Continuing Medical Implementation
Bridging the Care Gap

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Cardiac Resynchronization Therapy

The normal heart beats in sequence from the upper chambers (atria or filling chambers) to the lower chambers (ventricles or pumping chambers). Normally the ventricles beat in synchrony, that is, at the same time. By doing so, maximum force is generated to push blood from the right ventricle to the lungs and from the left ventricle to the body. In some patients with heart failure, electrical activity is delayed within the left ventricle. This creates a loss of synchrony. The ventricles are not beating together and their pumping efficiency is reduced.

Cardiac Resynchronization Therapy uses a special pacemaker to restore cardiac synchrony. Electrical leads are placed both within the right ventricle (the usual site of a ventricular pacemaker lead) and the left ventricle via one of the coronary veins. Electrical impulses are delivered to both ventricles simultaneously thus restoring cardiac synchrony, improving cardiac output and reducing symptoms of congestion and low cardiac output.

Cardiac Resynchronization Therapy is not appropriate for all patients with heart failure. Patients who benefit the most are those with moderate to severe symptoms despite optimal medical therapy (NYHA Class III-IV), reduced ejection fractions (LVEF < 35%), delayed electrical activation of the left ventricle evidenced by a widened electrical QRS complex on ECG (QRS duration 0.12-0.14 seconds or greater with a pattern of IVCD or LBBB) or patients who already have a pacemaker implanted in the right ventricle to guard against bradycardia (excessive slowing of the heart).

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