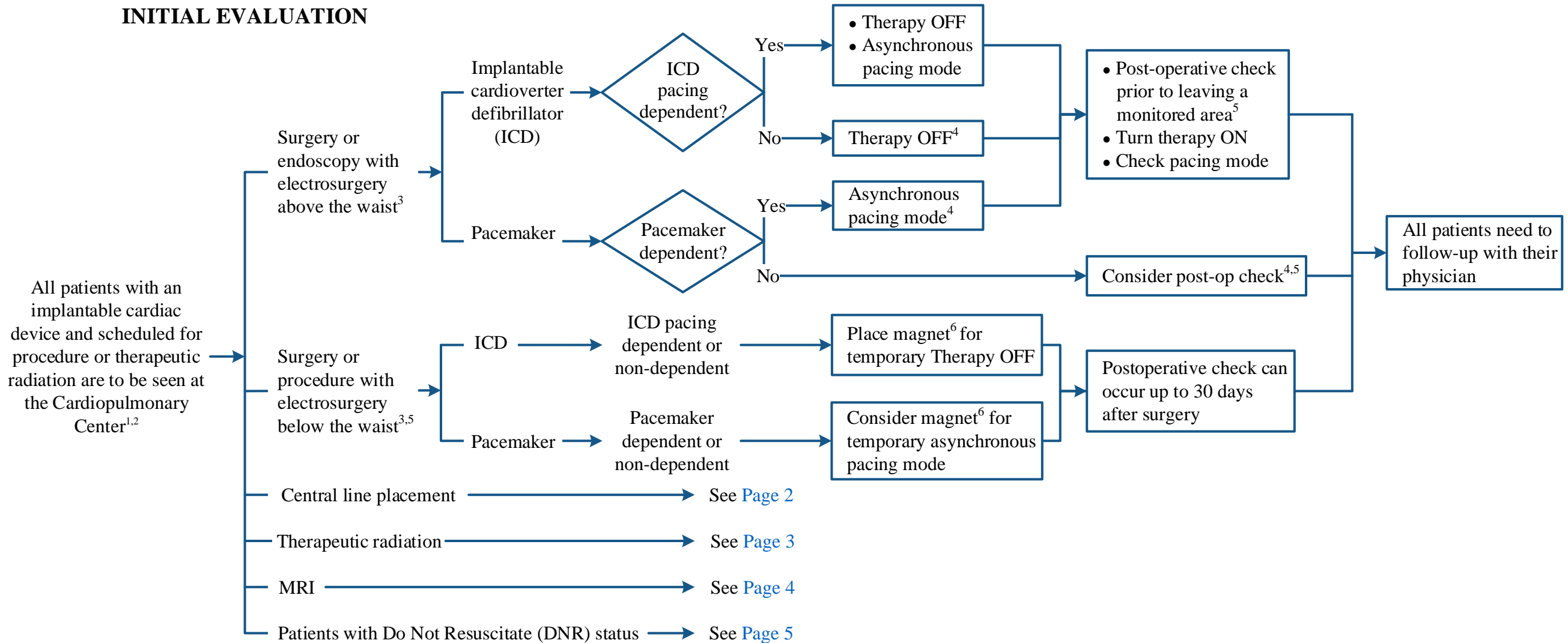


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INITIAL EVALUATION



¹ Device check not needed if completed within the last 3 months and with documented **NORMAL** battery, impedances, and pacing safety margins. Device to be rechecked when transitioning from one treatment to another (*i.e.*, radiation, surgery). After 4:30 PM, weekends, and holidays, cardiology service on-call can be contacted for emergency device checks.

² Recommend all surgical procedures to be scheduled early in the morning

- Pacing dependent or surgery above the waist: Recommend scheduling surgery in main operating room
- Pacing non-dependent and surgery below the waist: Recommend scheduling surgery in either main or ACB operating room

³ Abdominal implants: If surgery between thorax and pelvis, refer to *above* the waist; if outside thorax and pelvis, refer to *below* the waist

