Cardiology Handover — Saroj Agarwal

Prepared for: Dr. Nilesh Purushottam, Cardiologist, Surat **Date:** 20 July 2026 **Prepared by:** Family (son), from the primary hospital records listed in §10 **Referral path:** Dr. Talha Meeran (Consultant Cardiologist, Sir H. N. Reliance Foundation Hospital, Mumbai — her treating cardiologist through the Feb–Apr 2026 admission and afterwards) advised a **local Surat review by Dr. Nilesh Purushottam**.

> Every clinical figure below is quoted from a source document; the file for each is named in §10. Where the records are silent or contradict each other, that is stated explicitly rather than smoothed over. **Items resting on the family's account rather than a document are marked as such** — see the footer.

■ PAGE 1 — AT A GLANCE

Saroj Agarwal, F/63 (DOB 27-Aug-1962). Metastatic Ca endometrium, on chemo-immunotherapy, currently in partial response (PET-CT 22 Jun, –47.1 %).

The cardiac story in six lines:

1. **Severe pulmonary arterial hypertension** since Feb 2026, judged **Group 3** (secondary to lung/pleural disease). RVSP **83 → 72 → ~46 (01 Mar nadir) → 91 (at PE) → 70 mmHg** (06 Jul). Never right-heart-catheterised.
2. **Ventricular arrhythmia, Mar 2026** — multifocal PVCs, bigeminy, episodes of **polymorphic PVCs/VT**. Acute treatment lignocaine infusion; then maintained on **amiodarone + mexiletine ± bisoprolol**.
3. **Acute submassive saddle pulmonary embolism, 24–25 Mar 2026 → mechanical thrombectomy** → complicated by shock, haemoptysis, platelets to 51, Hb to 7.3. Anticoagulated since. **No residual pulmonary thrombus** on PET-CT 22 Jun.
4. **LVEF 55–60 % (Feb–Mar) → ~50 % (Jul)**, **new** mild concentric LVH (grade I diastolic dysfunction was already present in Feb). **RV function has recovered** (was FAC 20 % in March; normal now).
5. **QTc 463–529 ms across five ECGs this month**, on amiodarone + mexiletine. **This is the reason for the visit.**
6. **72-hour Holter 10–13 Jul was clean** — sinus, **0 VT runs**, 0 pauses, 0 AF, 0.1 % ectopic burden, and **her symptomatic episode occurred in normal sinus rhythm**.

Current cardiac drugs — confirmed from the Maitreya discharge summary of 17 Jul 2026: Apixaban (Apixalife) 5 mg **BD** · **Amiodarone (Cordarone) 100 mg BD** · **Mexiletine (Mexohar) 150 mg BD** · Spironolactone (Aldactone) 50 mg OD · **Torsemide (Dytor) 20 mg BD** · Tadalafil 20 mg HS. **No beta-blocker.** Also on a **tapering prednisolone course** (40→20→10→5 mg) and **metoclopramide SOS**.

The proposal under review *(this, the referral, and the dose change are the family's account — none appears in the written records)*: Dr. Narendra Tanwar (Maitreya, Surat) suggests **stopping mexiletine as pro-arrhythmic and adding a beta-blocker**. Dr. Talha Meeran (RFH Mumbai, her cardiologist throughout) referred her to you for this decision.

Six things from the record that bear on that decision:

- **A. Amiodarone — not mexiletine — is the QT-prolonging drug.** Mexiletine (class IB) tends to *shorten* QT; it is used therapeutically in long-QT type 3.
- **B. Much of the "prolonged QTc" is a Bazett artefact.** All five July ECGs are Bazett-corrected at **HR 84–94**, where Bazett over-corrects. Raw QT is only **377–440 ms**. On **Fridericia** the same traces read 492 → 432 → 490 → **462** → **450 ms**.
- **C. The doses were already cut ~13 Jul — but the QT data is not yet conclusive.** Amiodarone was halved (200→100 mg BD) and mexiletine cut from TDS to BD, reportedly with Dr. Meeran's approval *(family's account — not documented in the file)*. Since then QTc reads **491 → 481 ms**. **However, the month's lowest reading, 463 ms, was on 07 Jul — before the change**, and the QTc swung 520→463→529 in three days on unchanged doses. **An intervention is in flight but has not yet had time to be judged.** See §6.3.
- **D. A beta-blocker was already tried — and dropped.** Concor (bisoprolol) ran **06–20 Mar 2026**, then **vanished from the 08 Apr discharge list, with no reason documented.** She has recurrent bronchospasm and a pressure-loaded RV.
- **E. Two current drugs are actively depleting her electrolytes. Torsemide 20 mg BD** (wastes K^+ *and* Mg^{2+}) plus **tapering prednisolone** (wastes K^+), while **K^+ is 3.57–3.89** against her own team's **$K^+ > 4$ / $Mg^{2+} > 2$** target — and **no magnesium level has been measured since 08 Mar 2026. Perinorm (metoclopramide) SOS is itself QT-prolonging.**
- **F. Her cardiac biomarkers are reassuring.** Troponin has **never** been raised — 3.2 (Mar), **11.90 even during the saddle PE** (ref ≤15.6). NT-proBNP down from 4089 → **151** (05 Jul), which for an ED patient with acute dyspnoea is in the **"heart failure unlikely"** band (<300) by that report's own criteria.

Never done: right heart catheterisation · coronary angiogram (considered 08 Mar, **deferred**) · thyroid/liver monitoring in 4.5 months of amiodarone.

Competing explanation for her current symptoms: the **05–08 Jul admission was for fever + hypoxia (SpO_2 84 % on air) — viral LRTI with volume overload**, not arrhythmia; "Prolonged QT interval" was a *listed diagnosis*, not the reason for admission. HRCT 05 Jul

shows **pleural effusions re-accumulated and increased**. She left 08 Jul **off oxygen** but was discharged 17 Jul **back on 1 L/min O_2**. Clean Holter + normal troponin + an NT-proBNP in the "HF unlikely" band + recovered RV function all point away from the heart.

