

SEQIP “DiDo” Committee (Door-in-Door-Out)
Best Practice Recommendations to achieve DiDo \leq 120 min
Secondary Goal: DiDo \leq 90 min
Updated: May 12, 2021



NOTE: Providers, Systems and Resources may vary by facility; modify your PI Plans accordingly

NOTE: DiDo measures should be reported for all ED OP stroke transfers out – regardless of TLKW (STK-OP1 or ASR-OP2 categories)

SUMMARY OF BEST PRACTICES:

1. Collect Stroke Alert DiDo PI data in real-time for timely feedback to EMS and ED teams

2. Break DiDo process into Three (3) different buckets for data analysis and PI:

- **PRE-ARRIVAL: EMS Dispatch, Recognition, Field Assessments and Pre-notification to ED**
- **ED FRONT-END: Arrival-to-Decision – Early Imaging Results: GOAL \leq 60 min, secondary goal \leq 45 min**
- **ED BACK-END: Decision to Departure: GOAL \leq 60 min, secondary goal \leq 45 min**

3. Provide timely feedback on DiDo times (debriefing)

4. Focused and documented PI Action Plans

1. Collect Stroke Alert DiDo PI data in real-time for timely feedback to EMS and ED teams

- Sites must be able to track key Stroke Alert DiDo process times in real-time *if at all possible*
- Use a Stroke Alert PI Data Collection tool (see example) and establish ownership and accountability around the data collection, submission, review and *timely* PI feedback to EMS crews and ED teams.
- PI data tool completed in real-time can also help remind and keep Stroke Alert Team on target to D2N and DiDo goals
- PI data tool is a great post-event resource for MD and RN to improve documentation of times in the medical record
- Identify and utilize Stroke Champions in your ED to support this important process and hold teams accountable:
 - ED Medical Director, ED Director / Manager, ED Charge Nurses or ED Nurse Educators for example
- Stroke Alert “windows” should be established for TLKW < 24 hours
- With interventional windows up to 24 hours from TLKW, it is important to *work towards* a 24-hour stroke alert window if not there already
- If you find your DiDo times for LVO/MER eligible cases are not meeting goal, look to see if a Stroke Alert was called and if not was it b/c out of IV-Alteplase window? Was patient potentially a thrombectomy candidate? Have you missed any LVO windows b/c no stroke alert called? Discuss data with your stroke committees, *consider expanding alert windows further out to < 24 hours*
- We recognize and acknowledge the potential for ED teams to become “code-weary” as stroke alert windows expand, but set good clinical parameters and educate on when Stroke Alert should be activated.

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2. Break DiDo process into Three (3) different buckets for data analysis and PI: Pre-Arrival, ED Front-End and ED Back-End

- **PRE-ARRIVAL: EMS Recognition, Field Assessments and Pre-notification to ED**
 - Provide education to EMS providers on guideline-based times for EMS dispatch, turnout, onscene, and depart scene goals
 - Dispatch: < 1 min from 911, ALS provider dispatched
 - Turnout: < 1 min from Dispatch
 - Arrive onscene < 9 min from Turnout
 - Depart scene < 15 min from arrive on scene
 - EMS to establish TLKW and/or time of witnessed onset, complete CPHSS, if positive, complete LVO Assessment: C-STAT / RACE
 - EMS to obtain FS BG
 - EMS to obtain info on PMH and Medications (if reliable historian on scene or by phone)
 - If TLKW < 24 hours, Pre-notify ED of possible Stroke patient PTA to ED
 - Include findings, clinical presentation, TLKW, BG, CPHSS, LVO scores, PMH and meds in pre-report to ED
 - Run report should contain all of these elements, work with your EMS providers to improve documentation in run reports
 - Genentech OVER REACT site may contain helpful info on EMS education
- **ED FRONT-END: Arrival-to-Decision – Early Imaging Results: GOAL \leq 60 min; \leq 45 min**
 - **CLOCK STOPS when decision is made to transfer (disposition most often correlates with CT/CTA reports)**
 - IF CT + bleed and NO Neurosurgery onsite w/in 2 hours – you know you’re going to transfer – clock stops!
 - IF CTA+ LVO and TLKW < 24 hours and don’t do Thrombectomy onsite – you know you’re going to transfer – clock stops!
 - Rural hospitals / CAH w/o Neurology – you know on arrival that patient is going to be transferred regardless
 - In these instances, when imaging / lab results are reported so proper disposition is made – clock stops!
 - **Key Processes & Workflow:**
 - Rapid activation of ED Stroke Alert Process – mobilize ED Acute Stroke Team resources (MDs, RN, CT, Lab, Pharmacy)
 - Stroke Alert called pre-arrival if EMS pre-notified
 - Stroke Alert on / soon after arrival to ED if no pre-notification or for Walk-in cases
 - ABCD on arrival, have EMS take patient directly to CT whenever possible, if walk-in, go from Triage directly to CT
 - Labs drawn prior to CT whenever possible (for many sites, it takes longer to run labs than to result CT)
 - CT and CTA H/N **on arrival** if: EMS + LVO score, NIHSS \geq 6, + gaze deviation and/or + hemiplegia and/or + aphasia/dysarthria
 - Door-to-Lab results: GOAL \leq 35 minutes

