BUSINESS PLAN · INDIA

Imaging & Radiology Centre

Where the harm is a dose nobody adds up, print the running total

DIAGNOSTIC LABS & IMAGING

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1. Executive Summary

This plan sets out an **Imaging & Radiology Centre** business in India — five centres by Year 3 operating two MRI systems, two CT scanners, ultrasound and Doppler, X-ray, mammography and bone densitometry, plus image-guided interventional procedures and corporate imaging contracts.

> This plan inherits the diagnostics anchor's rules from `pathology-lab` and adds the harm peculiar to imaging: **one that is invisible at the time, delivered in units nobody sees, and accumulated across providers who never speak to each other.**

> □□ **RADIATION DOSE IS INVISIBLE, CUMULATIVE, AND NOBODY ANYWHERE HOLDS THE RUNNING TOTAL. A patient may have four CT scans in a year across three different centres, and no person, record or system adds them up — not the centres, not the referring physician, not the patient, who has never been told a number at all. The harm is stochastic, arrives decades later, and CANNOT BE TRACED TO ANY SINGLE SCAN — the catering anchor's structure with one additional feature that makes it harder: EVERY INDIVIDUAL SCAN WAS GENUINELY DEFENSIBLE. There is no bad decision anywhere in the sequence, only a sum that nobody computed. And the commercial gradient runs the wrong way: CT and MRI pay multiples of ultrasound, and combined with the referral commission the anchor plan describes, OVER-IMAGING IS PROFITABLE FOR BOTH PARTIES AND VISIBLE TO NEITHER. So this business PRINTS THE DOSE IN MILLISIEVERTS ON EVERY REPORT WITH A CUMULATIVE RUNNING TOTAL FOR THAT PATIENT ACROSS OUR CENTRES, PUBLISHES DOSE PER PROTOCOL AGAINST NATIONAL DIAGNOSTIC REFERENCE LEVELS, and RE-OPTIMISES ANY PROTOCOL THAT SITS ABOVE THEM — three remaining in Year 3, down from fourteen. WHERE THE HARM IS A DOSE NOBODY ADDS UP, PRINT THE RUNNING TOTAL.**

> □□ **AND JUSTIFICATION IS THE ONLY REAL DOSE CONTROL. Optimising a protocol saves a fraction; not performing an unjustified scan saves all of it. So 6,800 SCANS WERE DECLINED OR DOWNGRADED as unjustified in Year 3, with a NON-IONISING ALTERNATIVE PROPOSED in 84% of cases, at ₹3.64 crore of revenue forgone — and per the anchor rule, A CENTRE REPORTING A ZERO DECLINE RATE IS INVESTIGATED RATHER THAN PRAISED.**

> □□ **AND THE PATIENT DOES NOT KNOW WHO READ HIS SCAN. The REPORTING RADIOLOGIST IS NAMED ON EVERY REPORT, teleradiology outsourcing is DISCLOSED AS SUCH, and NIL reports are signed by a radiologist who did not review the images. Under PCPNDT, 52 sex-determination requests were refused and reported in Year 3 — because the machine is the regulated item and the refusal is the only measurable thing.**

This plan models an operator requiring **₹42.00 crore** (₹18.40 crore investor + ₹15.60 crore term loan + ₹5.60 crore promoter + ₹2.40 crore working capital), moving from **₹11.00 crore revenue and a ₹7.28 crore loss** to **₹62.00 crore revenue and ₹4.96 crore profit** by Year 3 — *an 8.0% net margin and 16.3% return on capital. (Imaging centre — figures illustrative.)*

2. Business Description, Vision & Legal Structure

Concept: An imaging centre that keeps the patient's running total.

Vision: To make cumulative dose a number a patient has actually seen.

Mission: Print the dose and the running total; publish every protocol against the reference level; decline the scan that is not justified and offer the one that is; name the radiologist who read it; and pay nobody to send us patients.

Legal structure

- **Private Limited** — recommended. AERB licensing, PCPNDT registration, equipment finance and outside capital all assume it.
- **Partnership with a radiologist** — common in the trade, and unsuited to a five-site network carrying published dose data.
- **Justification and dose function independent of scheduling and revenue — because declining a scan cancels a booking somebody is measured on.**

> **Regulatory anchor:** the **Atomic Energy Regulatory Board** under the Atomic Energy (Radiation Protection) Rules 2004 — licensing of every X-ray, CT, mammography and fluoroscopy installation, room layout and shielding approval, a designated Radiological Safety Officer, personnel monitoring by TLD badge and quality-assurance testing at defined intervals; the **PCPNDT Act 1994**, under which **every ultrasound machine capable of foetal imaging must be registered, Form F completed for every prenatal scan, records retained, and the machine itself is the regulated item — an unregistered machine is an offence regardless of what was done with it**; the Clinical Establishments Act 2010 and state rules; the National Medical Commission's conduct regulations on referral commissions, **binding on the doctor who receives and not on the centre that pays**; Bio-Medical Waste Rules; the Drugs and Cosmetics Act for contrast media; the Digital Personal Data Protection Act 2023, under which an image and its report are sensitive personal data; MRI safety practice on ferromagnetic screening and quench management, which is **largely professional convention rather than statute**; GST; and shops and establishments, EPF/ESI and POSH. **The decisive structural fact is that AERB regulates the EQUIPMENT and PCPNDT regulates the MACHINE, while NOTHING REGULATES THE CUMULATIVE DOSE DELIVERED TO A PARTICULAR PERSON.**

3. Promoter & Ownership

Led by a promoter with radiology, imaging operations or healthcare infrastructure background, with a radiologist as clinical director. Three competences decide outcomes. *Capital discipline*, because an MRI is a decade-long commitment made in a single afternoon and utilisation decides whether the business works. *Radiologist retention*, since reporting capacity is the binding constraint and consultants are scarce and mobile. And *the willingness to decline the scan*, which is where this plan's proposition sits and which cancels bookings on machines whose economics depend on throughput. Ownership, equity & investor terms are editable inputs; **the justification and dose function is independent of scheduling and revenue, and no employee's pay is linked to scan volume or to any individual referrer.**

4. Market Analysis — India

Fast-growing demand, heavy capital, and a harm nobody has ever quantified for an individual.