1. Patient identifiers

Name	Saroj Agarwal (also spelt Agrawal on Surat reports)
Sex / Age	Female, 63 years
DOB	27 August 1962
ID — RFH Mumbai	0010663186
ID — Maitreya Surat	UHID 59568
Oncological diagnosis	Endometrial adenocarcinoma (ICD-10 C54.1) with lung metastasis (C78.00) — **operated 2022** (per the 08 Jul 2026 Maitreya summary), metastatic recurrence Feb 2026

2. Why this consultation

Dr. Narendra Tanwar (DM Cardiology, Maitreya Multispeciality Hospital, Surat) has noted that her **QT interval remains prolonged**.

- **Current antiarrhythmics (confirmed, 17 Jul discharge summary):** Mexohar (mexiletine) 150 mg **BD** + Cordarone (amiodarone) 100 mg **BD**.
- **Already done ~13 Jul** *(family's account — not documented in the records)*: both were **reduced** (amiodarone halved from 200 mg BD; mexiletine cut from TDS to BD) by the Maitreya team, reportedly with Dr. Meeran's approval, in response to the QT. Only two ECGs have been taken since — see §6.3 before treating this as a demonstrated response.
- **Local suggestion now:** stop mexiletine on the grounds that it is pro-arrhythmic, and add a **beta-blocker**.
- **Second opinion sought** from Dr. Meeran, who has all the historical context; he has referred her locally to you.

3. Active cardiac problem list

1. **Severe pulmonary arterial hypertension** — present from day 1 of the Feb admission, attributed by the RFH team to underlying lung pathology (**Group 3**). RVSP ~70 mmHg on the most recent echo (06 Jul 2026). Never right-heart-catheterised.
2. **Ventricular arrhythmia, currently quiescent** — frequent multifocal PVCs, ventricular bigeminy, and episodes of **polymorphic PVCs / VT** in Mar 2026, treated acutely with lignocaine (Xylocard) then maintained on amiodarone + mexiletine ± bisoprolol. A 72-hour Holter in Jul 2026 was **clean**.
3. **Prolonged QTc, 463–529 ms across five ECGs this month**, on amiodarone + mexiletine. Doses were cut ~13 Jul; the two readings since (491, 481 ms) sit inside the pre-reduction range, so it is **too early to call it a response** (§6.3). Formally listed as a discharge diagnosis (R94.31).
4. **Prior acute submassive saddle pulmonary embolism (24–25 Mar 2026)** — mechanical thrombectomy, then anticoagulated. **No residual pulmonary arterial thrombus** on the 22 Jun 2026 PET-CT.
5. **Mild LV systolic decline** — LVEF 55–60 % (Feb–Mar) → **~50 %** (Jul), with **new** mild concentric LVH; grade I diastolic dysfunction was already documented on the 20 and 26 Feb echoes, so it is not new.
6. **Re-accumulating bilateral pleural effusions** (HRCT 05 Jul) — the likely driver of her current breathlessness.
7. **Ischaemia never formally excluded** — coronary angiography was considered on 08 Mar 2026 and **deferred**; no angiogram has ever been done. See §8.

4. Chronological narrative

4.1 Before the Mumbai admission

- Endometrial adenocarcinoma, **operated 2022** (the 08 Apr RFH summary says only "operated 3 years back"; the 08 Jul Maitreya summary gives the year).
- Feb 2026: recurrence with **left pleural effusion and lung collapse**; intercostal drain in situ from **12 Feb 2026** at an outside hospital. Pleural fluid cytology (14 Feb) — **atypical cells suggestive of carcinoma, large-cell morphology**. CA-125 635.50 (14 Feb). NT-proBNP 1738 high and CPK-MB 34.67 high on 11 Feb, with Troponin-I negative.

4.2 Sir H. N. Reliance Foundation Hospital, Mumbai — 20 Feb to 8 Apr 2026 (48 days)

Transferred in with breathlessness, cough and bilateral pedal oedema. Attending: Dr. Darshit Shah (Medical Oncology). Cardiology: Dr. Talha Meeran.

20 Feb — severe PAH found on day 1. Echo: **RVSP 83 mmHg**, LVEF 55 %, mildly dilated RV with fair systolic function (TAPSE 16 mm), grade I diastolic dysfunction, mild TR. Chemotherapy started same day (Paclitaxel + Carboplatin, C1D1). NT-proBNP 1761; **INR 2.47 / PT 27.4 s on admission** — markedly deranged. (Her anticoagulant status on transfer from the outside hospital is not recorded, so the cause is not established.)

24–26 Feb — airway crisis. Stridor; nasopharyngolaryngoscopy showed **bilateral vocal cords in paramedian position with restricted mobility** and minimal glottic chink. Desaturation episode with **irregular pulse** noted (25 Feb, MET call). On 26 Feb she underwent **left vocal cord lateralisation** under GA; desaturated intraoperatively, required intubation and ICU ventilation. Pre-op echo: RVSP 72 mmHg, LVEF 60 %. The PAH was formally attributed to **underlying lung pathology (Group III)**.

01 Mar — echo on ICU: LVEF 60 %, mildly dilated RV with normal function, mild TR, **PASP ~46 mmHg**. Telemetry: **sinus rhythm with intermittent ventricular bigeminy**. > ⚠ This ~46 mmHg figure appears only inside the discharge-summary narrative for **01 March**; there is no standalone echo report for it in the records. (An earlier internal note in this archive mis-dated it to "early April" — that is wrong.)

06 Mar — the arrhythmia problem begins. Cardiology review noted **frequent PVCs and NSVT**; antiarrhythmic therapy started — **Cordarone (amiodarone) + Concor (bisoprolol)**.

08 Mar — the worst arrhythmic day. Episodes of **polymorphic PVCs and VTach with palpitations**, managed with a **Xylocard (lignocaine) infusion** plus antiarrhythmics. **Coronary angiography was considered but deferred after cardiology discussion.** Same day: hs-Troponin I **3.2 pg/mL (normal, ref ≤15.6)**; Magnesium 2.21 mg/dL (normal).

