

## ACT1 ACT2

### A Philips iFR workflow guide

#### Pre-treatment: Strategize

##### **A** Assess

###### iFR spot measurement and pullback

- Consider performing an iFR spot and pullback with co-registration technique
  - Obtain cine angiogram for co-registration or select “use last angiogram”
- If ischemia is present, consider treating patient ( $\leq 0.89$  iFR value is considered the physician defined deferral cut point from DEFINE FLAIR<sup>1</sup> and iFR SWEDEHEART<sup>2</sup>)
- If iFR is above 0.89 but clinical indicators are consistent with ischemia, consider additional diagnostics and/or treatment

##### **C** Co-register iFR & consider IVUS

###### Co-register/virtual stent plan

- Establish disease pattern such as single focal, multifocal, diffuse
- Create a treatment plan based on the virtual stent tool (physician defined)
  - Virtually plan your PCI and predict your results
  - Consider targeting a post PCI goal of  $\geq 0.95$  iFR value as described in DEFINE PCI<sup>3,4</sup>
  - In the setting of diffuse disease or other complexities, a lower post PCI iFR goal may be acceptable

###### Consider IVUS

- For stent diameter and lesion prep

##### **T** Treat

#### Post-treatment: Optimize

##### **A** Assess

###### iFR spot measurement and pullback

- Perform a iFR spot and pullback to ensure your goal was met
- Perform post-PCI iFR Pullback with co-register technique
- Obtain cine angiogram for co-registration or select “use last angiogram”

##### **C** Co-register iFR & consider IVUS

###### Co-register and note location of yellow dots

- Detect any significant residual pressure gradients especially for those within or near the stent
  - DEFINE PCI showed that patients with pressure drops near edges of deployed stents had worse outcomes and possible deficient stent optimization<sup>3,4</sup>
- Consider IVUS if target iFR value was not achieved, there is a pressure loss within the vessel, or new pressure gradients appear, especially within or near the stent
  - ULTIMATE trial demonstrated the strongest patient outcomes when stents were optimized with IVUS guidance<sup>5</sup>

##### **T** Treat

###### If necessary, optimize treatment

- Consider optimization if there are pressure gradients within the stent or suspected stent malapposition

1. Davies JE, Sen S, Dehbi H-M, Al-Lamee R, Petraco R, Nijjer SS, et al. Use of the instantaneous wave-free ratio or fractional flow reserve in PCI. *N Engl J Med.* 2017;376:1824–34. 2. Göteborg M, Christiansen EH, Gudmundsdottir IJ, Sandhall L, Danielewicz M, Jakobsen L, Olsson SE, Ohagen P, Olsson H, Omerovic E, Calais F, Lindroos P, Maeng M, Tødt T, Venetsanos D, James SK, Kåregren A, Nilsson M, Carlsson J, Hauer D, Jensen J, Karlsson AC, Panayi G, Erlinge D, Fröbert O; iFR-SWEDEHEART Investigators. Instantaneous Wave-free Ratio versus Fractional Flow Reserve to Guide PCI. *N Engl J Med.* 2017 May 11;376(19):1813-1823. doi: 10.1056/NEJMoa1616540. Epub 2017 Mar 18. PMID: 28317438. 3. Jeremias A. et al. Blinded physiological assessment of residual ischemia after successful angiographic percutaneous coronary intervention: The DEFINE PCI study. *JACC Cardiovasc Interv.* 2019 Oct 28;12(20):1991-2001. 4. Patel, M, Jeremias, A, Maehara, A. et al. 1-Year Outcomes of Blinded Physiological Assessment of Residual Ischemia After Successful PCI: DEFINE PCI Trial. *J Am Coll Cardiol Interv.* 2022 5. Zhang, J., Gao, X., Kan, J., Ge, Z., Han, L., Lu, S., Tian, N., Lin, S., Lu, Q., Wu, X., Li, Q., Liu, Z., Chen, Y., Qian, X., Ye, F., Chen, S., Li, F., Li, S., Chen, M., & Chen, S. (2018). Intravascular Ultrasound-Guided Versus Angiography-Guided Implantation of Drug-Eluting Stent in All-Comers: The ULTIMATE Trial. *Journal of the American College of Cardiology*, 72(24), 3126-3137. doi:10.1016/j.jacc.2018.09.013.