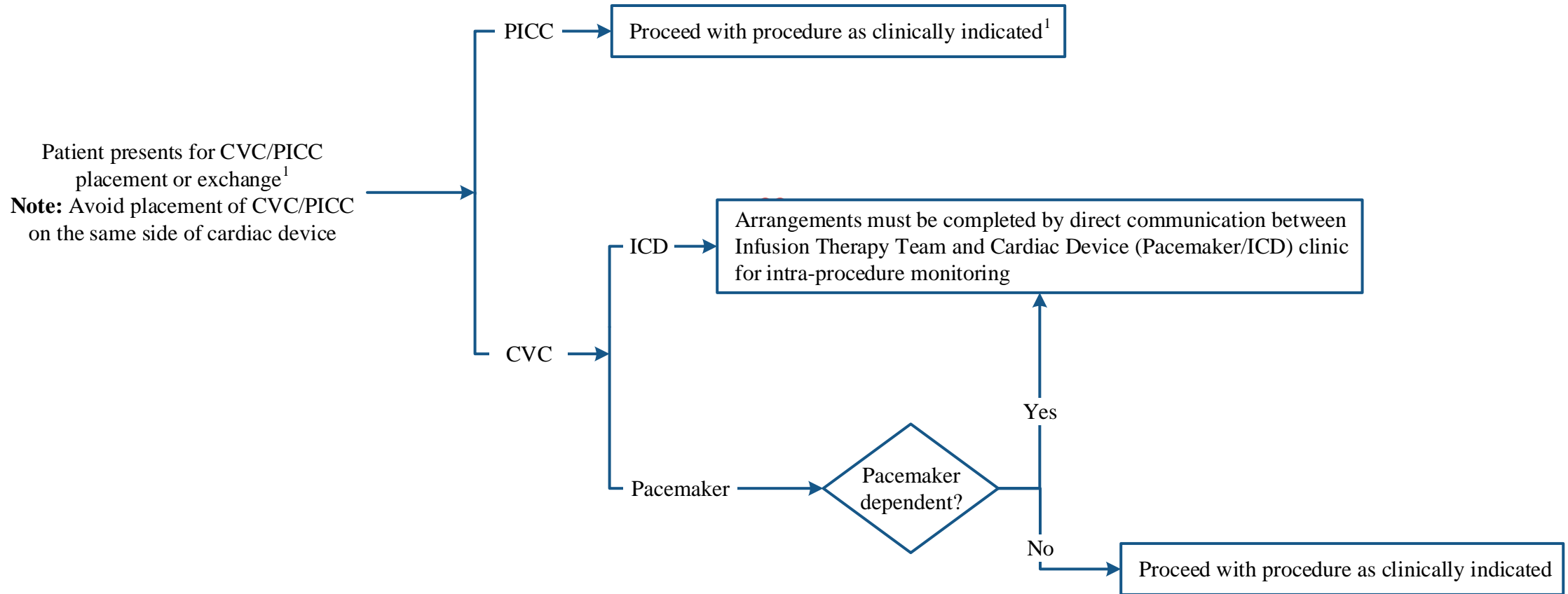
⁴ Follow Cardiac Device (Pacemaker/ICD) clinic recommendations note

⁵ Refer to [Appendix A](#) for Conditions Under Which Postoperative Interrogation is Not Necessary

⁶ Refer to [Appendix B](#) for Magnet Application

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CENTRAL LINE/PERIPHERALLY INSERTED CENTRAL CATHETER (PICC) PLACEMENT



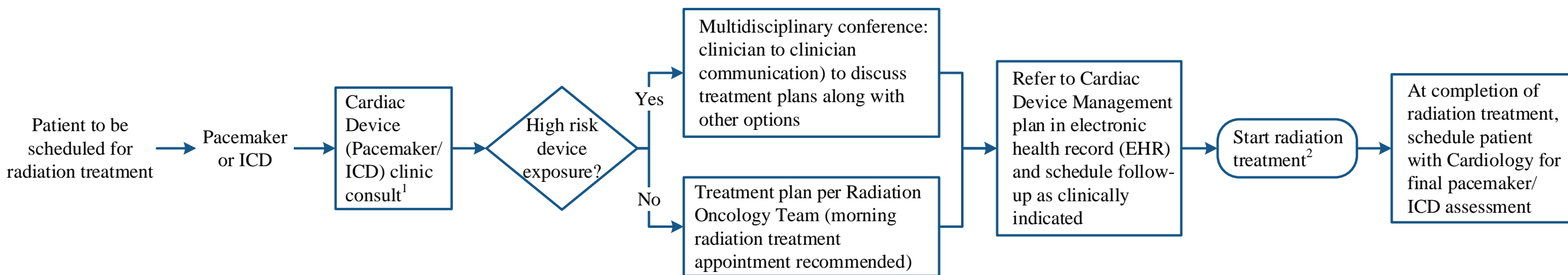
CVC = central venous catheter
 PICC = peripherally inserted central catheter