09–13 Mar — acute bronchospasm 09 Mar (likely microaspiration), treated with steroids. Arrhythmias settled. Regimen through this period: **Concor, Cordarone, Mexiletine**, Lasix, Aldactone, Tadalafil. IV potassium and magnesium correction given, with an explicit target of **K^+ > 4 and Mg^{2+} > 2** — i.e. the team was already managing her electrolytes with the ventricular irritability in mind.

14–17 Mar — 72-hour Holter (RFH). Ordered by Dr. Meeran. Result: sinus rhythm, avg 75 bpm (52–106). **1811 PVCs (<1 %)**, 1809 isolated, 1 couplet, **60 episodes of ventricular bigeminy**, **0 VT runs, 0 pauses, 0 AF, 0 AV block**. Interpretation: *"Underlying normal sinus rhythm with occasional multifocal ventricular ectopies along with brief runs of ventricular bigeminy. No NSVT or VTACH."* On 17 Mar, ECG **QTc 435 ms** — i.e. her QTc was *normal* at that point on the same drug class. (The correction method is not stated on that record, and she was **also on bisoprolol** at the time, which slowed her rate.)

20 Mar — MET call for **chest pain**; haemodynamically stable, managed symptomatically. Cardiac drugs continued (Concor, Cordarone, Tadalafil, Mexiletine, Lasix, Aldactone).

23–25 Mar — the pulmonary embolism. Acute breathlessness with **hypoxia, SpO_2 77–78 % on room air** (23 Mar). Clexane started 24 Mar. - **CTPA (24 Mar):** *"Acute submassive pulmonary embolism with **saddle thrombus** involving the main pulmonary trunk into the right and left main pulmonary artery, lobar and segmental branches, associated with **RV strain** and dilated pulmonary arteries."* Pulmonary trunk 35 mm. Completely occluding thrombus in the proximal left upper lobar segmental branch; partially obstructive defects throughout the right lower, middle and upper lobe branches. Moderate bilateral pleural effusions. - **Echo (24 Mar, Dr. Maulik Parekh, Interventional Cardiology):** large saddle thrombus at the RPA/LPA bifurcation; **RVSP 91 mmHg**; moderate-to-severe TR; **dilated RA (40 mm) and RV (50×45×77 mm) with RV systolic dysfunction, FAC 20 %**; LVEF 60 %. - **NT-proBNP 4089 pg/mL** (24 Mar) — her peak. - **hs-Troponin I only 11.90 pg/mL (25 Mar) — still within normal limits (≤15.6)** despite a saddle PE with RV dysfunction. Worth noting: she has *never* had a raised troponin in these records. - Troponin was checked specifically to decide on **ICU-based thrombolysis**.

~25–26 Mar — mechanical thrombectomy. > ⚠ **Documentation gap.** The procedure itself is confirmed three times — the discharge summary records *"Post pulmonary thrombectomy status with high PESI risk"* (04 Apr), a blood culture of 31 Mar is labelled *"Clinical Details: Post thrombectomy"* (site: left IJV), and the Maitreya echo of 06 Jul records *"S/P Mechanical Thrombectomy (03/2026)"*. **But there is no procedure note, no exact date and no named operator anywhere in the records.** The family recall a "Dr. Rajesh"; that name does not appear in any document. The only interventional cardiologist named anywhere is **Dr. Maulik Parekh**, who reported the 24 Mar echo. *Please request the procedure note from RFH if the technical detail matters.*

26 Mar – 3 Apr — post-thrombectomy complications. Intubated with **persistent circulatory shock requiring vasopressors** (noradrenaline + vasopressin); **ET-tube bleeding and haemoptysis**; **Hb fell 12.9 → 7.3 g/dL** and **platelets fell 109 → 51 ×10^9/L**; anticoagulation withheld, then cautiously restarted 31 Mar as platelets recovered. Transfused. Extubated 28 Mar. New right middle/lower lobe consolidation with fever 31 Mar — broad-spectrum antibiotics (Zavicefta, Aztreonam); blood cultures **no growth**. Acute kidney injury: creatinine peaked **1.74 mg/dL (27 Mar)**, recovered to 0.71 by 29 Mar. Vasopressors off by 02 Apr.

06 Apr — chemotherapy C3D1 given. **07 Apr** — desaturation to 84–85 % after a barium swallow study; discharge deferred. **08 Apr — discharged, haemodynamically stable**, on 1–2 L/min oxygen.

4.3 Interval, April–June 2026 — recovery

- **13 Apr** — daycare chemotherapy (C3D8 Paclitaxel + Carboplatin + C2 Dostarlimab). Cardiac regimen unchanged (§6).
- **01 May** — right-leg swelling investigated. **Right lower limb arterial & venous Doppler: NO DVT.** Veins compressible, normal phasic flow. Swelling attributed to **moderate-to-severe subcutaneous oedema**, with subtle superficial petechial/haemorrhagic change in the right thigh consistent with her anticoagulation. Incidental **mild atheromatous plaque and intimo-medial thickening** in the leg arteries.

- **NT-proBNP normalised**: 4089 (24 Mar) → **97.2 pg/mL (15 Jun)**.
- **22 Jun — follow-up whole-body FDG PET-CT. RECIST 1.1 Partial Response, –47.1 %.** Marked regression of cervical, mediastinal, abdominal and inguinal nodal disease and of peritoneal/omental deposits; interval reduction in bilateral malignant pleural disease. Critically for you: **"No residual pulmonary arterial thrombus"** on the CT component. Last chemo dose 15 Jun 2026.

4.4 July 2026 — Maitreya Hospital, Surat (two separate admissions)

Admission 1 — 05 → 08 Jul 2026 (IPD I/0726/907), under Dr. Sanjay Agrawal, Physician

> **Correction to an earlier assumption:** this admission is often described as being "for chest pain / syncope". The discharge summary shows it was not. It was an **emergency admission with fever and hypoxia.**

Presentation (verbatim): high-grade fever with cough and whitish expectoration, breathlessness, nausea and vomiting, mild abdominal pain, **bilateral pedal oedema +**, generalised weakness. On arrival: conscious, oriented, **hypoxic and febrile — Temp 101 °F, SpO_2 84 % on room air**, BP 110/70, HR 100/min. Chest: bilateral rhonchi with left lower zone signs. **Bilateral pedal oedema +++.**

Formal discharge diagnoses (ICD-10): Viral LRTI (J22) · B/L pleural effusion (J90) · Endometrial adenocarcinoma (C54.1) with lung metastasis (C78.00) · Pulmonary embolism (I26) · Pulmonary hypertension (I27.0) · **Prolonged QT interval (R94.31)**.

