The Edwards SAPIEN 3 transcatheter heart valve was approved by the US Food and Drug Administration (FDA) in June 2015. The SAPIEN 3 valve is indicated for patients who have symptomatic heart disease due to severe native calcific aortic stenosis (AS) and who have been determined by a Heart Team to be at intermediate or greater risk for open-heart surgery. In June 2017, the SAPIEN 3 valve was also approved for use in valve-in-valve procedures for patients at high or greater risk for subsequent open-heart surgery to replace their bioprosthetic valve. It is the only valve approved for this use in both the aortic and mitral positions.

The SAPIEN 3 valve builds on the Edwards SAPIEN valve platform with advanced design improvements, including an outer fabric sealing skirt, low-profile access, and open-cell frame geometry. The transcatheter aortic valve replacement (TAVR) procedure enables the placement of a collapsible heart valve into the body via a tube-based delivery system (i.e., catheter) that is inserted through a small incision, usually in the leg. The valve is designed to replace a patient’s diseased native valve while the heart continues to beat, without traditional open-heart surgery. The TAVR procedure usually avoids the use of a heart-lung machine that temporarily takes over the function of the heart during open-heart surgery. Once in place, the SAPIEN 3 valve is intended to function like a healthy valve with proper blood flow.

Clinical Data Summary

The SAPIEN valve platform is the most widely studied transcatheter heart valve platform worldwide. Building on the PARTNER Trial, the world’s first randomized transcatheter heart valve trial, the PARTNER II Trial studied the safety and effectiveness of next-generation Edwards transcatheter heart valves and represents the largest, most rigorous comparative body of evidence in the history of aortic valve replacement. The SAPIEN 3 valve cohort of the PARTNER II Trial was designed to evaluate the safety and effectiveness of the SAPIEN 3 valve in patients with symptomatic severe native calcific AS who are at intermediate or greater risk for surgical aortic valve replacement. In the PARTNER II Trial, definitive outcomes for intermediate-risk patients treated with the SAPIEN 3 valve demonstrated 75% lower rates of 30-day all-cause mortality and disabling stroke compared to surgery.*

Features of the Edwards SAPIEN 3 Valve

- outer sealing skirt designed to minimize the risk of paravalvular leak
- enhanced frame geometry for low delivery profile

TAVR is a significant procedure and is associated with specific contraindications as well as serious adverse events, including risks of death, stroke, damage to the access site used for valve insertion, major bleeding, and other life-threatening and serious events.

*The PARTNER II Trial intermediate-risk cohort 30-day unadjusted clinical event rates for TAVR with the SAPIEN 3 transcatheter heart valve, AT population (n=1077)

CAUTION: Federal (United States) law restricts these devices to sale by or on the order of a physician. See Instructions for Use for full prescribing information, including indications, contraindications, warnings, precautions, and adverse events.

This document was updated in July 2017.

Additional Information

More information about the TAVR procedure can be found at NewHeartValve.com.
Important Safety Information

Edwards SAPIEN 3 Transcatheter Heart Valve with the Edwards Commander and Certitude Delivery Systems

Indications: The Edwards SAPIEN 3 transcatheter heart valve, model 9600TFX, and accessories are indicated for relief of aortic stenosis in patients with symptomatic heart disease due to severe native calcific aortic stenosis who are judged by a Heart Team, including a cardiac surgeon, to be at intermediate or greater risk for open surgical therapy (i.e., predicted risk of surgical mortality ≥ 3% at 30 days, based on The Society of Thoracic Surgeons (STS) risk score and other clinical comorbidities unmeasured by the STS risk calculator); and are also indicated for patients with symptomatic heart disease due to failure (stenosed, insufficient, or combined) of a surgical bioprosthetic aortic or mitral valve who are judged by a Heart Team, including a cardiac surgeon, to be at high or greater risk for open surgical therapy (i.e., predicted risk of surgical mortality ≥ 8% at 30 days, based on the STS risk score and other clinical comorbidities unmeasured by the STS risk calculator).

Contraindications: The valve and delivery systems are contraindicated in patients who cannot tolerate an anticoagulation/ antiplatelet regimen or who have active bacterial endocarditis or other active infections.