¹ Special circumstance: If ICD or pacemaker was implanted less than 3 months prior, procedure should be performed under fluoroscopy or in the Cardiac Catheterization Lab

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THERAPEUTIC RADIATION

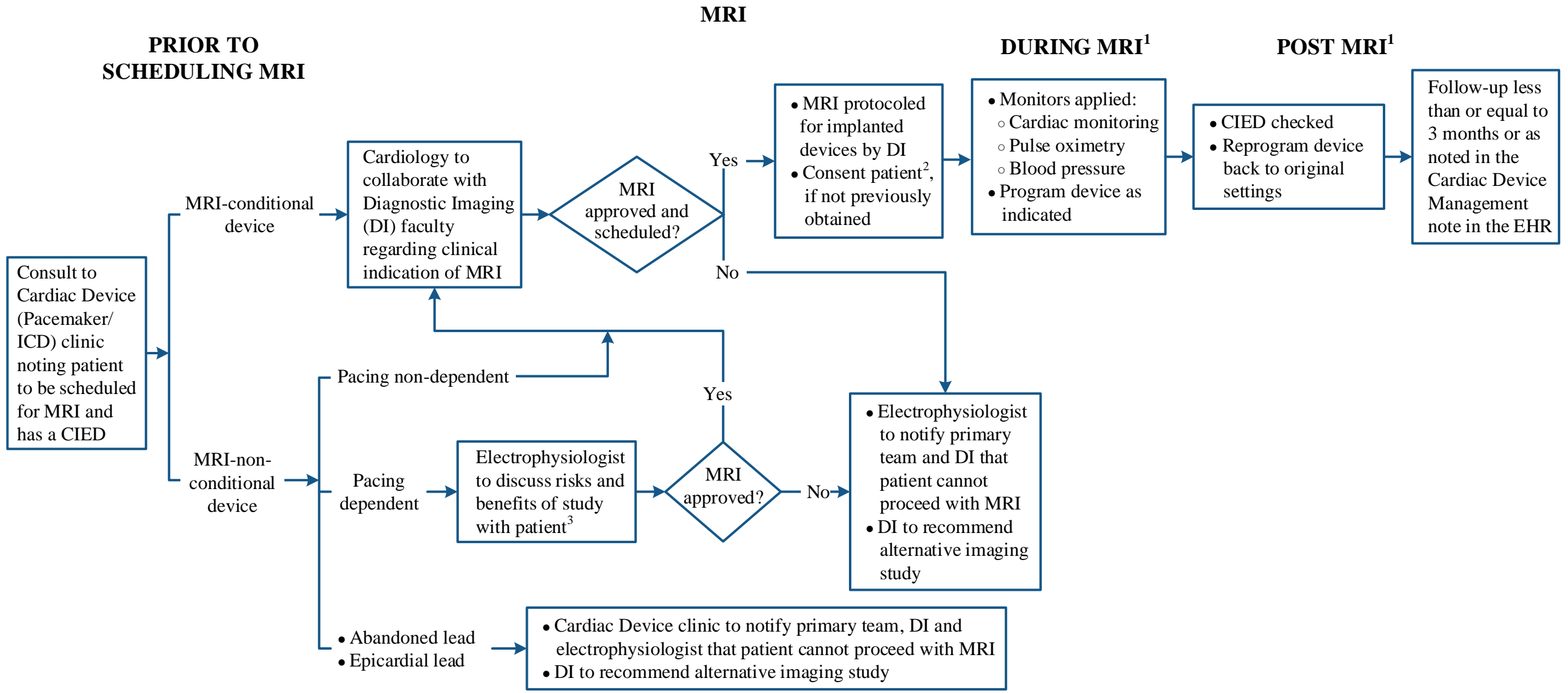
PRIOR TO START OF RADIATION THERAPY



¹ Radiation dose specification documented in clinic note is recommended prior to Cardiac Device (Pacemaker/ICD) clinic consult

² Start radiation treatment in accordance with Division of Radiation Oncology [Electronic Medical Device Policy](#)