Demand drivers

- **Rising surgical and oncology volume** requiring staging and follow-up imaging.
- **Trauma and emergency imaging** where CT is the default first investigation.
- **Musculoskeletal and neurological MRI** demand from an ageing, urbanising population.
- **Insurance and reimbursement** requiring documented imaging.
- **Corporate and preventive screening** packages including imaging components.
- **Equipment financing availability** putting scanners into smaller towns.

Market sizing (illustrative framing)

Layer	Definition	Indicative scale
TAM	Indian diagnostic imaging	Very large; capacity growing fast
SAM	**Studies that survive a justification review**	**Roughly 11% smaller than the referred volume**
SOM (Yr 1–3)	Centres and studies	₹11cr → ₹62cr; 5 centres; 98.1% uptime

Revenue mix and share (Year 3)

Modality	Share	Gross margin — and the dose that comes with it
MRI	**30.0%**	**72.0% — no ionising radiation; the preferred substitution**
CT	**25.0%**	**68.0% — the dose that dominates the running total**
Ultrasound & Doppler	18.0%	76.0% — highest margin, no dose, PCPNDT-bound
X-ray, mammography & bone densitometry	12.0%	70.0% — low dose per study, very high volume
Interventional & guided procedures	9.0%	58.0% — fluoroscopy time is the dose variable
Corporate & institutional imaging contracts	6.0%	54.0% — tendered, and commission-free by structure

> **The first three rows contain the plan's most useful commercial accident: ULTRASOUND CARRIES THE HIGHEST MARGIN IN THE BUSINESS AT 76% AND DELIVERS NO IONISING DOSE AT ALL, while CT carries 68% and dominates the cumulative total. For once the clinically preferable substitution is not the expensive one — which is why 84% of declined CT requests can be met with a proposed ultrasound or MRI alternative without the centre losing the patient, and why the justification programme costs ₹3.64 crore rather than the much larger figure it would cost if the safer modality were also the poorer one. MRI at 72% and no dose is the other beneficiary. The honest caveat is that ultrasound and MRI are slower per study and constrained by radiologist and sonographer time, so the substitution is limited by capacity rather than by willingness — and capacity is what the ₹42 crore of equipment is for.**

Constraints

- **Radiologist reporting capacity**, which is the binding constraint on every modality.
- **Utilisation** against fixed equipment cost, where a scanner idle is a scanner losing money.
- **Referral access**, purchased by competitors and not by us.
- **Helium, power and service cost**, which are large, contracted and rising.

5. Competition & Position

Competitor type	Strength	Weakness this plan exploits
National imaging and diagnostics chains	Scale, brand, equipment buying power, radiologist pool	**Dose never printed; justification review absent**
Standalone imaging centres	Physician relationships, price, local convenience	Referral commission is the whole channel; QA variable

Hospital radiology departments	Captive inpatient flow, clinician proximity, emergency volume	Outpatient access limited; dose tracking equally absent
Low-cost scan centres	Price, throughput, aggressive referral economics	Protocols rarely optimised; reporting often unattributed
This plan	**Dose and running total printed, protocols published against DRLs, scans declined, radiologist named**	6,800 declined studies; 388 referrers lost; heavy D&A

The positioning targets a gap that is unusual in this library because the customer does not yet know it exists: no patient has ever been handed a cumulative radiation figure, so there is no existing demand for one. The demand is created by the disclosure rather than served by it, which makes the first year slow and the third year defensible — a patient who has seen "your cumulative dose across our centres: 34.2 mSv" on a report has been given a fact he will carry to every subsequent imaging decision, including ones made elsewhere. Referring physicians divide sharply: some find the running total genuinely useful for exactly the reason it is printed, and others find it an implicit criticism of their ordering. The 388 who stopped sending patients are not all commission-driven, and saying so is more honest than pretending the objection is always venal.

The cost of the honest position is stated in rupees rather than implied. Declining or downgrading 6,800 unjustified studies and proposing non-ionising alternatives cost ₹3.64 crore of Year-3 revenue — the largest item, and the only dose control that actually works. Paying no referral commission cost ₹1.86 crore of profit, with 388 referrers gone. Printing the dose, maintaining the cumulative total and re-optimising protocols below reference levels cost ₹68 lakh. Naming the reporting radiologist, disclosing teleradiology and refusing to sign unreviewed studies cost ₹52 lakh. Total ₹6.70 crore against ₹4.96 crore of profit — so a trade-standard operator with the same five centres and the same scanners would earn ₹11.66 crore.

6. The Dose Nobody Adds Up

This is the finding, and it is an accounting failure rather than a clinical one.

Who could hold the running total	Why they do not
The imaging centre	Sees only its own scans, and does not print the figure
The referring physician	Sees reports, not doses; often did not order the earlier ones
The hospital	Holds inpatient studies only
The insurer	Holds claims, not millisieverts
The patient	**Has never been shown a number in his life**
Any regulator	**AERB regulates the EQUIPMENT. Nobody regulates the SUM.**

Read the right-hand column and the shape of the problem is complete: there is no villain, only an absence. Each scan was ordered by a competent physician for a real question, performed on a licensed machine within its own dose limits, and reported correctly — and the total, which is the only quantity that matters for stochastic risk, exists nowhere. This is the catering anchor's structure at its most extreme, because the usual defence does not even need to be deployed: nobody has to argue that the harm is untraceable, since NOBODY HAS EVEN ASSEMBLED THE EXPOSURE. And the commercial gradient makes it worse without anybody choosing to: CT and MRI pay multiples of ultrasound, referral commissions scale with the bill, a scanner idle is a scanner

losing money against a decade of finance payments, and every one of those pressures points towards more imaging rather than less. THE ONLY PARTY WITH BOTH THE DATA AND A REASON TO CARE IS THE PATIENT, AND HE IS THE ONE PERSON WHO HAS NEVER BEEN TOLD A NUMBER.

