%)</td>
<td>3.1 ± 4.2</td>
<td>2.0 ± 2.9</td>
<td>ns</td>
</tr>
<tr>
<td>$T_{\text{ms}12}$-SD (%)</td>
<td>6.0 ± 5.7</td>
<td>3.0 ± 3.7</td>
<td>0.01</td>
</tr>
<tr>
<td>$T_{\text{ms}16}$-SD (%)</td>
<td>8.1 ± 4.9</td>
<td>4.2 ± 4.0</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>EXCg (mm)</td>
<td>3.4 ± 1.6</td>
<td>4.0 ± 1.1</td>
<td>0.02</td>
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<tr>
<td>EDV (mL)</td>
<td>210.1 ± 76.2</td>
<td>218.8 ± 84.7</td>
<td>ns</td>
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<tr>
<td>ESV (mL)</td>
<td>153.7 ± 72.9</td>
<td>153.4 ± 74.9</td>
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<tr>
<td>SV (mL)</td>
<td>56 ± 16</td>
<td>64 ± 18</td>
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<tr>
<td>EF (%)</td>
<td>29.4 ± 11.4</td>
<td>32.4 ± 11.1</td>
<td>&lt;0.001</td>
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<tr>
<td>FT/RR</td>
<td>0.45 ± 0.08</td>
<td>0.48 ± 0.07</td>
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<tr>
<td>ET/RR</td>
<td>0.29 ± 0.04</td>
<td>0.31 ± 0.04</td>
<td>0.02</td>
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<tr>
<td>MPI</td>
<td>0.82 ± 0.30</td>
<td>0.72 ± 0.31</td>
<td>0.001</td>
</tr>
</tbody>
</table>

$T_{\text{ms}6}$-SD: standard deviation of the time to minimal systolic volume for 16 segments.
$T_{\text{ms}12}$-SD: standard deviation of the time to minimal systolic volume for the six basal segments
$T_{\text{ms}16}$-SD: standard deviation of the time to minimal systolic volume for the six basal and six mid segments

QuickOpt Timing Cycle Optimization suggested delays that resulted in a decrease in LV dyssynchrony and an improvement in LV systolic function.

Essential

Regular optimization with QuickOpt™ Timing Cycle Optimization can improve patient outcomes by recommending optimal AV and VV delays.
A study by Baker, et al. compares IEGM methods and echocardiogram for cardiac resynchronization therapy in heart failure patients and dual-chamber ICD implants. QuickOpt Timing Cycle Optimization provides a reliable and simpler alternative to standard optimization techniques and has been clinically proven to correlate with echo-based optimization techniques.

Effective

QuickOpt™ Timing Cycle Optimization is clinically proven to correlate with more time-consuming echo-based methods. It can be used for all St. Jude Medical CRT device recipients at implant or follow up.

Conclusions

QuickOpt Timing Cycle Optimization provides a reliable and simpler alternative to standard optimization techniques.
QuickOpt Timing Cycle Optimization optimizes AV and VV intervals for responders and non-responders in about one minute.

QuickOpt Timing Cycle Optimization simplifies optimization with the push of a button.

**Efficient**

QuickOpt Timing Cycle Optimization optimizes AV and VV intervals for responders and non-responders in about one minute.

**Conclusions**

QuickOpt Timing Cycle Optimization can increase practice efficiencies and simplify patient management at a fraction of the time and cost of echo-based optimization methods.
St. Jude Medical is focused on reducing risk by continuously finding ways to put more control into the hands of those who save and enhance lives.