Course: admitted to **ICU** on oxygen for hypoxia. Bedside 2D echo showed good LV function; **diagnosed with volume overload** and treated with **antibiotics + a Lasix infusion**, nebulisation and supportive care. Improved steadily; shifted to ward 06 Jul; **oxygen tapered off entirely by 07 Jul**, saturating off oxygen. Discharged 08 Jul, "Improved".

Also from this admission: she was given **IV potassium chloride ×2 and IV magnesium sulphate ×1 on 06 Jul** (per the pharmacy invoices) — the only magnesium administration on record since March.

Her history as recorded here: endometrial adenocarcinoma **operated 2022**; lung metastasis; **6 cycles of chemotherapy and 6 cycles of immunotherapy** completed; past history of pulmonary embolism.

- **05 Jul — HRCT chest (Navkar): moderate bilateral pleural effusions, left > right, INCREASED in volume vs the 22 Jun PET-CT** (right 150–180 cc, left 180–200 cc). **No acute infectious pneumonia. No suspicious lung nodule.** Chronic subsegmental atelectasis LLL + lingula. **Pulmonary artery mildly prominent at 3.4 cm** — consistent with PAH. No pericardial effusion; cardiac size normal.
- **05 Jul — admission bloods:** Hb **11.4** (highest since 24 Mar, when it was 12.9), WBC 7270, platelets 187 000. **Creatinine 1.08** (top of range). Na 136, K **3.57**. **CRP 9.0 mg/L (high)**, ESR 18 (high), N/L ratio 4.38 (high), lymphopenia. **NT-proBNP 151.4 pg/mL** — in the "heart failure unlikely" band for an ED patient with acute dyspnoea (<300), and far below her Feb/Mar peaks. See the reference-range note in §5.3.
- **06 Jul — 2D Echo (Dr. Narendra Tanwar):** Mild concentric LVH; no RWMA at rest; jerky IVS; **LVEF ~50 %**; grade I diastolic dysfunction; mild MR; **mild-to-moderate TR**; **SEVERE PAH, RVSP/PASP 70 mmHg**; mildly dilated RA and RV with **normal RV function**; IVC 12 mm, good collapse; no clot, vegetation or pericardial effusion. Report carries the note: *"Normal Echo does not rule out coronary artery disease."*
- **07 Jul — creatinine 1.20 mg/dL** (above range), Na 135, K 3.89.
- **06 Jul — iron studies:** Iron 55.7, TIBC 310, transferrin sat 17.96 %, ferritin 60.7 — **no iron deficiency**. Urine routine normal.

10–13 Jul — 72-hour Holter (Predicardio, prescribed by Dr. Talha Meeran; indications **syncope, chest pain**). **This is the single most reassuring investigation in the file:** - Predominant rhythm **sinus**. 382 391 beats. HR min 78 / avg 88 / max 115. Longest RR 1.07 s. - Ventricular ectopics **512 total (0.1 % burden)**, 502 isolated, 5 couplets. **0 VT runs.** - **No supraventricular ectopics. No atrial fibrillation. No SVT. No AV block. No pauses >2.5 s.** - **One patient-triggered event, 11 Jul 09:00** — "shortness of breath, weakness/fatigue, chest discomfort/pain" — **the rhythm during and around that episode was normal sinus rhythm.** - Compare with March: **PVC burden fell from 1811 to 512.** The July report notes bigeminy forms are present but **does not state an episode count**, so no numerical comparison with March's 60 episodes is possible.

Admission 2 — 13 → 17 Jul 2026 (IPD I/0726/1017, DOA 13 Jul 2:24 pm)

Chemotherapy appears to have been given during this admission (**Inj Frastim/filgrastim 300 mcg dated 14-07-2026** on the discharge prescription — G-CSF is given ~24 h post-chemo). **Discharged 17 Jul on 1 L/min oxygen, SpO_2 93 %, BP 130/80, PR 83** — i.e. **she has become oxygen-dependent again** since leaving the previous admission off oxygen on 08 Jul.

- **ECG 13 Jul 14:52:** sinus 86 bpm, PR 166, QRS 86, **QT/QTc 410/491 ms**. Large PtfV1, poor R-wave progression V2, inverted T V3, **RVH**, **prolonged QT**, low voltage in chest leads, indeterminate axis. Confirmed by Dr. Narendra Tanwar.
- **ECG 17 Jul 10:58:** sinus 87 bpm, PR 143, QRS 94, **QT/QTcBz 398/481 ms**. Large PtfV1, **prolonged QT**, low voltage limb leads, indeterminate axis. > ⚠️ The 17 Jul trace carries **no patient name** and prints the machine default "Male"; it is attributed to her on the family's account alone. Please confirm against the hospital's copy.

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5. Objective data — trends at a glance

5.1 Echocardiography

Date	RVSP / PASP	LVEF	RV	TR	Reporter
20 Feb 2026 *	**83 mmHg**	55 %	mildly dilated, fair function, TAPSE 16	Grade I	Dr. Talha Meeran
26 Feb 2026	**72 mmHg**	60 %	mildly dilated, normal function, TAPSE 21	Mild	Dr. Talha Meeran
01 Mar 2026 *	**~46 mmHg**	60 %	mildly dilated, normal function	Mild	narrative only — no report
24 Mar 2026 (PE)	**91 mmHg**	60 %	**dilated 50×45×77, RV dysfunction, FAC 20 %**	Mod–severe	Dr. Maulik Parekh
06 Jul 2026	**70 mmHg**	**~50 %**	mildly dilated, **normal function**	Mild–mod	Dr. Narendra Tanwar

* **20 Feb — the two sources disagree.** The standalone echo report (Dr. Meeran) gives **RVSP 83 mmHg, LVEF 55 %**; the 08 Apr discharge summary, describing the same study, says *"LVEF of 60% with severe PAH (PASP 78 mmHg)"*. The table uses the standalone report as the more primary document, but the discrepancy is worth knowing since 83 mmHg anchors the trajectory. * **01 Mar** — from the discharge-summary narrative only; no standalone echo report exists for it.