So the total is assembled and handed to him. THE DOSE FOR EACH STUDY IS PRINTED IN MILLISIEVERTS ON THE REPORT, with a plain-language comparison, AND A CUMULATIVE RUNNING TOTAL FOR THAT PATIENT ACROSS ALL OUR CENTRES sits beside it — so the patient holds a figure he can carry to any provider, which is the only way the total can ever cross an institutional boundary. DOSE PER PROTOCOL IS PUBLISHED AGAINST NATIONAL DIAGNOSTIC REFERENCE LEVELS, protocol by protocol rather than as an assurance, and ANY PROTOCOL SITTING ABOVE ITS REFERENCE LEVEL IS RE-OPTIMISED — three remaining in Year 3, down from fourteen, with the count published while it is still embarrassing. The figures are estimates and are labelled as estimates, because a dose figure presented with false precision would be its own kind of dishonesty. WHERE THE HARM IS A DOSE NOBODY ADDS UP, PRINT THE RUNNING TOTAL.

7. Justification, Attribution and the Machine That Is Regulated

Three further rules, the first of which does far more than protocol optimisation ever can.

JUSTIFICATION IS THE ONLY REAL DOSE CONTROL. Optimising a CT protocol might save a fifth of the dose; not performing an unjustified CT saves all of it, and the two are not comparable interventions. Yet optimisation is what centres do, because it is invisible to referrers and costs nothing commercially, while declining a study means telephoning a physician to question his clinical judgement and cancelling a booking on a machine with a finance payment due. So EVERY REQUEST IS REVIEWED AGAINST JUSTIFICATION CRITERIA BEFORE SCHEDULING: 6,800 STUDIES DECLINED OR DOWNGRADED in Year 3, with A NON-IONISING ALTERNATIVE PROPOSED IN 84% OF CASES rather than a bare refusal, at ₹3.64 crore of revenue forgone. The decline rate is published per centre, and A CENTRE REPORTING ZERO DECLINES IS INVESTIGATED, per the vertical anchor's rule that a gate with no rejections is not a gate. The justification function reports independently of scheduling, because a booking cancelled is a number somebody is measured on.

AND THE PATIENT DOES NOT KNOW WHO READ HIS SCAN. Reports routinely carry a centre's name rather than a radiologist's, studies are outsourced to teleradiology without disclosure, and in the worst practice a consultant signs a report on images he has not personally reviewed — an arrangement that is invisible in the document and material to its reliability. So THE REPORTING RADIOLOGIST IS NAMED ON EVERY REPORT with his registration number, TELERADIOLOGY OUTSOURCING IS DISCLOSED AS SUCH including the reporting location, and NIL REPORTS ARE SIGNED BY A RADIOLOGIST WHO DID NOT REVIEW THE IMAGES. Turnaround is published with its 90th percentile — 2.8 hours median against 9 hours at the tail — because a median turnaround conceals precisely the studies that waited.

AND UNDER PCPNDT THE MACHINE IS THE REGULATED ITEM. Every ultrasound machine capable of foetal imaging must be registered and Form F completed for every prenatal scan, and an unregistered machine is an offence regardless of what was done with it — which makes the compliance obligation unusually absolute and the enforcement unusually documentary. So Form F completeness runs at 100%, every machine is registered, and 52 SEX-DETERMINATION REQUESTS WERE REFUSED AND REPORTED in Year 3 — because as with the pharmacy anchor's antibiotic sale, the request is the only measurable thing and A CENTRE RECORDING NO SUCH REQUESTS IN A YEAR IS EITHER EXTRAORDINARILY FORTUNATE OR NOT RECORDING THEM.

> **AND AN INCIDENTAL FINDING CAN START A CASCADE WORSE THAN THE ORIGINAL QUESTION. A small lesion of no significance, reported without guidance, produces follow-up imaging, a biopsy, and a year of anxiety — so report language states explicitly "NO FURTHER IMAGING INDICATED" where that is the case, rather than leaving a finding to generate its own momentum.**

8. Operations Plan (justify, scan, optimise, attribute)

Dose

- **Dose in mSv printed on every report** with a plain-language comparison, labelled as an estimate.
- **Cumulative running total for the patient** across all our centres, on the same report.
- **Dose per protocol published against national DRLs**, protocol by protocol.
- **Any protocol above its DRL re-optimised** and the count published — 3 remaining.

Justification

- **Every request reviewed against justification criteria** before scheduling.
- **Non-ionising alternative proposed** rather than a bare refusal — 84% of declines.
- **Decline rate published per centre**; a zero reading investigated.
- **Justification function independent of scheduling and revenue.**

Attribution and reporting

- **Reporting radiologist named** on every report with registration number.
- **Teleradiology outsourcing disclosed**, including reporting location.
- **Nil reports signed by a radiologist who did not review the images.**
- **Turnaround published with its 90th percentile**, not the median alone.

Safety and compliance

- **AERB licensing, RSO, TLD badges and QA testing** at defined intervals.
- **PCPNDT registration, Form F completeness and refusal recording.**
- **MRI ferromagnetic screening and quench procedure** exercised, not merely documented.
- **Nil referral commission**, with the policy published at every centre and on every report.

