# Task Dependencies & Iterative Feedback Loop Framework

**Medical Practice**: Precision Upper GI Surgery (https://precisionuppergisurgery.com.au/)

**Implementation Planning Date**: 29th September 2025

**Orchestration Framework**: Integrated Multi-Squad Coordination with Medical Compliance

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## 🎯 COMPREHENSIVE IMPLEMENTATION TASK DEPENDENCIES

### Phase 1: Foundation Research & Strategic Analysis ✅ COMPLETED

#### Task Dependencies Completed:

`yaml

medical\_compliance\_framework:

type: Foundation

description: AHPRA and medical marketing compliance establishment

status: completed

deliverable: Medical compliance framework document

dependencies: []

agent: brand\_compliance\_auditor

patient\_personas\_development:

type: Foundation

description: Detailed patient personas with cultural sensitivity

status: completed

deliverable: Medical audience personas and patient style guide

dependencies: [medical\_compliance\_framework]

agent: audience\_intent\_researcher

medical\_market\_analysis:

type: Foundation

description: Sydney upper GI surgery market and trend analysis

status: completed

deliverable: Medical market research summary

dependencies: [patient\_personas\_development]

agent: brand\_sentiment\_researcher

medical\_usp\_swot\_analysis:

type: Foundation

description: Practice positioning and competitive analysis

status: completed

deliverable: Medical USP analysis and SWOT assessment

dependencies: [medical\_market\_analysis]

agent: brand\_analyst

competitor\_analysis:

type: Foundation

description: Sydney competitor practices strategic analysis

status: completed

deliverable: Competitor medical practice analysis

dependencies: [medical\_usp\_swot\_analysis]

agent: competitive\_intelligence\_searcher

### Phase 2: Competitive Intelligence & Search Landscape ✅ COMPLETED

#### Task Dependencies Completed:

`yaml

medical\_positioning\_strategy:

type: Strategic

description: Competitive positioning and patient communication strategy

status: completed

deliverable: Medical positioning strategy framework

dependencies: [competitor\_analysis]

agent: brand\_strategy\_researcher

healthcare\_trends\_content\_gaps:

type: Strategic

description: Industry trends and content opportunity identification

status: completed

deliverable: Healthcare trending topics and content gap analysis

dependencies: [medical\_positioning\_strategy]

agent: technical\_research\_specialist, competitor\_analyzer

medical\_search\_landscape:

type: Strategic

description: Patient search behaviour and competitor digital presence

status: completed

deliverable: Medical search landscape and patient search behaviour analysis

dependencies: [healthcare\_trends\_content\_gaps]

agent: seo\_strategist, competitive\_intelligence\_searcher

### Phase 3: Advanced SEO & Keyword Strategy ✅ COMPLETED

#### Task Dependencies Completed:

`yaml

medical\_keyword\_research:

type: SEO\_Strategy

description: Comprehensive medical keyword research and patient search journey mapping

status: completed

deliverable: Medical keyword database and patient search intent analysis

dependencies: [medical\_search\_landscape]

agent: keyword\_researcher

local\_seo\_strategy:

type: SEO\_Strategy

description: Sydney medical local search optimisation and cultural targeting

status: completed

deliverable: Local Sydney medical SEO strategy

dependencies: [medical\_keyword\_research]

agent: seo\_strategist, technical\_research\_specialist

### Phase 4: Content Planning & AI Optimisation ✅ COMPLETED

#### Task Dependencies Completed:

`yaml

medical\_content\_briefs:

type: Content\_Strategy

description: Patient-focused content briefs with conversion optimisation

status: completed

deliverable: Medical content briefs with patient-centric design

dependencies: [local\_seo\_strategy]

agent: content\_strategist, page\_content\_brief\_agent

ai\_optimization\_guide:

type: Technical

description: AI system compatibility and voice search optimisation

status: completed

deliverable: Medical AI optimisation strategy

dependencies: [medical\_content\_briefs]

agent: ai\_specialist\_agent, blog\_ideation\_specialist

content\_calendar\_authority:

type: Content\_Strategy

description: 12-month content calendar and authority building strategy

status: completed

deliverable: Strategic medical content calendar and authority framework

dependencies: [ai\_optimization\_guide]

agent: content\_strategist

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## 🔄 ITERATIVE FEEDBACK LOOP IMPLEMENTATION

### Medical Content Quality Gate Framework:

#### Feedback Loop Sequence for Medical Content:

`yaml

medical\_content\_feedback\_loop:

type: IterativeImprovement

description: Multi-agent iterative feedback loop for medical content optimisation

quality\_gate\_orchestrator: quality\_gate\_orchestrator

max\_iterations: 3

success\_criteria:

* All agent thresholds met (≥7.0/10 minimum)
* Aggregate score ≥8.5/10
* Medical compliance verified
* Patient safety standards met

agent\_sequence:

1:

agent: clarity\_conciseness\_editor

threshold: 8.0

focus:

* Medical terminology clarity for patients
* Australian English medical compliance
* Grammar and professional medical tone
* Health literacy appropriate language

2:

agent: cognitive\_load\_minimizer

threshold: 7.0

focus:

* Medical information hierarchy optimisation
* Patient comprehension enhancement
* Health literacy consideration
* Cultural sensitivity integration

3:

agent: content\_critique\_specialist

threshold: 7.0

focus:

* Medical accuracy verification
* Evidence-based claims validation
* Logical medical information flow
* Patient safety assessment

4:

agent: ai\_text\_naturalizer

threshold: 8.0

focus:

* Natural medical communication tone
* Patient-friendly medical explanations
* Professional yet approachable content
* Cultural and demographic sensitivity

quality\_requirements:

medical\_accuracy: "All medical claims evidence-based with peer-reviewed sources"

patient\_safety: "No misleading medical information or unsafe recommendations"

professional\_standards: "AHPRA compliant medical marketing and communication"

accessibility: "Health literacy appropriate for diverse patient populations"

cultural\_sensitivity: "Inclusive medical communication respecting cultural diversity"

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## 🏥 MULTI-SQUAD SPECIALIST AGENT COORDINATION

### SiteSpect Squad Technical Implementation:

#### Website Audit and Technical Analysis:

`yaml

sitespect\_comprehensive\_audit:

type: Technical\_Analysis

description: Complete medical website technical audit and optimisation

dependencies: [content\_calendar\_authority]

agent: sitespect\_orchestrator

sub\_tasks:

technical\_seo\_analysis:

agent: technical\_seo\_analyst

focus: Medical website technical SEO with Playwright MCP integration

deliverable: Technical SEO audit with medical compliance

performance\_testing:

agent: performance\_tester

focus: Core Web Vitals analysis and medical website speed optimisation

deliverable: Performance analysis with user experience recommendations

accessibility\_compliance:

agent: accessibility\_checker

focus: WCAG compliance for medical content accessibility

deliverable: Accessibility audit with inclusion recommendations

ux\_flow\_validation:

agent: ux\_flow\_validator

focus: Patient user experience and medical consultation conversion

deliverable: UX analysis with patient journey optimisation

advanced\_seo\_extraction:

agent: advanced\_seo\_meta\_extractor

focus: Medical SEO metadata extraction and indexability

deliverable: SEO metadata audit with medical content optimisation

sitemap\_generation:

agent: text\_sitemap\_generator

focus: Human-readable medical site structure documentation

deliverable: Medical website sitemap with navigation optimisation

### ContentForge Squad Quality Assurance:

#### Medical Content Development and Feedback Integration:

`yaml

medical\_content\_development:

type: Content\_Creation

description: Medical content creation with mandatory feedback loops

dependencies: [sitespect\_comprehensive\_audit]

feedback\_loop\_integration: true

content\_generation\_phase:

agent: content\_generator

description: Medical content creation based on comprehensive research foundation

dependencies: [sitespect\_comprehensive\_audit]

deliverable: SEO-optimised medical content with patient education focus

feedback\_loop: medical\_content\_feedback\_loop

enhanced\_content\_audit:

agent: enhanced\_content\_auditor

description: Multi-perspective medical content quality review

dependencies: [content\_generation\_phase]

deliverable: Medical content compliance certification and publication readiness

quality\_gates:

* Medical accuracy verification
* Patient safety assessment
* AHPRA compliance confirmation
* Cultural sensitivity evaluation
* British English compliance check

### StrategyNexus Squad Strategic Integration:

#### Comprehensive Strategic Analysis and Implementation:

`yaml

strategic\_coordination:

type: Strategic\_Analysis

description: Medical marketing strategy coordination and executive synthesis

dependencies: [enhanced\_content\_audit]

agent: strategy\_orchestrator

sub\_tasks:

brand\_analysis\_medical:

agent: brand\_analyst

focus: Medical practice brand analysis with computer vision and visual assessment

deliverable: Medical brand positioning and visual identity analysis

advanced\_seo\_strategy:

agent: seo\_strategist

focus: Medical SEO strategy with semantic analysis and topic modeling

deliverable: Advanced medical SEO implementation strategy

patient\_journey\_optimization:

agent: user\_journey\_mapper

focus: Patient experience optimisation and medical consultation conversion

deliverable: Patient journey mapping with conversion path optimisation

content\_performance\_framework:

agent: content\_performance\_analyst

focus: Medical content analytics and continuous improvement framework

deliverable: Performance measurement and optimisation strategy

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## 📊 QUALITY ASSURANCE AND MEDICAL COMPLIANCE CHECKPOINTS

### Medical Content Quality Gates:

#### Pre-Publication Medical Review:

`yaml

medical\_review\_checkpoint\_1:

type: Medical\_Accuracy

description: Clinical accuracy and evidence-based verification

agents: [content\_critique\_specialist, medical\_compliance\_reviewer]

criteria:

* All medical claims supported by peer-reviewed research
* Procedure information clinically accurate
* Risk disclosure appropriate and complete
* Statistical data verified and current

medical\_review\_checkpoint\_2:

type: Regulatory\_Compliance

description: AHPRA and TGA compliance verification

agents: [brand\_compliance\_auditor, legal\_medical\_reviewer]

criteria:

* AHPRA medical marketing guidelines adherence
* TGA advertising compliance for medical procedures
* Patient privacy and confidentiality protection
* Professional conduct standards maintenance

medical\_review\_checkpoint\_3:

type: Patient\_Safety

description: Patient safety and communication assessment

agents: [cognitive\_load\_minimizer, patient\_safety\_reviewer]

criteria:

* Health literacy appropriate communication
* Clear risk and benefit communication
* Emergency information and contact protocols
* Cultural sensitivity and inclusivity

### Iterative Improvement Protocols:

#### Feedback Loop Termination Conditions:

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successful\_completion:

condition: "All agent thresholds met AND aggregate score ≥8.5/10"

actions:

* Content approved for publication
* Quality certification issued
* Performance baseline established
* Monitoring protocols activated

improvement\_required:

condition: "Agent threshold not met OR aggregate score <8.5/10"

actions:

* Targeted improvement recommendations generated
* Specific agent feedback applied
* Content refined by content\_refiner
* Re-evaluation through feedback loop

escalation\_required:

condition: "No improvement after 2 feedback cycles"

actions:

* Human expert review requested
* Medical professional consultation
* Strategy adjustment consideration
* Timeline and scope re-evaluation

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## 🎯 IMPLEMENTATION TIMELINE AND MILESTONES

### Phase 5: Technical Implementation (Week 1-2):

#### Week 1 - SiteSpect Squad Execution:

* **Monday-Tuesday**: Technical SEO analysis and performance testing
* **Wednesday-Thursday**: Accessibility compliance and UX flow validation
* **Friday**: Advanced SEO extraction and sitemap generation
* **Deliverable**: Comprehensive technical audit report

#### Week 2 - StrategyNexus Squad Coordination:

* **Monday-Tuesday**: Brand analysis and advanced SEO strategy
* **Wednesday-Thursday**: Patient journey optimisation and performance framework
* **Friday**: Strategic integration and executive synthesis
* **Deliverable**: Strategic implementation roadmap

### Phase 6: Content Creation and Quality Assurance (Week 3-4):

#### Week 3 - Content Generation with Feedback Loops:

* **Monday-Wednesday**: Medical content creation with iterative feedback
* **Thursday-Friday**: Enhanced content audit and compliance verification
* **Deliverable**: Publication-ready medical content

#### Week 4 - Final Integration and Launch Preparation:

* **Monday-Tuesday**: Cross-squad integration and final quality assurance
* **Wednesday-Thursday**: Launch preparation and monitoring setup
* **Friday**: Project completion and ongoing maintenance protocols
* **Deliverable**: Complete medical content strategy implementation

### Success Metrics and KPI Framework:

#### Immediate Success Indicators (30 days):

* Website technical performance improvements (>20% speed increase)
* Medical content publication and SEO ranking initiation
* Patient consultation booking system optimisation
* Multi-cultural accessibility implementation

#### Medium-Term Success Indicators (90 days):

* Organic search traffic increase (>50% growth target)
* Medical keyword ranking improvements (top 3 positions for target terms)
* Patient engagement metrics enhancement (>30% improvement)
* Professional referral network growth initiation

#### Long-Term Success Indicators (12 months):

* Medical authority establishment and thought leadership recognition
* Patient volume growth through digital marketing (>100% increase)
* Community engagement and cultural competence recognition
* Professional network expansion and academic collaboration

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**Task Dependencies Status**: Comprehensive multi-squad coordination framework complete

**Quality Assurance Integration**: Medical compliance and iterative feedback loops implemented

**Implementation Timeline**: Coordinated execution plan with measurable milestones

**Success Framework**: KPI tracking and continuous improvement protocols established