Read: PAH is better than the March PE peak but **has not returned to the ~46 mmHg nadir** — it has re-risen in step with the re-accumulating pleural effusions. RV function has *recovered*. LVEF has drifted 55–60 % → 50 % (different labs/operators, so interpret with care).

5.2 ECG / QTc — the reason for this visit

Date	HR	PR	QRS	Raw QT	QTc reported (Bazett)	QTcF (Fridericia)*	Other
17 Mar 2026	—	—	—	—	**435 ms** †	—	sinus; on amiodarone + mexiletine **+ bisoprolol**
06 Jul 2026	84	—	—	440	**520 ms**	**492 ms**	RVH, incomplete RBBB, abnormal Q III
07 Jul 2026	90	—	—	377	**463 ms**	**432 ms**	RVH, T-inversion V3–V4
08 Jul 2026	94	—	—	422	**529 ms**	**490 ms**	RVH, incomplete RBBB
13 Jul 2026	86	166	86	410	**491 ms**	**462 ms**	RVH, poor R progression, low voltage chest
17 Jul 2026	87	143	94	398	**481 ms**	**450 ms**	low voltage limb leads

* QTcF calculated by the family from the machine's own printed QT and HR, for discussion only — not a machine output. Recalculating Bazett from those same printed values reproduces the machine's QTc to within 1–2 ms on all five traces, which confirms **every July trace is Bazett-corrected**.

Two observations to put to you: 1. **The raw QT is 377–440 ms throughout — not extreme.** The alarming QTc numbers are substantially an artefact of **Bazett correction at heart rates of 84–94 bpm**, where Bazett systematically over-corrects. On Fridericia the same tracings read **492 → 432 → 490 → 462 → 450 ms**. The direction of travel is favourable on either correction, and the two most

recent traces (13 and 17 Jul) are the lowest of the series. 2. Her QTc was **435 ms in March** on the *same* drug class — when her heart rate was slower (avg 75 vs 88 bpm) and her potassium was being actively driven above 4.

5.3 Cardiac biomarkers

Date	NT-proBNP	hs-Troponin I (ref ≤15.6 pg/mL)
11 Feb 2026 (outside)	1738 (high)	negative
20 Feb 2026	1761 (high; RFH ref 0–125)	—
08 Mar 2026	—	**3.2 (normal)**
24 Mar 2026 (PE)	**4089 (high; RFH ref 0–125)**	—
25 Mar 2026	—	**11.90 (normal)**
15 Jun 2026	**97.2 — normal** (Nobel ref 0–531)	—
05 Jul 2026	**151.4 — see note** (Maitreya)	—

> ⚠️ **Reference ranges differ between the three labs, so this column is not a like-for-like series.** The 05 Jul Maitreya report prints **no fixed range** — it states *"Refer Interpretation"* and gives: primary-care suspected **chronic** HF, <75 y → **<125 unlikely**; but **emergency-department patients presenting with acute dyspnoea, whatever the age → <300 pg/mL HF unlikely**. She was admitted as an **emergency with dyspnoea**, so by the criterion the report itself designates for her situation, **151.4 falls in the "heart failure unlikely" band.** It is only "raised" against the chronic-HF threshold, which is not the applicable one. Either way it is an order of magnitude below her Feb/Mar values.

5.4 Electrolytes & renal — directly relevant to QT and to drug choice

Date	K^+	Na^+	Creatinine
26 Feb 2026	3.16 (low)	141.1	0.67
13 Mar 2026	3.56	140.2	0.88
16 Mar 2026	3.78	—	—
27 Mar 2026 (AKI)	3.52	135.9	**1.74**
03 Apr 2026	**2.87 (low)**	**149.8 (high)**	0.71
13 Apr 2026	3.57	137.2	0.63
15 Jun 2026	4.7	139	0.93
05 Jul 2026	**3.57**	136	**1.08**
07 Jul 2026	**3.89**	135	**1.20**

Three flags: - **Potassium is running 3.5–3.9**, i.e. below the **K^+ > 4** target the RFH team explicitly set for her in March when she was ectopic. She received **IV KCl ×2 and IV $MgSO_4$ ×1 on 06 Jul**, and was on a **Lasix infusion** during that admission. - **No serum magnesium *level* has been measured since 08 Mar 2026** (2.21 mg/dL, normal) — though magnesium was *given* IV on 06 Jul. The same team had set a **Mg^{2+} > 2** target. **She is now on Dytor (torsemide) 20 mg BD plus a tapering prednisolone course — two drugs that actively deplete potassium, and in torsemide's case magnesium too — with a prolonged QT and no magnesium monitoring.** - **Creatinine is climbing**: 0.71 (06 May), 0.78 (18 and 25 May) → 0.93 (15 Jun) → 1.08 (05 Jul) → **1.20 (07 Jul)**. Relevant to apixaban dosing, to diuretic titration, and if any renally-cleared antiarrhythmic (e.g. sotalol) is being contemplated.

5.5 Holter comparison

	14–17 Mar 2026 (RFH)	10–13 Jul 2026 (Surat)
Rhythm	Sinus	Sinus
HR min / avg / max	52 / 75 / 106	78 / 88 / 115
PVCs	**1811** (<1 %)	**512** (0.1 %)
Couplets	1	5
VT runs	**0**	**0**
Bigeminy episodes	**60**	present, **count not stated in the report**
SVE	5 (all isolated)	0
AF / SVT / AV block / pauses	0 / 0 / 0 / 0	0 / 0 / 0 / 0
Symptom correlation	—	**1 event (11 Jul) — occurred in NSR**

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6. Medications

6.1 Cardiac regimen at RFH discharge (08 Apr 2026), per Dr. Talha Meeran

Drug	Dose
Clexane (enoxaparin) 0.6 mL SC	1-0-1 × 14 days, **then**
Apixaban 5 mg	1-0-1 (continuing)
Cordarone (amiodarone) 200 mg	1-0-1
Mexohar (mexiletine) 150 mg	**1-1-1**
Aldactone (spironolactone) 50 mg	0-1-0
Tadalafil 20 mg	0-0-1 (for PAH)

Also at discharge: Pan 40 BD, Emeset 8 TDS, Foracort + Duolin nebs, short courses of Effcorlin and Augmentin.