> **The operational hinge is a Saturday afternoon with an MRI running at 40% and a request for a lumbar spine MRI on a patient with six weeks of uncomplicated low back pain, no red flags, and no trial of conservative management — a study that guidelines say should not be done yet, that the referring physician has ordered in good faith because the patient is anxious and insistent, and that would earn ₹8,400 on a machine that is idle. Declining it means telephoning a physician to question his judgement, disappointing a patient who has taken a day off work, and leaving a scanner empty against a finance payment. So the JUSTIFICATION REVIEW HAPPENS AT SCHEDULING RATHER THAN AT THE SCANNER, the alternative offered is a clinical conversation and a review appointment rather than a refusal, and NO SCHEDULING OR CENTRE STAFF MEMBER'S PAY IS AFFECTED BY UTILISATION OR SCAN VOLUME. The system refuses rather than warns: a study flagged as failing justification cannot be booked without a recorded radiologist override, and overrides are counted and published.**

9. AERB, PCPNDT & Operating Compliance (India)

- **Atomic Energy Regulatory Board** under the Atomic Energy (Radiation Protection) Rules 2004 — licensing of every X-ray, CT, mammography and fluoroscopy installation, layout and shielding approval, a designated Radiological Safety Officer, TLD personnel monitoring and QA testing at defined intervals.
- **PCPNDT Act 1994 — every ultrasound machine capable of foetal imaging registered, Form F for every prenatal scan, records retained; THE MACHINE IS THE REGULATED ITEM and an unregistered machine is an offence regardless of what was done with it.**
- **Clinical Establishments Act 2010** and state rules where adopted; state establishment Acts elsewhere.
- **NMC conduct regulations** on referral commissions — **binding on the doctor who receives, not on the centre that pays.**
- **Drugs and Cosmetics Act** for contrast media; Bio-Medical Waste Rules for disposal.
- **Digital Personal Data Protection Act 2023** — images and reports are sensitive personal data.
- **MRI safety** — ferromagnetic screening, zone control and quench management, **largely professional convention rather than statute in India.**
- **GST, shops and establishments, EPF/ESI and POSH. AERB regulates the EQUIPMENT and PCPNDT regulates the MACHINE; NOTHING REGULATES THE CUMULATIVE DOSE DELIVERED TO A PARTICULAR PERSON.**

10. Organisation & Manpower Plan

Function	Yr 1	Yr 3	Notes
Promoter / managing director	1	1	Owns the justification rule
Technologists & radiographers	22	78	Protocol discipline at the console
Front office, scheduling & patient care	16	54	**Justification review happens here, at booking**
Nursing & interventional support	14	42	Contrast, sedation, guided procedures
Radiologists & reporting consultants	6	22	**Named on every report; the binding constraint**
QA, dose, RSO & PCPNDT compliance	4	14	**Independent of scheduling and revenue**
Biomedical & equipment service	4	12	98.1% uptime; QA phantom testing
Admin, finance, marketing & corporate	9	27	Patient-direct and corporate, not referrer-paid
Total	**76**	**250**	Radiologists, QA and dose at 14% of headcount

> **The unusual placement in this table is that the justification review sits with SCHEDULING rather than with the scanner, because a study questioned at the console has already brought a patient to the centre and has become almost impossible to decline gracefully. Fourteen people in QA, dose and PCPNDT compliance for five centres is roughly double trade practice, and the function reports independently of scheduling and revenue for the same reason the pathology anchor separates quality from operations: A BOOKING CANCELLED IS A NUMBER SOMEBODY IS MEASURED ON. NO SCHEDULING OR CENTRE STAFF MEMBER'S PAY IS AFFECTED BY UTILISATION OR SCAN VOLUME, which is a genuinely expensive choice in a business whose entire fixed-cost structure rewards throughput.**

11. Implementation Timeline & Milestones

Phase	Window	Milestones
Formation & first centre	Month 0–10	Incorporation, AERB licensing, shielding, MRI and CT commissioned
Dose printing & running total	Month 4–10	**mSv on every report; cumulative total across centres live**
Justification review at scheduling	Month 6–15	Criteria applied before booking; decline rate published per centre
Protocol optimisation against DRLs	Month 8–20	14 protocols above DRL reduced to 8; published throughout
Centres two to five	Month 12–30	AERB and PCPNDT registration per site; radiologist recruitment
Scale & publication	Month 26–36	98.1% uptime; 3 protocols above DRL; 6,800 studies declined

Training and competence

- **Declining a study by telephone** — questioning a physician's order without appearing to overrule him.
- **Protocol optimisation and dose reporting** for technologists at the console.
- **PCPNDT documentation and refusal recording**, including how to refuse and record safely.
- **MRI safety and quench drill**, exercised rather than documented.

12. Financial Plan (Illustrative)

> **All figures are illustrative model assumptions, not forecasts or guarantees.** They exist to show the drivers of an imaging centre P&L and how the dose, justification and attribution disciplines move them. Every input is editable. **The defining economics are a 69.1% gross margin almost entirely consumed by fixed cost — ₹6.20 crore of depreciation on ₹42 crore of equipment against ₹4.96 crore of profit — which is why utilisation dominates every other variable and why declining studies is genuinely expensive here.**

12.1 Project cost & funding

Item	₹ lakh	Notes
MRI systems (2) with shielding & installation	**1,428**	**No ionising dose; the preferred substitution**
CT systems (2) with shielding	812	AERB layout approval per installation
Centre build-out — 5 sites, RF/lead shielding, HVAC	686	Shielding is a licensing precondition
Ultrasound, X-ray, mammography & DEXA	486	Every USG machine PCPNDT-registered
PACS, RIS, dose-tracking & reporting systems	**296**	**Carries the cumulative running total**
Licences (AERB, PCPNDT), deposits & pre-operative	248	Per installation and per machine
Working capital — corporate receivables & consumables	244	Contrast media and corporate terms
Total project cost	**4,200**	₹1,840L investor + ₹1,560L term loan + ₹560L promoter + ₹240L WC

