Same-Day Discharge: If Not Now, When?

During last month's virtual Transcatheter Cardiovascular Therapeutics (TCT) conference, a panel discussion of clinicians and administrators addressed the challenges and opportunities surrounding the use of same-day discharge (or lack thereof) in most hospitals. The COVID pandemic has caused many institutes to rethink and address operational efficiencies, with the hope of not only reducing the fear burden of patients, but also facilitating a more efficient and cost-effective means for patients to move through their procedural stay in a shorter length of time. For those readers who have not yet seen the TCT panel discussion, I asked our panel to reflect on what they gained from the program and to reinforce key learnings that any institute could benefit from. In light of Terumo's very proactive position on the clinical, economic, and quality benefits that tie transradial access to same-day discharge, we also asked the CMO for Terumo Medical Corporation, Dr. Michael J. Martinelli, to provide his view.

— Gary Clifton, Vice President, Terumo Business Edge

The vast majority of patients would rather go home than stay in the hospital under any circumstance, but after COVID-19, this preference was markedly pronounced.

— Ronald P. Caputo, MD

Dr. Martinelli, Terumo has taken a specific position in support of advocating for same-day discharge for the appropriate patient undergoing PCI. As the CMO of Terumo Medical Corporation, would you elaborate?

Michael J. Martinelli, MD: Our philosophy at Terumo remains focused on providing our customers with the tools to assist them in offering state-of-the-art care to their patients while achieving excellent outcomes. As a company, our most recent effort to support quality, efficiency, safety, and excellent outcomes is exemplified by our new awareness campaign surrounding same-day discharge (SDD) for elective percutaneous coronary intervention (PCI). Our "PCI in 6" campaign incorporates the currently available data around SDD to provide our customers and their institutions with tangible tools to assist in ensuring excellent outcomes as they initiate and/or build their programs. We have based this effort on the evidence that with the successful implementation of guideline-based protocols, SDD post PCI can be achieved safely.[1] And, as referenced in our PCI in 6 nomenclature, it has been shown to be safe to discharge patients within 6 hours post procedure, as most adverse events occur within that period.[2] Regardless of procedural access site, SDD post PCI can improve patient satisfaction, increase bed availability, and reduce hospital costs without increasing adverse patient outcomes.[3] As Chief Medical Officer of Terumo Medical Corporation, I am very excited to support this effort, and look forward to continuing to work with our healthcare provider partners to support their ability to provide high-quality and safe care to their patients.

Dr. Caputo, you recently moderated a panel of experts on the issue of SDD. What did you observe from your discussions?

Ronald P. Caputo, MD: Moderating a recent symposium regarding SDD was illuminating for me for several reasons. While I had been employing a strategy of SDD using relatively conservative criteria for years, the onset of SARS-CoV-2 pushed me to aggressively pursue this strategy. The vast majority of patients would rather go home than stay in the hospital under any circumstance, but after COVID-19, this preference was markedly pronounced. Although the data supporting SDD is voluminous and convincing, it was reassuring to hear from the well-respected members of the panel that they were also heavily utilizing SDD. What was particularly striking to me were the data and opinions presented regarding the safety of this strategy even with high levels of lesion and patient complexity. Bifurcation lesions, uncomplicated chronic total occlusions (CTOs), atherectomy, and left main cases are all fair game. It is great to read the data, but it is always very reassuring to hear that your practice is aligned with other doctors you trust. I also found the financial benefits of SDD — up to $1000 to $3000 per patient, realized through decreased bed and resource utilization — to be striking.

Dr. Mamas, during the panel discussion, you really keyed in on the safety of SDD. What additional advice do you have for programs who are still hesitant to fully engage in SDD?

Mamas A. Mamas, BMBCh, DPhil, MRCP(UK): SDD has been shown to be safe in both randomized, controlled trials and observational registries, and represents standard practice in many European countries. Complications after 4- to 6-hour periods of observation are incredibly rare and usually occur after 24 hours, and so keeping patients overnight would not capture such events. We are in an era of COVID, where hospitals should be considered a potential high-risk area for patients, who by virtue of the fact that they have cardiovascular disease, are at high risk of adverse outcomes with COVID-19. SDD is an effective strategy to reduce risk of nosocomial-acquired infection. As evidenced by our experience with SDD in the U.K.,[4] many programs begin with simple, low-risk cases for SDD and then move to more complex cases as they become more confident with the practice. In the U.K., we are now undertaking many CTO cases and left main cases as SDD. Finally, in a consumer-based healthcare system such as in the U.S., not offering SDD will simply mean that patients will opt to go elsewhere to have elective procedures in programs that do have SDD.