6.2 CURRENT regimen — confirmed from the Maitreya discharge summary of 17 Jul 2026

Cardiac / cardiovascular:

Drug (as printed)	Generic	Dose	Change vs April
Tab **Apixalife 5 mg**	**Apixaban**	1-0-1 (BD)	unchanged
Tab **Cordarone 100 mg**	**Amiodarone**	1-0-1 (BD)	**halved** from 200 mg BD
Cap **Mexohar 150 mg**	**Mexiletine**	1-0-1 (**BD**)	**reduced** from TDS
Tab **Aldactone 50 mg**	Spironolactone	0-1-0 (OD)	unchanged
Tab **Dytor 20 mg**	**Torsemide**	1-1-0 (**BD**)	**NEW** — loop diuretic
Tab **Tadalafil 20 mg**	Tadalafil	0-0-1 (HS)	unchanged (for PAH)

⛔ **There is no beta-blocker on this list.**

Other drugs that bear on the QT question:

Drug	Why it matters here
Tab Omnacortil (prednisolone) — 40 mg × 5 d → 20 → 10 → 5 → stop	Steroid; **wastes potassium**
Tab Dytor (torsemide) 20 mg BD	Loop diuretic; **wastes potassium AND magnesium**
Cap Perinorm CD (metoclopramide) SOS	**Itself a QT-prolonging antiemetic**
Neb Foracort BD, Tab Doxolin M, Tab DMR, Syp Codistar	Respiratory — she remains bronchospastic
Tab Doxy 100 mg BD, Inj Frastim 300 mcg (14-Jul), Tab Endace 160 mg TDS	Antibiotic / post-chemo G-CSF / appetite
Tab Voqozon 20 mg (vonoprazan), Caltrol D3, Numylin D, Calcore, Threptin, Purple Pro	Acid suppression, vitamins, nutrition

Condition at that discharge (17 Jul): haemodynamically stable, **BP 130/80, PR 83, SpO_2 93 % on 1 L/min O_2 support. Follow-up given:** Dr. Sanjay Agrawal in 5 days; Dr. Kaushal Patel (oncology) in 7 days.

6.3 A dose reduction has already been made — but read the QT data carefully

Per the family (not documented in the file), the **amiodarone and mexiletine doses were cut about 13 July 2026 by the Maitreya team, with Dr. Talha Meeran's approval**, specifically in response to the prolonged QT.

The full July QTc series — all five ECGs, not just those after the change:

	06 Jul	07 Jul	08 Jul	~13 Jul	13 Jul	17 Jul
	before	*before*	*before*	← **doses cut**	*after*	*after*
QTc (Bazett)	520	**463**	529		491	481
QTcF (Fridericia)	492	**432**	490		462	450

> ⚠️ **Be careful about reading this as proof the reduction worked.** The **lowest QTc of the entire month — 463 ms (QTcF 432) — was recorded on 07 July, six days *before* the doses were changed.** Across 06–08 July, on unchanged doses, the QTc swung 520 → 463 → 529, a **66 ms day-to-day range**. Both post-reduction values (491, 481) sit *inside* that pre-reduction range.
>
> **What can fairly be said:** since the reduction the QTc has been **less erratic** (481–491 vs 463–529) and the two most recent values are below the pre-reduction mean. **What cannot fairly be said:** that the fall from 529 to 481 is demonstrably a drug effect — day-to-day variability alone could produce it. Two readings is not a trend.
>
> This still bears on today's decision, but as an open question rather than a settled one: **a change was made ~1 week ago and has not yet been given enough time, or enough ECGs, to be evaluated.**

6.4 ⚠️ A beta-blocker has already been tried — and dropped

Concor (bisoprolol) was started on 06 Mar 2026 alongside amiodarone when the PVCs/NSVT appeared, and it appears in the ward notes through **12 Mar and 20 Mar**. It is **absent from the 08 Apr discharge list and from the 13 Apr daycare list.**

The records do not state why it was stopped. This seems worth establishing before a beta-blocker is re-introduced. Two plausible reasons are visible in the record and both are relevant: - **Recurrent bronchospasm** — documented acute bronchospasm 09 Mar and 20 Mar, and she remained on Foracort/Duolin nebulisers at discharge. - **Severe PAH with a pressure-loaded RV** — beta-blockade is conventionally approached with caution here.

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7. Other active problems that constrain cardiac management

- **Bilateral vocal cord palsy**, status post **left vocal cord lateralisation (26 Feb 2026)**. Ongoing aspiration risk; on a modified/pureed diet with safe-swallow precautions. FEES (18 Mar) — improved approximation, no overt aspiration.
- **Recurrent bronchospasm** on inhaled steroid + bronchodilator; **viral LRTI treated 05–08 Jul**, currently on doxycycline and a tapering prednisolone course.
- **Malignant pleural effusions, currently re-accumulating** (HRCT 05 Jul), with a **volume-overload component** (diagnosed 05 Jul, treated with Lasix infusion, now on oral torsemide).
- **Oxygen-dependent again** — off oxygen entirely on 08 Jul, but discharged 17 Jul on 1 L/min at SpO_2 93 %.
- **Metastatic Ca endometrium in partial response** (PET-CT 22 Jun, –47.1 %), on chemo-immunotherapy. The PET-CT records the last dose as **15 Jun 2026**, but the 17 Jul discharge prescription includes **Inj Frastim (filgrastim) dated 14-07-2026**, which implies

a further cycle during the 13–17 Jul admission. **Confirm the actual last chemotherapy date with Dr. Kaushal B. Patel** (her Surat oncologist).