12.2 Operating metrics

Metric	Yr 1	Yr 2	Yr 3
DOSE PRINTED IN mSv on every report / **CUMULATIVE RUNNING TOTAL for that patient across our centres shown alongside** / dose per protocol published against national DRLs / **protocols ABOVE their DRL, re-optimised**	100% / 100% / 100% / 14	100% / 100% / 100% / 8	**100% / 100% / 100% / 3**
Studies DECLINED OR DOWNGRADED as unjustified / **NON-IONISING ALTERNATIVE PROPOSED rather than a bare refusal** / **centres reporting a ZERO decline rate and investigated** / revenue forgone (₹cr)	1,240 / 68% / 100% / 0.64	3,400 / 76% / 100% / 1.82	**6,800 / 84% / 100% / 3.64**
REFERRAL COMMISSION paid to any doctor, clinic or agent (vertical anchor) / policy published at every centre and on every report / **referrers who stopped sending patients**	NIL / 100% / 112	NIL / 100% / 246	**NIL / 100% / 388**
REPORTING RADIOLOGIST NAMED on every report with registration number / teleradiology outsourcing DISCLOSED as such / **reports signed by a radiologist who did NOT review the images**	100% / 100% / NIL	100% / 100% / NIL	**100% / 100% / NIL**
PCPNDT — Form F completeness / machines registered / **SEX-DETERMINATION REQUESTS REFUSED AND REPORTED** / audits passed	100% / 100% / 18 / 100%	100% / 100% / 34 / 100%	**100% / 100% / 52 / 100%**
QA phantom testing per protocol / equipment uptime / turnaround median **(90th percentile)** / incidental findings reported with explicit "no further imaging indicated" where true	100% / 94.2% / 4.2h (18h) / 100%	100% / 96.8% / 3.4h (14h) / 100%	**100% / 98.1% / 2.8h (9h) / 100%**

Row one carries the plan's central number and its most easily missed one: the cumulative running total, printed on the report, is the only mechanism by which a dose figure ever crosses an institutional boundary — because the patient carries it and nobody else can. The protocol count falling from 14 above DRL to 3 is published throughout the journey rather than announced at the end, which means publishing 14 while it is still embarrassing. Row two's 84% is what makes the justification programme survivable: declining a study and proposing a non-ionising alternative keeps the patient, whereas a bare refusal sends him to a centre that will not ask. Row five applies the pharmacy anchor's logic to PCPNDT — 52 refusals recorded, because the request is the only measurable thing and A CENTRE RECORDING NONE IN A YEAR IS EITHER EXTRAORDINARILY FORTUNATE OR NOT RECORDING THEM.

12.3 Revenue build

Modality	Yr 1 (₹L)	Yr 2 (₹L)	Yr 3 (₹L)	Gross margin
MRI	330	960	1,860	**72.0%**
CT	275	800	1,550	**68.0%**
Ultrasound & Doppler	198	576	1,116	76.0%
X-ray, mammography & bone densitometry	132	384	744	70.0%
Interventional & guided procedures	99	288	558	58.0%
Corporate & institutional imaging contracts	66	192	372	54.0%
Total revenue	**1,100**	**3,200**	**6,200**	**69.1% blended**

12.4 P&L summary

Line	Yr 1 (₹L)	Yr 2 (₹L)	Yr 3 (₹L)
Revenue	1,100	3,200	6,200
Cost of imaging — contrast, film, consumables & outsourced reads	(339)	(987)	(1,913)
Gross profit	**761**	**2,213**	**4,287**
Radiologists & reporting	**(386)**	**(642)**	**(992)**
Technologists, radiographers & nursing	(228)	(372)	(558)
Premises, power, HVAC & helium	(218)	(312)	(434)
Equipment service contracts & QA testing	(164)	(248)	(341)
Dose, justification review, RSO & PCPNDT	**(86)**	**(128)**	**(186)**
Marketing — patient-direct and corporate, NO referral commission	**(108)**	**(142)**	**(186)**
Admin, legal, compliance & other	(142)	(196)	(285)
EBITDA	**(571)**	**173**	**1,305**
Depreciation & amortisation	**(348)**	**(486)**	**(620)**
Finance cost	(118)	(168)	(210)
Other income — equipment placement terms and corporate incentives *(disclosed)*	66	112	186
PBT	**(971)**	**(369)**	**661**
Tax	243	92	(165)
PAT	**(728)**	**(277)**	**496**
Net margin	**(66.2%)**	**(8.7%)**	**8.0%**
ROCE	**(21.9%)**	**(7.5%)**	**16.3%**

Depreciation of ₹6.20 crore against ₹4.96 crore of profit is the sentence that explains this business and the pressure it is under: the scanners cost what they cost whether they run or not, which is why utilisation dominates every other variable and why declining 6,800 studies is a materially harder decision here than the equivalent refusal in a pharmacy or a laboratory. Marketing at ₹1.86 crore is 3.0% of revenue and buys patient-direct and corporate demand rather than referrals, which is why the first two years lose money. Other income of ₹1.86 crore is equipment placement terms and corporate incentives, disclosed as a line because placement arrangements tie a centre to a manufacturer's consumables and service in a way the patient never sees. Commitments of ₹6.70 crore against ₹4.96 crore of profit mean a trade-standard operator with the same five centres and the same scanners would earn ₹11.66 crore.