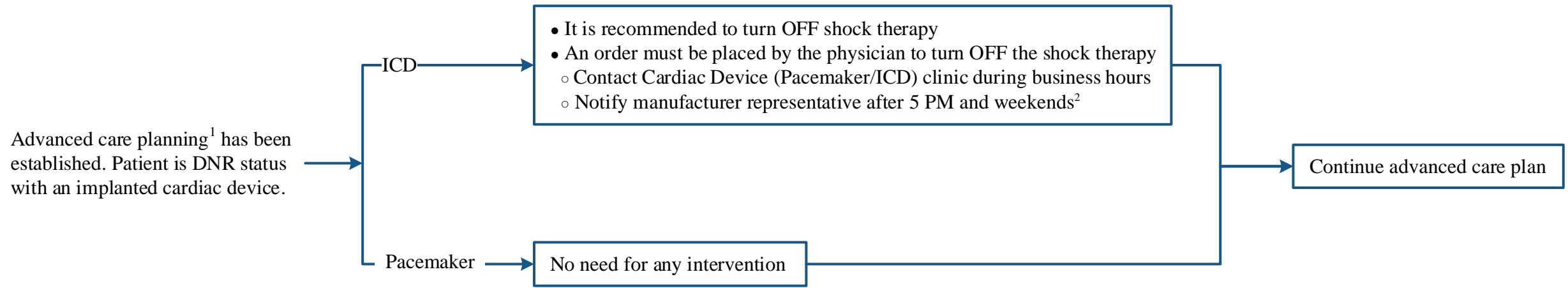
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CIED = cardiovascular implantable electronic device
¹ There will be an appropriate, qualified and credentialed clinician to monitor patient during procedure
² Patient needs two consents: one for MRI study and one for MRI with CIED
³ Ensure appointment is scheduled for discussion

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PATIENTS WITH DO NOT RESUSCITATE (DNR) STATUS



¹ The advanced care planning discussion with the patient/family member should clearly include and document whether or not shock therapy will be turned OFF.

² Manufacturer's information may be obtained in the following manner:

- Cardiac Device (Pacemaker/ICD) clinic progress note
- Patient/Family member has manufacturer's card

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APPENDIX A: Conditions Under Which Postoperative Interrogation is Not Necessary

1. Device is checked preoperatively and found to be working correctly, **and**
2. No programming of device took place perioperatively, **and**
3. No monopolar electrosurgery used (bipolar is acceptable), **and**
4. No blood transfused, **and**
5. No hemodynamic issues noted, **and**
6. Procedures not involving electrosurgery (*e.g.*, endoscopic ultrasonography)

APPENDIX B: Magnet Applications

Pacemaker Magnet Application

Pacemaker Manufacturer	Most Common Magnet Effect (For ranges listed below, the lower rate indicates a shorter remaining battery life)	Programmable (On-Off)
Biotronik	No sustained asynchronous pacing	Yes
Boston Scientific/ Guidant CPI	Asynchronous pacing at 100 or 90 bpm	Yes
Intermedics	No sustained asynchronous pacing	No
Medtronic	Asynchronous pacing at 85 bpm	No
Sorin	Asynchronous pacing at 85 - 96 bpm	No
St. Jude Medical/ Pacesetter	Asynchronous pacing at 86 - 100 bpm	Yes

Defibrillator Magnet Application

Defibrillator Manufacturer	Most Common Magnet Effect (NO defibrillator has asynchronous pacing with magnet)	Magnet Confirmation	Programmable (On-Off)
Biotronik	Disables tachy therapy	None	No
Boston Scientific/ Guidant CPI	Disables tachy therapy	Defibrillator will beep with each R wave or 1/second	Yes
Medtronic	Disables tachy therapy	None	No
Sorin	Disables tachy therapy	Change pacing rate to 90 bpm	No
St. Jude Medical/ Pacesetter	Disables tachy therapy	None	Yes

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SUGGESTED READINGS

Crossley, G. H., Poole, J. E., Rozner, M. A., Asirvatham, S. J., Cheng, A., Chung, M. K., ... Irefin, S. (2011). The Heart Rhythm Society (HRS)/American Society of Anesthesiologists (ASA) expert consensus statement on the perioperative management of patients with implantable defibrillators, pacemakers and arrhythmia monitors: facilities and patient management: this document was developed as a joint project with the American Society of Anesthesiologists (ASA), and in collaboration with the American Heart Association (AHA), and the Society of Thoracic Surgeons (STS). *Heart Rhythm*, 8(7), 1114-1154. doi: <https://doi.org/10.1016/j.hrthm.2010.12.023>

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DEVELOPMENT CREDITS

This practice consensus statement is based on majority opinion of the Pacemaker workgroup at the University of Texas MD Anderson Cancer Center for the patient population. These experts included:

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