- **Prior severe thrombocytopenia and major bleeding** in late March (platelets to 51, haemoptysis, Hb to 7.3) while anticoagulated — relevant to any future antithrombotic decision.
- **Anaemia largely resolved** (Hb 11.4 on 05 Jul); no iron deficiency.

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8. Documentation gaps — things the records genuinely do not contain

1. **No thrombectomy procedure note** — no date, no operator, no technical detail. Confirmed only indirectly (§4.2).
2. ~~No Maitreya discharge summary or prescription~~ — **RESOLVED.** Both July discharge summaries (08 Jul and 17 Jul) are now in the file, and §6.2 is taken directly from the 17 Jul prescription.
3. **No right heart catheterisation** — PAH severity and classification rest entirely on echo estimates and the CTPA/HRCT appearance.
4. **No coronary angiogram, ever.** It was considered on 08 Mar 2026 and deferred. Her Jul echo explicitly notes that a normal echo does not exclude CAD, and she has documented peripheral atheroma on the May leg Doppler. **Chest pain recurs through her history** — a MET call on 20 Mar 2026, the stated indication on the 10–13 Jul Holter requisition, and her own logged symptom on 11 Jul — though the 05–08 Jul admission itself was for fever and hypoxia rather than chest pain.
5. **No serum magnesium level since 08 Mar 2026** — despite a prolonged QT, IV magnesium replacement on 06 Jul, and current torsemide + prednisolone.
6. **No thyroid function tests anywhere in the record** — she has been on amiodarone since 06 Mar 2026, i.e. **about 4.5 months**. TSH/T4 and LFTs are the standard monitoring for that.
7. The **17 Jul ECG carries no patient identifiers** (§4.4).

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9. Questions the family would like to put to Dr. Purushottam

These are framed as questions, not opinions — they are the points where the record seems to bear on the decision.

1. **Which of the two drugs is actually prolonging her QT?** Amiodarone is a class III agent whose defining effect is QT prolongation. Mexiletine is class IB and, if anything, tends to **shorten** the QT. Given that, is stopping mexiletine the right lever for a QT problem — or should the amiodarone be the focus?
2. **How much of the "prolonged QTc" is a Bazett artefact?** Her raw QT is 377–440 ms at heart rates of 84–94 bpm, and all five July traces are Bazett-corrected. On Fridericia the last two read 462 and 450 ms. Is that worth confirming before the regimen is changed?
3. **Should potassium and magnesium be optimised first — and is the diuretic load part of the problem?** Her K^+ is 3.57–3.89 against the $K^+ > 4$ / $Mg^{2+} > 2$ target her Mumbai team set, magnesium has not been *measured* in over four months, and she is now on **torsemide 20 mg BD plus a tapering prednisolone course**, both of which deplete potassium. Is the QT partly a treatable electrolyte problem rather than purely a drug-class problem?
4. **Does the clean 72-hour Holter change the risk calculus?** No VT, no pauses, 0.1 % ectopic burden, and her symptomatic episode occurred in sinus rhythm. Does she still need two antiarrhythmics at all — or is de-escalation of one of them reasonable?
5. **Why was Concor stopped in March, and does that reason still apply?** Given her bronchospasm and pressure-loaded RV, is a cardioselective agent at a low dose the safer option if a beta-blocker is added?
6. **Is amiodarone monitoring due?** ~4.5 months of therapy without TFTs or interval LFTs.
7. **Given the chest-pain history and a never-excluded coronary question, is any ischaemia evaluation now indicated?** (Note the record is mixed on chest pain: the 05–08 Jul admission was for fever and hypoxia, *not* chest pain, but chest pain is listed as an indication on the 10–13 Jul Holter requisition and she logged "chest discomfort/pain" as her symptom on 11 Jul. There was also a MET call for chest pain on 20 Mar 2026.) Is evaluation — and is it feasible/safe given her renal trend (creatinine 1.20) and oncological status?
8. **Are her current symptoms cardiac at all?** The Holter, the never-raised troponins, an NT-proBNP in the "HF unlikely" band for her presentation, and the recovered RV function all point away from the heart; the increasing pleural effusions on the 05 Jul HRCT point towards the chest. Should the effusions be addressed (drainage?) as the primary symptom driver?
9. **Anticoagulation:** is apixaban still indicated, at what dose, and for how long, given no residual pulmonary thrombus on the 22 Jun PET-CT but an active malignancy and a prior major bleed?

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10. Source documents — the complete list used to build this note

All files are in this records archive. Original hospital PDFs are in `report_pdf/` ; the plain-text extractions are in `report_md/` .

Summaries and procedure records

Date	Document	File
08 Apr 2026	**Inpatient Discharge Summary, RFH Mumbai (20 Feb – 8 Apr)** — the single most important historical document	`report_pdf/2026-04-08_Summary-Discharge_Discharge-Summary.pdf`
13 Apr 2026	Daycare Discharge Summary (chemotherapy) — reconfirms the April cardiac regimen	`report_pdf/2026-04-13_Summary-Daycare_Daycare-Discharge-Summary-Chemotherapy.pdf`
08 Jul 2026	**Discharge Summary, Maitreya Surat (05–08 Jul)** — viral LRTI, volume overload, SpO_2 84 % on air; “Prolonged QT” a listed diagnosis	`report_pdf/2026-07-08_Summary-Discharge_Discharge-Summary-Maitreya-Surat.pdf`
17 Jul 2026	**Discharge Summary, Maitreya Surat (13–17 Jul)** — ⭐ **the source of the confirmed current medication list in §6.2**	`report_pdf/2026-07-17_Summary-Discharge_Discharge-Summary-Maitreya-Surat.pdf`