12.5 Break-even & sensitivity

Scenario	Yr 3 revenue	Yr 3 PAT	Comment
Base	₹62.0cr	₹4.96cr	As modelled, 8.0% net
Trade-standard practice	₹74.6cr	₹11.66cr	**No justification review, commission paid, no dose printed**

Sixth centre added	₹74.4cr	₹6.66cr	Operating leverage against fixed equipment cost
Corporate contract book doubles	₹65.7cr	₹6.01cr	The channel with no commission in it
MRI utilisation falls 15%	₹59.2cr	₹3.45cr	**Utilisation is the whole business**
Radiologist cost +20%	₹62.0cr	₹3.47cr	22 consultants; the binding constraint

13. Funding Requirement & Bankability

Source	₹ lakh	Terms (indicative)
Investor equity	1,840	Centre rollout; dose-publication and justification covenants
Term loan / equipment finance	1,560	MRI, CT and build-out; 7 years, asset-backed
Promoter contribution	560	Cash and radiology leadership
Working capital facility	240	Corporate receivables and consumables
Total	**4,200**	Illustrative structure

> **A lender should read utilisation, uptime and radiologist headcount, and should treat the equipment finance as the dominant risk it is. A 15% fall in MRI utilisation takes Year-3 profit from ₹4.96 crore to ₹3.45 crore without any other change, because ₹6.20 crore of depreciation and ₹2.10 crore of finance cost are entirely indifferent to whether a scanner runs. Uptime at 98.1% is the operating discipline that protects it, and radiologist cost is the second exposure — 22 consultants at a 20% wage movement costs ₹1.49 crore, and reporting capacity rather than scanner capacity is what actually limits throughput. Two loss-making years are structural: the equipment is bought before the demand exists, and this operator additionally declines to buy the referral channel. The justification and dose commitments deserve covenants because abandoning either would lift utilisation immediately and would be visible to nobody outside the centre.**

- **Use of funds** — 34% MRI systems, 19% CT systems, 16% centre build-out and shielding, 12% ultrasound and X-ray suite, 7% PACS/RIS and dose tracking, 6% licences and deposits, 6% working capital.
- **Repayment** — equipment finance over seven years against asset security; working capital revolving against corporate receivables.
- **Investor exit** — sale to a diagnostics chain, a hospital group or an infrastructure investor; or promoter buyback. **Dose-publication and justification commitments survive change of control.**

14. Risk Analysis & Mitigation

Risk	Impact	Mitigation

The dose nobody adds up	A patient may have four CT scans in a year across three centres and NO PERSON, RECORD OR SYSTEM ADDS THEM UP — not the centres, not the referring physician, not the patient, WHO HAS NEVER BEEN TOLD A NUMBER AT ALL. The harm is stochastic, arrives decades later and CANNOT BE TRACED TO ANY SINGLE SCAN — the catering-anchor structure with one feature that makes it harder: EVERY INDIVIDUAL SCAN WAS GENUINELY DEFENSIBLE. THERE IS NO VILLAIN, ONLY AN ABSENCE: each scan was ordered by a competent physician for a real question, performed on a licensed machine within its own limits, and reported correctly — AND THE TOTAL, THE ONLY QUANTITY THAT MATTERS FOR STOCHASTIC RISK, EXISTS NOWHERE. Nobody even needs to argue the harm is untraceable, BECAUSE NOBODY HAS ASSEMBLED THE EXPOSURE. And the commercial gradient worsens it without anybody choosing to: CT and MRI pay multiples of ultrasound, referral commissions scale with the bill, and A SCANNER IDLE IS A SCANNER LOSING MONEY AGAINST A DECADE OF FINANCE PAYMENTS. AERB regulates the EQUIPMENT, PCPNDT the MACHINE, AND NOTHING REGULATES THE SUM	**ASSEMBLE THE TOTAL AND HAND IT TO HIM: DOSE PRINTED IN mSv ON EVERY REPORT with a plain-language comparison, AND A CUMULATIVE RUNNING TOTAL ACROSS ALL OUR CENTRES BESIDE IT — so the patient holds a figure HE CAN CARRY TO ANY PROVIDER, WHICH IS THE ONLY WAY THE TOTAL EVER CROSSES AN INSTITUTIONAL BOUNDARY, SINCE HE IS THE ONLY PARTY PRESENT AT ALL OF THEM. DOSE PER PROTOCOL PUBLISHED AGAINST NATIONAL DRLs protocol by protocol, and ANY PROTOCOL ABOVE ITS DRL RE-OPTIMISED — 3 remaining from 14, WITH THE COUNT PUBLISHED WHILE IT IS STILL EMBARRASSING. Figures labelled AS ESTIMATES, because a dose presented with false precision WOULD BE ITS OWN KIND OF DISHONESTY (₹68L). GENERAL RULE: WHERE THE HARM IS A DOSE NOBODY ADDS UP, PRINT THE RUNNING TOTAL**
The idle scanner on a Saturday	An MRI at 40% and a lumbar spine request on six weeks of uncomplicated low back pain — NO RED FLAGS, NO TRIAL OF CONSERVATIVE MANAGEMENT — a study guidelines say should not be done yet, ORDERED IN GOOD FAITH because the patient is anxious and insistent, worth ₹8,400 ON A MACHINE THAT IS IDLE. Declining means telephoning a physician TO QUESTION HIS JUDGEMENT, disappointing a patient WHO HAS TAKEN A DAY OFF WORK, and leaving a scanner empty AGAINST A FINANCE PAYMENT	**JUSTIFICATION REVIEW AT SCHEDULING RATHER THAN AT THE SCANNER, BECAUSE A STUDY QUESTIONED AT THE CONSOLE HAS ALREADY BROUGHT THE PATIENT IN AND IS ALMOST IMPOSSIBLE TO DECLINE GRACEFULLY; a clinical conversation and review appointment offered rather than a refusal; NO SCHEDULING OR CENTRE STAFF PAY AFFECTED BY UTILISATION OR SCAN VOLUME — genuinely expensive in a business whose entire fixed-cost structure rewards throughput; and THE SYSTEM REFUSES RATHER THAN WARNS: a study failing justification CANNOT BE BOOKED without a recorded radiologist override, and OVERRIDES ARE COUNTED AND PUBLISHED**
Justification is the only real dose control	Optimising a CT protocol saves perhaps a fifth of the dose; NOT PERFORMING AN UNJUSTIFIED CT SAVES ALL OF IT — yet OPTIMISATION IS WHAT CENTRES DO, BECAUSE IT IS INVISIBLE TO REFERRERS AND COSTS NOTHING COMMERCIALLY, while declining costs a booking and a conversation	**6,800 STUDIES DECLINED OR DOWNGRADED in Yr3 with A NON-IONISING ALTERNATIVE PROPOSED IN 84% OF CASES RATHER THAN A BARE REFUSAL — WHICH KEEPS THE PATIENT, WHEREAS A BARE REFUSAL SENDS HIM TO A CENTRE THAT WILL NOT ASK (₹3.64cr); decline rate PUBLISHED PER CENTRE and A ZERO READING INVESTIGATED (vertical anchor rule d); and the justification function reporting INDEPENDENTLY OF SCHEDULING, because A BOOKING CANCELLED IS A NUMBER SOMEBODY IS MEASURED ON**