Warnings: Observation of the pacing lead throughout the procedure is essential to avoid the potential risk of pacing lead perforation. There may be an increased risk of stroke in transcatheter aortic valve replacement procedures, as compared to balloon aortic valvuloplasty or other standard treatments in high or greater risk patients. Incorrect sizing of the valve may lead to paravalvular leak, migration, embolization, residual gradient (patient-prosthesis mismatch), and/or annular rupture. Accelerated deterioration of the valve may occur in patients with an altered calcium metabolism. Prior to delivery, the valve must remain hydrated at all times and cannot be exposed to solutions other than its shipping solution and sterile physiologic rinsing solution. Valve leaflets mishandled or damaged during any part of the procedure will require replacement of the valve. Caution should be exercised in implanting a valve in patients with clinically significant coronary artery disease. Patients with pre-existing bioprostheses should be carefully assessed prior to implantation of the valve to ensure proper valve positioning and deployment. Do not use the valve if the tamper-evident seal is broken, the storage solution does not completely cover the valve, the temperature indicator has been activated, the valve is damaged, or the expiration date has elapsed. Do not mishandle the delivery system or use it if the packaging or any components are not sterile, have been opened or are damaged (e.g., kinked or stretched), or if the expiration date has elapsed. Use of excessive contrast media may lead to renal failure. Measure the patient’s creatinine level prior to the procedure. Contrast media usage should be monitored. Patient injury could occur if the delivery system is not un-flexed prior to removal. Care should be exercised in patients with hypersensitivities to cobalt, nickel, chromium, molybdenum, titanium, manganese, silicon, and/or polymeric materials. The procedure should be conducted under fluoroscopic guidance. Some fluoroscopically guided procedures are associated with a risk of radiation injury to the skin. These injuries may be painful, disfiguring, and long-lasting. Valve recipients should be maintained on anticoagulant/antiplatelet therapy, except when contraindicated, as determined by their physician. This device has not been tested for use without anticoagulation. Do not add or apply antibiotics to the storage solution, rinse solution, or to the valve. Balloon valvuloplasty should be avoided in the treatment of failing bioprostheses as this may result in embolization of bioprosthetic material and mechanical disruption of the valve leaflets.

Precautions: Safety, effectiveness, and durability have not been established for THV-in-THV procedures. Long-term durability has not been established for the valve. Regular medical follow-up is advised to evaluate valve performance. Glutaraldehyde may cause irritation of the skin, eyes, nose, and throat. Avoid prolonged or repeated exposure to, or breathing of, the solution. Use only with adequate ventilation. If skin contact occurs, immediately flush the affected area with water; in the event of contact with eyes, seek immediate medical attention. For more information about glutaraldehyde exposure, refer to the Safety Data Sheet available from Edwards Lifesciences. To maintain proper valve leaflet coaptation, do not overinflate the deployment balloon. Appropriate antibiotic prophylaxis is recommended post-procedure in patients at risk for prosthetic valve infection and endocarditis. Additional precautions for transseptal replacement of a failed mitral valve bioprosthesis include the presence of devices or thrombus or other abnormalities in the caval vein precluding safe transvenous femoral access for transseptal approach and the presence of an Atrial Septal Occluder Device or calcium preventing safe transseptal access. Special care must be exercised in mitral valve replacement if chordal preservation techniques were used in the primary implantation to avoid entrapment of the subvalvular apparatus. Safety and effectiveness have not been established for patients with the following characteristics/comorbidities: noncalcified aortic annulus; severe ventricular dysfunction with ejection fraction < 20%; congenital unicuspid or congenital bicuspid aortic valve; mixed aortic valve disease (aortic stenosis and aortic regurgitation with predominant aortic regurgitation > 3+); pre-existing prosthetic ring in any position; severe mitral annular calcification (MAC); severe (> 3+) mitral insufficiency, or Gorlin syndrome; blood dyscrasias defined as leukopenia (WBC < 3000 cells/mL), acute anemia (Hb < 9 g/dL), thrombocytopenia (platelet count < 50,000 cells/mL), or history of bleeding diathesis or coagulopathy; hypertrophic cardiomyopathy with or without obstruction (HOCM); echocardiographic evidence of intracardiac mass, thrombus, or vegetation; a known hypersensitivity or contraindication to aspirin, heparin, ticlopidine (Ticlid), or clopidogrel (Plavix), or sensitivity to contrast media, which cannot be adequately premedicated; significant aortic disease, including abdominal or thoracic aortic aneurysm defined as maximal luminal diameter 5 cm or greater, marked tortuosity (hyperacute bend), aortic arch atheroma (especially if thick > 5 mm), protruding, or ulcerated) or narrowing (especially with calcification and surface irregularities) of the abdominal or thoracic aorta, severe “unfolding” and tortuosity of the thoracic aorta; access characteristics that would preclude safe placement of 14F or 16F Edwards eSheath introducer set, such as severe obstructive calcification, severe tortuosity, or diameter less than 5.5 mm or 6 mm, respectively; excessive calcification at access site; bulky calcified aortic valve leaflets in close proximity to coronary ostia; a concomitant paravalvular leak where the failing
bioprosthesis is not securely fixed in the native annulus or is not structurally intact (e.g., wireframe fracture); or a partially detached leaflet of the failing bioprosthesis that, in the aortic position, may obstruct a coronary ostium. Residual mean gradient may be higher in a THV-in-failing bioprosthesis configuration than that observed following implantation of the valve inside a native aortic annulus using the same size device. Patients with elevated mean gradient post-procedure should be carefully followed. It is important that the manufacturer, model, and size of the pre-existing bioprosthetic valve be determined so that the appropriate valve can be implanted and a prosthesis-patient mismatch is avoided. Additionally, pre-procedure imaging modalities must be employed to make as accurate a determination of the inner diameter as possible.