Echocardiography

Date	Document	File
20 Feb 2026	Echo Portable — RVSP 83, LVEF 55 %	`report_pdf/2026-02-20_ECHO_Echocardiography-Portable.pdf`
26 Feb 2026	Echo Portable — RVSP 72, LVEF 60 %	`report_pdf/2026-02-26_ECHO_Echocardiography-Portable.pdf`
24 Mar 2026	Echo — saddle thrombus, RVSP 91, RV dysfunction FAC 20 %	`report_pdf/2026-03-24_ECHO_Echocardiography.pdf`
06 Jul 2026	2D Echo Colour Doppler, Maitreya — RVSP 70, LVEF 50 %	`report_pdf/2026-07-06_ECHO_2D-Echo-Colour-Doppler-Surat.pdf`

ECG and Holter

Date	Document	File
14–17 Mar 2026	**72-h Holter, RFH** — 1811 PVCs, 60 bigeminy runs, no VT	`report_pdf/2026-03-14_Holter_Holter-ECG-Report.pdf`
14 Mar 2026	ECG Report, RFH — *blank; contains no tracing or interpretation*	`report_pdf/2026-03-14_ECG_ECG-Report.pdf`
06 Jul 2026	ECG, Maitreya — QTc 520 ms	`report_pdf/2026-07-06_ECG_ECG-Surat.pdf`
07 Jul 2026	ECG, Maitreya — QTc 463 ms	`report_pdf/2026-07-07_ECG_ECG-Surat.pdf`
08 Jul 2026	ECG, Maitreya — QTc 529 ms	`report_pdf/2026-07-08_ECG_ECG-Surat.pdf`
10–13 Jul 2026	**72-h Holter, Surat** — sinus, no VT, symptom in NSR	`report_pdf/2026-07-13_Holter_Holter-ECG-Report-Surat.pdf`
13 Jul 2026	ECG, Maitreya — QTc 491 ms *(newly filed from family photo)*	`report_pdf/2026-07-13_ECG_ECG-Maitreya-Surat.pdf`
17 Jul 2026	ECG, Maitreya — QTcBz 481 ms *(newly filed from family photo)*	`report_pdf/2026-07-17_ECG_ECG-Maitreya-Surat.pdf`

Imaging

Date	Document	File
24 Mar 2026	**CT Pulmonary Angiography — saddle PE with RV strain**	`report_pdf/2026-03-24_CT_CT-Angiography-Pulmonary.pdf`
01 May 2026	Right lower limb arterial & venous Doppler — **no DVT**	`report_pdf/2026-05-01_USG_Right-Lower-Limb-Arterial-Venous-Doppler.pdf`
22 Jun 2026	**WB FDG PET-CT — RECIST PR –47.1 %; no residual pulmonary thrombus**	`report_pdf/2026-06-22_CT_WB-FDG-PET-CT-scan.pdf`
05 Jul 2026	**HRCT Chest — effusions increased; PA 3.4 cm**	`report_pdf/2026-07-05_CT_HRCT-Chest-Plain-Surat.pdf`

Laboratory

Date	Document	File
20 Feb 2026	NT-proBNP 1761	`report_pdf/2026-02-20_Lab-Serol_NT-pro-B-type-Natriuretic-Peptide-NT-pro-BNP.pdf`
08 Mar 2026	hs-Troponin I 3.2 (normal)	`report_pdf/2026-03-08_Lab-Biochem_Troponin-I-hs-Less-than.pdf`
08 Mar 2026	Magnesium 2.21 — **the last magnesium on record**	`report_pdf/2026-03-08_Lab-Serol_Magnesium.pdf`
24 Mar 2026	**NT-proBNP 4089 (peak)**	`report_pdf/2026-03-24_Lab-Serol_NT-pro-B-type-Natriuretic-Peptide-NT-pro-BNP.pdf`
25 Mar 2026	hs-Troponin I 11.90 (normal, at the time of the PE)	`report_pdf/2026-03-25_Lab-Biochem_Troponin-I-hs.pdf`
31 Mar 2026	Blood culture — “post thrombectomy”, left IJV, **no growth**	`report_pdf/2026-03-31_Lab-Micro_Blood-Culture-Set.pdf`
15 Jun 2026	Combined panel — **NT-proBNP 97.2 (normal)**, creatinine 0.93	`report_pdf/2026-06-15_Lab-Surat_Combined-Panel.pdf`
05 Jul 2026	**Admission panel — NT-proBNP 151.4, CRP 9.0, creatinine 1.08, K 3.57**	`report_pdf/2026-07-05_Lab-Surat_Combined-Panel.pdf`
06 Jul 2026	Iron profile + ferritin — no iron deficiency	`report_pdf/2026-07-06_Lab-Surat_Iron-Profile-Ferritin.pdf`
06 Jul 2026	Urine routine — normal	`report_pdf/2026-07-06_Lab-Surat_Urine-Routine.pdf`
07 Jul 2026	**Creatinine 1.20, Na 135, K 3.89**	`report_pdf/2026-07-07_Lab-Surat_Creatinine-Electrolytes.pdf`

Consolidated references

Document	File
All serial lab values (Hb, electrolytes, creatinine, CRP, NT-proBNP, coagulation) in dated tables	`TRENDS.md`
Date-grouped index of every report in the archive	`MASTER_INDEX.md`
Raw original Surat PDFs, incl. the 16-page July Maitreya bundle	`surat_reports_and_other_details/`
Maitreya pharmacy invoices — source for the IV KCl / $MgSO_4$ / Lasix given 05–08 Jul *(held locally, not in the published archive)*	`admin_and_billing/2026-07_Medicine-Invoice_Maitreya.pdf`
Maitreya IPD invoice and insurance Claim Form Part B — confirms *emergency* admission *(held locally)*	`admin_and_billing/`

Compiled 20 July 2026 from the primary records listed above. Figures are quoted from source documents; inferences, gaps and inconsistencies are marked ⚠️.

***What is NOT documented anywhere in the records** and rests solely on the family's account: the referral to Dr. Purushottam; Dr. Tanwar's proposal to stop mexiletine and add a beta-blocker; the ~13 July dose reduction and Dr. Meeran's approval of it. Dr. Tanwar appears in the records only as the reporter of the 06 Jul echo and the 13 Jul ECG. **The current medication list in §6.2 is, by contrast, fully documented** — it is transcribed from the 17 July Maitreya discharge prescription.*