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- Door-to-CT results: GOAL \leq 35 minutes
- Target Stroke III: Goal Door-to-CT results should be \leq 25 min
- GOAL: If eligible, give IV-Alteplase early as possible even if suspect LVO: Goal D2N < 30, < 45, < 60
- Door-to-CTA results: GOAL \leq 60 minutes when indicated; if CTA not done on arrival, do not delay IV-tPA, start infusion, then CTA
- **PI Notes from DIDO Committee:**
 - Consider implementing C-STAT or RACE in ED Triage during EMS handoff *if not done* by EMS in the field – this may help guide earlier decision on whether or not to get early CTA for suspected LVO
 - This may also demonstrate importance of and encourage EMS to get C-STAT or RACE in the field.
 - ED Greeters should know BE-FAST and s/s of posterior circulation stroke for “walk-in” patients *and get to Triage immediately*
 - Educate greeters, establish initial and annual competency, reinforce education frequently (high-turnover??)
 - Some sites have a Two-Tiered Stroke Alert Process (parallel process)
 - “Stroke Alert RED” for any patient w/acute neuro deficits & TLKW \leq 4.5 hrs, includes standard w/u for possible LVO as well
 - “Stroke Alert RED” may also be activated if patient received IV-Alteplase at outside facility
 - “Stroke Alert” if any acute deficits but outside Alteplase window and TLKW < 24 hrs, STAT CT/CTA on arrival for LVO
 - If trying to achieve D2N \leq 45 minutes this \leq 35 min goal for CT results should already be hardwired as part of your current Stroke Alert Process and should also apply to lab results.
 - If trying to achieve more consistent D2N \leq 30 min, goal for CT results should be \leq 25 min
 - Early CTA on arrival (if indicated) *MAY SAVE* \geq 20-30 minutes on DiDo versus sending back for CTA w/ or w/o IV-Alteplase
 - **It is very important to establish a *parallel* process for IV-Alteplase and Thrombectomy eligibility**
 - Some sites get CT and CTA on arrival if (+C-STAT/RACE by EMS or ED NIHSS \geq 6 or other clinical parameters)
 - Some sites get CT on arrival, leave patient on CT table while assessing and waiting for reports, if acute deficits \leq 4.5 hours and no obvious contraindications, prepare IV-tPA while waiting on CT report, then give IV-Alteplase if eligible while still on CT table, then get CTA H/N if suspect LVO with IV-tPA infusing
 - Either way works better than getting CT, sending patient to room, figuring out if IV-Alteplase eligible, ordering / starting Alteplase, then sending back for CTA later, which may tie up CT table indefinitely while deciding if going back for CTA, or possibly delaying Alteplase, and will definitely delay ED departure, negatively impacting DiDo < 120 min goal.
 - Some sites may choose not to wait for CTA results if issues with timely imaging reports delay door-to-decision
 - In these situations, any case with a high-suspicion of LVO (+C-STAT, NIHSS \geq 6, acute hemiplegia and/or aphasia) ***even in the absence of CTA may be referred early to CSC.***

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- For some sites struggling with D2 imaging results, especially after hours, it may make more sense to get CT/CTA before labs since less emphasis on labs for IV-Alteplase.
 - Stroke alert process should include CT Tech calling Radiology (and virtual radiology after hours) after images are submitted for STAT reads and to have Radiologist call results to ED directly (including after hour Radiology teams) – educate!
 - Make sure CT Tech submits the non-contrast CT images to Radiology *prior* to the CTA images (otherwise CT results may be combined in CTA and you won't be able to track your D2CT results)
 - Work with Radiologists to make sure they document actual time when CT/CTA results are called and to whom they notified
 - Include after hour radiology teams in your feedback and PI plans if needed, be sure all know time goals for STAT CT and CTA
 - Any concerns over contrast-induced allergic reaction or nephropathy should be clearly documented if delay in CTA is anticipated (or MRI needed)
 - If needed, provide your ED physicians and Radiologists copies of the guidelines re CTA on initial workup before Cr known and the research re importance of timely CTA vs. low rates of contrast-induced neuropathy: Can fix kidneys but not brains!!
 - D2Labs: recommendation is to still get CBC, Coags, BMP (including Trop), but if some sites are not doing all labs but at least Coags, goal for Coags should be \leq 35 min (or \leq 25 min if D2N goal is \leq 30 min), at a minimum, must know BG before giving tPA
- **ED BACK-END: Decision-to-Departure: GOAL \leq 60 min; \leq 45 min**
 - **Clock starts when ED MD or ED Neuro makes decision to transfer (again, most often correlates with CT/CTA results)**
 - **Clock stops when patient leaves ED**
 - **Each site should define a consistent point in time in their Stroke Alert Process when transfer to TCC, CSC or PSC should be initiated based on imaging results or other parameter, then track, trend and report your Back-End times to goal $< 60 < 45$**
 - **Key Processes & Workflow**
 - **CT and CTA results called to ED MD < 60 min < 45 min from arrival: Bleed? LVO?**
 - Track when results are called and when ED MD makes decision to transfer out (Stroke Alert PI data tool will have times)
 - **PRE-NOTIFICATION to EMS (Air vs Ground) of possible transfer to TCC, CSC or PSC at same time decision is made to transfer**
 - Pre-notify EMS whether decision was made before or after imaging results
 - Be sure to inform dispatch of any critical drips (IV-Alteplase, cardene) or if on V60 or ventilator so most appropriate ALS or Critical Care dispatched
 - **This alone MAY save 15-30 minutes or more on your DiDo times by pre-notifying EMS before site is known**
 - **This is the amount of time it may take to get accepting facility and physician**