Dr. Wohns, you touched on an idea that many acute care programs are either contemplating currently or will do so in the near future: moving procedures to a lower-cost site of care, i.e., the ambulatory surgical center (ASC). Why do you believe this will happen and what should programs be considering in order to make an informed decision?

David Wohns, MD: We know that the Centers for Medicare and Medicaid Services (CMS) began reimbursement for a variety of coronary interventional and electrophysiology (EP) procedures for performance in ASCs, beginning in January 2020. In addition, our major societies, including the Society for Cardiovascular Angiography and Interventions (SCAI) and American College of Cardiology (ACC), have offered positions on

Your patients will love this, and your staff will begin to ask why not SDD, instead of why SDD.

— David Wohns, MD

this topic that provide a foundation for appropriateness and safety.[5,6] This move to ASCs is driven by several forces, including (1) reduced cost of care in the ASC setting versus hospitals and (2) abundant observational and randomized studies, as well as registries, demonstrating the safety of same-day discharge PCI for appropriately selected patients. The move to ASCs is the next frontier for reducing the cost of care for this service. While cardiovascular procedures differ from other procedures that have successfully moved to ASCs, the abundance of data from the same-day discharge experience, coupled with the extraordinarily rare complications that require hospital services, makes this a viable opportunity for continuing to drive down costs while providing the same quality of care.

Ms. Osborne, you did a great job of representing the system perspective from an administrative point of view. What advice would you give to your peers that might be struggling with encouraging their providers to adopt a SDD approach?

Mary Osborne, MBA, MSN, RN: Same-day discharge has three primary benefits: it reduces procedural cost for both the patient and hospital, increases efficiency, and improves patient satisfaction. And today, I believe we can add a fourth benefit: that of limiting exposure to COVID-19. All of these benefits build a strong case for SDD. In order to gain a competitive edge in today's ambulatory space as regulations loosen, facilities will need to operate robust outpatient, efficient, and lower-cost programs, including SDD for PCI. The concept of SDD is also relevant to the electrophysiology subspecialty, with many programs adopting the practice for device implants and non-complex ablations.

In a consumer-based healthcare system such as in the U.S., not offering SDD will simply mean that patients will opt to go elsewhere to have elective procedures in programs that do have SDD.

— Mamas Mamas, BMBCh, DPhil, MRCP(UK)

We pose this next question to each of our physician clinicians. What advice and or evidence would you give your interventional colleagues who have been reluctant or just plain reticent to adopt a same-day approach to their interventional procedures?

Dr. Caputo: For physicians and programs contemplating a strategy of same-day discharge, I would suggest a few things. First, make sure you and your program are competent and comfortable with transradial arterial access. There is tremendous peace of mind in knowing that the patient you discharged will be able to comfortably ambulate and not suffer a late bleed at home. Second, you have to create inclusion/exclusion criteria for SDD that both you and your program are comfortable with, and then commit to the strategy. If there is concern, start with restrictive criteria and expand the criteria as you gain experience. Third, it is helpful to call the patients the next day, make sure they are doing well, and ask them if they were satisfied with the same-day strategy.

Dr. Mamas: There are multiple randomized, controlled trials, national registries, and observational studies that have shown the safety of SDD, as well as health economic analyses showing cost savings.[7] In the current environment, it is not a question of whether a unit should adopt SDD, but rather, when. Start with simple cases and as you build your experience, move to more complex cases. The recent SCAI consensus[5] provides a good framework to work around. We have published national data around the safety of SDD in complex cases including rotational atherectomy[8] and left main[9] that dispel many of the myths suggesting you need to admit such cases for overnight observation.

I recommend building a radial access program as a first step. Together, radial access and SDD are patient satisfiers, and can lessen the demand for capacity and staff.

— Mary Osborne, MBA, MSN, RN

Dr. Wohns: My advice would be to read the abundant literature dating back nearly 15 years, including meta-analyses, randomized data, and registry data demonstrating the safety of this approach. Share it with your team. The key to safety is having the right processes and the right protocols in place in order to select the right patient for same-day discharge. It will not be everyone. But it can be the majority of your uncomplicated PCI patients who meet criteria that are established for pre, peri, and post procedural assessments to identify eligible patients. If you are just starting, it requires careful planning and a slow start. Bring together a multidisciplinary group of all stakeholders who need to understand and gain acceptance of not only why you are doing

this, but how you will ensure patient safety as a team. Finally, share early success stories with the team to encourage further support and acceptance. Your patients will love this, and your staff will begin to ask why not SDD, instead of why SDD.