**Potential Adverse Events:** Potential risks associated with the overall procedure, including potential access complications associated with standard cardiac catheterization, balloon valvuloplasty, the potential risks of conscious sedation and/or general anesthesia, and the use of angiography: death; stroke/transient ischemic attack, clusters, or neurological deficit; paralysis; permanent disability; respiratory insufficiency or respiratory failure; hemorrhage requiring transfusion or intervention; cardiovascular injury including perforation or dissection of vessels, ventricle, atrium, septum, myocardium, or valvular structures that may require intervention; pericardial effusion or cardiac tamponade; embolization including air, calcific valve material, or thrombus; infection including sepsis and endocarditis; heart failure; myocardial infarction; renal insufficiency or renal failure; conduction system defect which may require a permanent pacemaker; arrhythmia; retroperitoneal bleed; arteriovenous (AV) fistula or pseudoaneurysm; reoperation; ischemia or nerve injury; restenosis; pulmonary edema; pleural effusion; bleeding; anemia; abnormal lab values including electrolyte imbalance; hypertension or hypotension; allergic reaction to anesthesia, contrast media, or device materials; hematoma; syncope; pain or changes at the access site; exercise intolerance or weakness; inflammation; angina; heart murmur; and fever. Additional potential risks associated with the use of the valve, delivery system, and/or accessories include: cardiac arrest; cardiogenic shock; emergency cardiac surgery; cardiac failure or low cardiac output; coronary flow obstruction/transvalvular flow disturbance; device thrombosis requiring intervention; valve thrombosis; device embolization; device migration or malposition requiring intervention; left ventricular outflow tract obstruction; valve deployment in unintended location; valve stenosis; structural valve deterioration (wear, fracture, calcification, leaflet tear/tearing from the stent posts, leaflet retraction, suture line disruption of components of a prosthetic valve, thickening, stenosis); device degeneration; paravalvular or transvalvular leak; valve regurgitation; hemolysis; injury to the mitral valve; device explants; mediastinitis; mediastinal bleeding; nonstructural dysfunction; mechanical failure of delivery system and/or accessories; and nonemergent reoperation.

**Edwards Crimper**

**Indications:** The Edwards Crimper is indicated for use in preparing the Edwards SAPIEN 3 transcatheter heart valve for implantation.

**Contraindications:** There are no known contraindications.

**Warnings:** The devices are designed, intended, and distributed for single use only. Do not resterilize or reuse the devices. There are no data to support the sterility, nonpyrogenicity, and functionality of the devices after reprocessing.

**Precautions:** For special considerations associated with the use of the Edwards Crimper prior to valve implantation, refer to the Edwards SAPIEN 3 transcatheter heart valve Instructions for Use.

**Potential Adverse Events:** There are no known potential adverse events associated with the Edwards Crimper.