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- Ask EMS to mobilize to ED despite unknown accepting site / MD, inform EMS you will update them on accepting site/MD when known, but to please come to ED since TIME=BRAIN and patient is being transferred somewhere!!
- Notify EMS of final transfer site location and confirm appropriate ALS or critical care level team is already on the way
- EMS *may be* already enroute or on site when transfer site is finally established (depends on your EMS resources)
- **HAVE PATIENT READY WHEN EMS ARRIVES (assumes patient stable enough to transfer, document delay reason!)**
- **PI Notes from DIDO Committee:**
 - NOTE: **There are no *current* exclusions for delay in DiDo \geq 120 min, must report all ED OP Stroke DiDo**
 - Review documentation of any delays for internal feedback and PI and to share with surveyors if they want to know why case or median times are higher than expected, especially if transfer volumes are low and DiDo category median times aren't favorable
 - Note issues with EMS availability, weather-issues impacting transport, referral site response times and other issues that contributed to a delay in Decision-to-Transfer time
 - The analysis / reporting of any DiDo > 120 min cases can be shared with surveyors to show how you team is working on PI
 - Again, for some sites, this decision to transfer *may be* made earlier than waiting for CTA results if high suspicion for LVO and/or if sites doesn't admit any stroke patients or any post-Alteplase patients
 - Analyze any delays in decision and for documentation of any consult times to discuss findings before transfer decision is made
 - **If having issues with getting accepting site and MD, work with that TCC, PSC or CSC to auto-accept for acute strokes (transfer agreement?)**
 - Work with EMS providers to set expectations to *mobilize to ED when pre-notified* – get buy-in!
 - Avoid using the term “stand-by” when pre-notifying EMS, they may not mobilize to ED
 - Some sites report major challenges with getting timely EMS for facility to facility transfers, sometimes resort to calling 911 from ED to get EMS there quicker – it's all about the patient!! TIME=BRAIN
 - Capture times when referral made to TCC, PSC or CSC, when site reached, and when site accepts
 - If decision is NOT to transfer, capture any documentation and times regarding this
 - Be sure to capture time EMS pre-notified and when EMS called back with final transfer site
 - Capture time when EMS arrives and departs for PI opportunities
 - Some sites may determine *earlier* in their Stroke Alert process that a patient will need to be transferred w/o CTA if they have high-suspicion of LVO and/or don't admit stroke patients with or without IV-Alteplase whether MER eligible or not
 - In these situations, your D2Decision Time *should be prior to* CTA imaging result

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3. Provide timely feedback on DiDo times (debriefing)

- Include EMS, ED nurses, ED MD, CT, Lab, Pharmacy (and Neurology if applicable) on DiDo feedback reports
 - Include pre-ED EMS and Transferring EMS providers on reports whenever possible
 - Include whether CPHSS and either C-STAT or RACE reported by EMS and documented
- Try to obtain EMS run reports from EMS or Receiving facility whenever possible (to validate q 15 min monitoring, etc).
- Copy Stroke Program Medical Director, ED and EMS Medical Directors, Administrative Sponsors, Department Heads, House Supervisors, Clinical Managers on feedback reports – establishes administrative support and accountability for hitting goals.
- See example DiDo Feedback reports which include fields for all key data points needed
 - 2 for Ischemic transfers: (Drip-and-Ship) or No Alteplase
 - 1 for Hemorrhagic transfers
- Report DiDo times as well as key times for Stroke Alert and Transfer processes
- Identify areas of strength & PI opportunity
 - **Keep feedback patient-centered**
 - Transparency is important – not pointing fingers but *patient-centered focus*
 - Include names of physicians, nursing, others involved in the Stroke Alert & Transfer
 - Green, Yellow, Red times & notes on feedback report
 - Reference stroke guidelines, TJC standards and goals (whenever applicable)
 - Establish ownership of each part of the DiDo process
 - Active and timely collaboration on PI, action plans and ongoing monitoring

4. Focused and documented PI Action Plans

- DiDo will clearly be a focus of upcoming certification reviews
- Include **ALL** ED Stroke Alert DiDo cases on PI reports, not just those cases that code out to ED Outpatient stroke
- Reviewer will want to see your *written* PI action plans
- Use any existing PI processes at your site (PDCA, LEAN, etc.) to capture (document) your ongoing data analysis, collaboration (including MD and STAFF involvement), PI planning, education and monitoring.