The patient does not know who read his scan	Reports routinely carry A CENTRE'S NAME RATHER THAN A RADIOLOGIST'S; studies are outsourced to teleradiology WITHOUT DISCLOSURE; and in the worst practice A CONSULTANT SIGNS A REPORT ON IMAGES HE HAS NOT PERSONALLY REVIEWED — INVISIBLE IN THE DOCUMENT AND MATERIAL TO ITS RELIABILITY	**REPORTING RADIOLOGIST NAMED ON EVERY REPORT WITH REGISTRATION NUMBER; TELERADIOLOGY OUTSOURCING DISCLOSED AS SUCH INCLUDING REPORTING LOCATION; NIL REPORTS SIGNED BY A RADIOLOGIST WHO DID NOT REVIEW THE IMAGES; and turnaround published WITH ITS 90TH PERCENTILE (2.8h median against 9h at the tail) BECAUSE A MEDIAN CONCEALS PRECISELY THE STUDIES THAT WAITED (₹52L)**
Under PCPNDT the machine is the regulated item	Every ultrasound machine capable of foetal imaging must be registered and Form F completed for every prenatal scan, and AN UNREGISTERED MACHINE IS AN OFFENCE REGARDLESS OF WHAT WAS DONE WITH IT — making the obligation UNUSUALLY ABSOLUTE and the enforcement UNUSUALLY DOCUMENTARY	**Form F completeness at 100%, every machine registered, and 52 SEX-DETERMINATION REQUESTS REFUSED AND REPORTED in Yr3 — because as with the pharmacy anchor's antibiotic sale THE REQUEST IS THE ONLY MEASURABLE THING, and A CENTRE RECORDING NO SUCH REQUESTS IN A YEAR IS EITHER EXTRAORDINARILY FORTUNATE OR NOT RECORDING THEM. Staff trained in HOW TO REFUSE AND RECORD SAFELY**
The incidentaloma cascade	A small lesion of no significance, reported WITHOUT GUIDANCE, produces follow-up imaging, a biopsy and a year of anxiety — a harm CAUSED BY THE SCAN RATHER THAN DETECTED BY IT	Report language states explicitly "NO FURTHER IMAGING INDICATED" where that is the case rather than LEAVING A FINDING TO GENERATE ITS OWN MOMENTUM; standardised reporting templates for common incidental findings; and follow-up recommendations tied to published guidance rather than to individual preference
Utilisation against fixed cost	₹6.20cr of depreciation and ₹2.10cr of finance cost are INDIFFERENT TO WHETHER A SCANNER RUNS; a 15% MRI utilisation fall takes profit to ₹3.45cr with no other change	Uptime driven to 98.1% through service contracts and QA testing; corporate and institutional contracts grown as scheduled, commission-free base load; extended-hours operation on MRI where radiologist cover permits; multi-modality centres so a quiet modality does not idle a whole site; and contribution reported PER MODALITY, never blended
Radiologist capacity and referral access	22 consultants at +20% costs ₹1.49cr, and REPORTING CAPACITY RATHER THAN SCANNER CAPACITY LIMITS THROUGHPUT; the referral channel remains purchased by every competitor while 388 referrers have left us	NIL referral commission with the policy published (vertical anchor rule a); corporate and patient-direct demand built on published dose and turnaround data; teleradiology used for peak load WITH DISCLOSURE; sub-specialty reporting to attract consultants; and honest acknowledgement that NOT ALL 388 DEPARTING REFERRERS WERE COMMISSION-DRIVEN — some object to the running total as an implicit criticism of their ordering

15. SWOT Analysis

Strengths	Weaknesses
• Dose in mSv and cumulative running total on every report • Protocols published against DRLs; 14 above → 3 • 6,800 unjustified studies declined; 84% given alternatives • Reporting radiologist named; teleradiology disclosed • Nil referral commission; 52 PCPNDT refusals recorded	• ₹6.70cr forgone against ₹4.96cr of profit • ₹6.20cr of depreciation regardless of utilisation • 388 referrers lost; two loss-making years • Declining studies is costlier here than anywhere
Opportunities	**Threats**
• Patients who now hold a number they can carry • Corporate contracts with no commission in them • Ultrasound and MRI as high-margin, no-dose substitutions • Physicians who want the running total for their own use • Any dose-registry regulation favours us	• Competitors buying the referral channel outright • Utilisation shortfall against fixed equipment cost • Radiologist scarcity and wage inflation • Helium, power and service cost escalation

16. Recommended AiSevak Tools for This Business

- **Cumulative dose ledger** — per patient across all centres, printed on every report as an estimate.
- **Protocol-vs-DRL board** — dose per protocol against national reference levels, published including exceedances.
- **Justification gate at scheduling** — unjustified studies unbookable without a recorded, counted override.
- **Alternative-modality prompter** — non-ionising option proposed at the point of decline.
- **Report attribution** — radiologist named with registration; teleradiology location disclosed.
- **PCPNDT register** — Form F completeness, machine registration and refusal recording.
- **Modality contribution & uptime dashboard** — never blended; turnaround with 90th percentile.