Ms. Osborne, what advice would give to your peers regarding the operational aspects of creating a same-day discharge program?

Mary Osborne, MBA, MSN, RN: Strong administrative and clinical support are necessary for a successful SDD program. We have found that programs with a higher rate of radial access are more open to SDD. Therefore, I recommend building a radial access program as a first step. Together, radial access and SDD are patient satisfiers, and can lessen the demand for capacity and staff. As a system, we developed a guide outlining a methodical, step-by-step process to facilitate adoption of a SDD program. First and foremost, a multidisciplinary team should be identified, which must include a physician champion or advocate. Patient inclusion and/or exclusion criteria should be established for both the pre-procedure and post-procedure phases of care, and generally agreed upon by the operators involved. A degree of comfort by the operators is necessary in the early days of a SDD program. The implications of a SDD program extend beyond the clinical aspects. Patient scheduling and hours of operation for post-procedure care are important to consider when planning the program. ■

References

1. Seto AH, Shroff A, Abu-Fadel M, et al. Length of stay following percutaneous coronary intervention: An expert consensus document update from the society for cardiovascular angiography and interventions. *Catheter Cardiovasc Interv*. 2018 Oct 1; 92(4): 717-731. doi: 10.1002/ccd.27637.
2. Groves E, Vidovich MI. Length of stay after PCI. *American College of Cardiology*. 2019 Aug 5. Available online at https://www.acc.org/latest-in-cardiology/articles/2019/08/02/13/57/length-of-stay-after-pci. Accessed October 2, 2020.
3. Shroff A, Kupfer J, Gilchrist IC, et al. Same-day discharge after percutaneous coronary intervention: current perspectives and strategies for implementation. *JAMA Cardiol*. 2016 May 1; 1(2): 216-223. doi: 10.1001/jamacardio.2016.0148. PMID: 27437896.
4. Taxiarchi P, Kontopantelis E, Martin GP, et al. Same-day discharge after elective percutaneous coronary intervention: insights from the British Cardiovascular Intervention Society. *JACC Cardiovasc Interv.* 2019 Aug 12; 12(15): 1479-1494. doi: 10.1016/j.jcin.2019.03.030.
5. Box LC, Blankenship JC, Henry TD, et al. SCAI position statement on the performance of percutaneous coronary intervention in ambulatory surgical centers. *Catheter Cardiovasc Interv*. 2020 May 14. doi: 10.1002/ccd.28991. Epub ahead of print.
6. ACC Comments on CY 2020 Hospital OPPS Proposed Rule. ACC News Story. September 30, 2019. Available online at https://www.acc.org/latest-in-cardiology/articles/2019/09/30/15/06/acc-comments-on-cy-2020-hospital-opps-proposed-rule. Accessed October 6, 2020.
7. Amin AP, Pinto D, House JA, et al. Association of same-day discharge after elective percutaneous coronary intervention in the United States with costs and outcomes. *JAMA Cardiol*. 2018 Nov 1; 3(11): 1041-1049. doi: 10.1001/jamacardio.2018.3029.
8. Taxiarchi P, Martin GP, Curzen N, et al. Rotational atherectomy and same day discharge: safety and growth from a national perspective. *Catheter Cardiovasc Interv.* 2020 Aug 26. doi: 10.1002/ccd.29228. Epub ahead of print.
9. Taxiarchi P, Kontopantelis E, Kinnaird T, et al. Adoption of same day discharge following elective left main stem percutaneous coronary intervention. *Int J Cardiol*. 2020 Jul 30: S0167-5273(20)33486-0. doi: 10.1016/j.ijcard.2020.07.038. Epub ahead of print.

Michael J. Martinelli, MD, FACC, FSCAI
Chief Medical Officer,
Terumo Medical Corporation

Ronald P. Caputo, MD, FACC, FSCAI
Levine Heart and Wellness, Naples, Florida

Mamas A. Mamas, BMBCh, DPhil, MRCP(UK)
Keele Cardiovascular Research Group, Centre for Prognosis Research, Institutes of Applied Clinical Science and Primary Care and Health Sciences, Keele University, Keele, United Kingdom

David Wohns, MD, MBA, FACC, FSCAI
Division Chief, Cardiovascular Medicine
Spectrum Health Medical Group
Frederik Meijer Heart and Vascular Institute
Department Chair, Cardiovascular Health
Spectrum Health Hospital Group
Grand Rapids, Michigan

Mary Osborne, MBA, MSN, RN
System Director
National Cardiovascular Service Line
CommonSpirit Health®
Lexington, Kentucky