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Automated Function Imaging Healthymagination Validation Summary

INTRODUCTION

GE's healthymagination innovations are validated based on the proven level of contribution towards GE's healthymagination goals of enabling 15% reductions in cost and 15% improvements in access to and quality of healthcare. Innovations, along with supporting technical documentation, are submitted for validation to *Oxford Analytica,* whose independent network of scholar experts uses a predefined scoring system to assess the strength of the evidence supporting the innovation's claims.

Automated Function Imaging Assessment

Automated Function Imaging (AFI) has been awarded healthymagination validation on Cost, Access and Quality by *Oxford Analytica* and its external independent experts.

COST

AFI has the potential to reduce cost in comparison to SPECT when evaluating Medicare costs. One study found that assessment with AFI for global LV strain immediately after acute infarction may be a useful tool to predict recovery of LV function, which could lead to better disease management and allowing for early discharge of patients.[i] This level of predictive capacity compares favorably with SPECT.

The average Medicare cost of an AFI assessment is 46% lower than SPECT.[i]

ACCESS

AFI has the potential to increase access for high-risk asymptomatic aortic valve stenosis (AS) patients for whom exercise testing may not be feasible (eg, elderly, diabetic, disabled or obese patients) because AFI can be performed at rest.[ii iii],

AFI has the potential to expand access to care for the subset of high risk asymptomatic AS patients who cannot exercise or who exercise submaximally.

QUALITY

One study demonstrated that AFI offers potential in predicting mortality when compared to standard echo methods.[iv] According to Epstein et al, "Additional risk stratification of patients with a reduced LVEF (Left Ventricular Ejection Fraction) may improve patient selection for the ICD (Implantable Cardioverter-Defibrillator)."[v] This can increase physicians' ability to design proper treatments, for instance by helping to identify which patients will require an ICD. Studies have shown that ICD use can reduce patient mortality by more than 15%.[vi] Additionally, a study showed potential in prediction of cardiotoxicity in chemotherapy patients, through AFI analysis of LV function.[vii]

AFI offered potential in predicting mortality in patients with suspected LV impairment compared to Ejection Fraction.[iv]

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Oxford Analytica is a global analysis and advisory firm which draws on a worldwide network of over 1,400 experts to advise its clients on their strategy and performance. It provides seasoned judgment on national and international affairs and independent analysis of global events, trends and their impact to governments, international organisations, financial institutions and multinational corporations. *Oxford Analytica* has built an international reputation as the industry standard for strategic intelligence and analysis of geopolitical, macroeconomic and social developments worldwide.

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[ii] Sicari R, Nihoyannopoulos P, Evangelista A, Kasprzak J, Lancelotti P, Poldermans D, Voigt J-U, Zamorano JL, 'Stress echocardiography expert consensus statement.' *European Journal of Echocardiography*, 2008; 9: 415-37; and http://www.healthcommunities.com/aortic-stenosis/index.shtml

[iii] Lafitte S, Perlant M, Reant P, Serri K, Douard H, DeMaria A, Roudaut R. "Impact of impaired myocardial deformations on exercise tolerance and prognosis in patients with asymptomatic aortic stenosis, *European Journal of Echocardiography,* 2009; 10: 414-9.

[iv] Stanton T, Leano R, Marwick TH , 'Prediction of all-cause mortality from global longitudinal speckle strain: Comparison with ejection fraction and wall motion scoring', *Circulation: Cardiovascular Imaging*, 2009; 2: 356-364.

[v] Epstein et al. 'ACC/AHA/HRS 2008 Guidelines for Device-Based Therapy of Cardiac Rhythm Abnormalities.' *Journal of the American College of Cardiology*, Vol. 51, No. 21, 2008.

[vi] Ibid.

[vii] Sawaya H, Sebag IA, Plana JC, Januzzi JL, Ky B, Cohen V, Gosavi S, Carver JR, Wiegers SE, Martin RP, Picard MH, Gerszten RE, Halpern EF, Passeri J, Kuter I, Scherrer-Crosbie M., Early detection and prediction of cardiotoxicity in chemotherapy-treated patients. Am J Cardiol. 2011; 107:1375-1380.