17. Key Assumptions & Notes

- **All financials are illustrative model assumptions, not forecasts, projections or guarantees.** Revenue, modality mix, utilisation, decline rates and uptime are editable inputs; actual outcomes depend on referral access, radiologist availability, equipment cost and utilisation. Figures are in Indian rupees. **This plan inherits the diagnostics vertical anchor's ten rules from `pathology-lab`, including the nil-referral-commission rule applied here unchanged.**
- **The central integrity finding is that radiation dose is invisible, cumulative, and nobody anywhere holds the running total.** A patient may have four CT scans in a year across three centres, and no person, record or system adds them up — not the centres, not the referring physician, not the patient, who has never been told a number at all. The harm is stochastic, arrives decades later and cannot be traced to any single scan. **This is the catering anchor's structure with one feature that makes it harder: every individual scan was genuinely defensible. There is no villain, only an absence — each study was ordered by a competent physician for a real question, performed on a licensed machine within its own limits, and reported correctly, and the total, which is the only quantity that matters for stochastic risk, exists nowhere. Nobody even needs to argue that the harm is untraceable, because nobody has assembled the exposure.** And the commercial gradient worsens it without anybody choosing to: CT and MRI pay multiples of ultrasound, referral commissions scale with the bill, and a scanner idle

is a scanner losing money against a decade of finance payments.

- **So the total is assembled and handed to the patient.** The dose for each study is printed in millisieverts on the report with a plain-language comparison, and a cumulative running total across all our centres sits beside it — so the patient holds a figure he can carry to any provider, **which is the only way the total can ever cross an institutional boundary, since he is the only party present at all of them.** Dose per protocol is published against national diagnostic reference levels protocol by protocol, and any protocol above its reference level is re-optimised — three remaining from fourteen, with the count published while it is still embarrassing. Figures are labelled as estimates, because a dose presented with false precision would be its own kind of dishonesty. **WHERE THE HARM IS A DOSE NOBODY ADDS UP, PRINT THE RUNNING TOTAL.**
- **Justification is the only real dose control, and it is the one thing centres do not do.** Optimising a CT protocol saves perhaps a fifth of the dose; not performing an unjustified CT saves all of it — yet optimisation is what centres pursue, because it is invisible to referrers and costs nothing commercially, while declining a study means questioning a physician's judgement and cancelling a booking. **6,800 studies were declined or downgraded in Year 3 with a non-ionising alternative proposed in 84% of cases rather than a bare refusal, which keeps the patient — whereas a bare refusal simply sends him to a centre that will not ask. The decline rate is published per centre and a zero reading is investigated, and the justification review happens at scheduling rather than at the scanner, because a study questioned at the console has already brought the patient in and is almost impossible to decline gracefully.** It costs ₹3.64 crore, and no scheduling or centre staff member's pay is affected by utilisation or scan volume.
- **The patient does not know who read his scan, and under PCPNDT the machine is the regulated item.** Reports routinely carry a centre's name rather than a radiologist's, studies are outsourced to teleradiology without disclosure, and in the worst practice a consultant signs a report on images he has not personally reviewed — invisible in the document and material to its reliability. **So the reporting radiologist is named on every report with his registration number, teleradiology is disclosed including reporting location, nil reports are signed unreviewed, and turnaround is published with its 90th percentile because a median conceals precisely the studies that waited.** Form F completeness runs at 100%, every machine is registered, and 52 sex-determination requests were refused and reported — because the request is the only measurable thing, and a centre recording none in a year is either extraordinarily fortunate or not recording them.
- **An incidental finding can start a cascade worse than the original question.** A small lesion of no significance, reported without guidance, produces follow-up imaging, a biopsy and a year of anxiety — a harm caused by the scan rather than detected by it. Report language therefore states explicitly "no further imaging indicated" where that is the case, rather than leaving a finding to generate its own momentum, with standardised templates for common incidental findings and follow-up recommendations tied to published guidance.
- **The economics are dominated by fixed cost, which is what makes every refusal in this plan expensive.** ₹6.20 crore of depreciation and ₹2.10 crore of finance cost are entirely indifferent to whether a scanner runs, so a 15% fall in MRI utilisation takes profit from ₹4.96 crore to ₹3.45 crore with no other change — and declining 6,800 studies is a materially harder decision here than the equivalent refusal in a pharmacy or a laboratory. **One commercial accident helps: ultrasound carries the highest margin in the business at 76% and delivers no ionising dose at all, so for once the clinically preferable substitution is not the poorer one.** Commitments of ₹6.70 crore against ₹4.96 crore of profit mean a trade-standard operator with the same five centres and the same scanners would earn ₹11.66 crore, and it is worth stating honestly that not all 388 departing referrers were commission-driven — some object to the running total as an implicit criticism of their ordering.
- **Compliance and professional advice.** The Atomic Energy Regulatory Board under the Atomic Energy (Radiation Protection) Rules 2004, with licensing of every installation, layout and shielding approval, a designated Radiological Safety Officer, TLD personnel monitoring and QA testing; **the PCPNDT Act 1994, under which every ultrasound machine capable of foetal imaging must be registered and Form F completed for every prenatal scan, and**

under which the machine itself is the regulated item; the Clinical Establishments Act 2010 and state rules; NMC conduct regulations on referral commissions, binding on the doctor who receives rather than the centre that pays; the Drugs and Cosmetics Act for contrast media; Bio-Medical Waste Rules; the Digital Personal Data Protection Act 2023, under which images and reports are sensitive personal data; MRI safety practice on ferromagnetic screening, zone control and quench management, largely professional convention rather than statute; GST; and shops and establishments, EPF/ESI and POSH. **AERB regulates the equipment and PCPNDT regulates the machine; nothing regulates the cumulative dose delivered to a particular person, which is why the commitment above is a business decision rather than a compliance one.** Professional advice should be taken on AERB licensing per installation, PCPNDT registration and record-keeping, contrast-media handling and data-protection obligations for images.

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