Software Requirements Specification (SRS)

System: Appointment Transcription
Compliance: Australian Dental Standards, Privacy Act 1988, Dental Board of Australia

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1. Introduction

1.1 Purpose

The purpose of the "Appointment Transcription" workflow is to capture dentist-patient conversations during clinical appointments via microphone input, transcribe them into text, and generate structured **S.O.A.P. (Subjective, Objective, Assessment, Plan)** notes. These notes are then securely stored in the patient's record for clinical and legal compliance.

1.2 Scope

The workflow integrates with the secure patient database and supports accurate, real-time transcription and SOAP note generation using AI tools. The system ensures adherence to the **Australian Privacy Principles (APPs)**, **Dental Board of Australia's record-keeping standards**, and **ACSQHC clinical safety requirements**. This enables improved accuracy, efficiency, and continuity of dental care.

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2. Overall Description

- Captures live audio from dentist's microphone during patient consultation.

- Transcribes spoken conversation into accurate clinical text.

- Uses AI Summarisation Agent to generate SOAP notes.

- Stores SOAP notes in the patient's electronic record with metadata (author, timestamp).

Users:

- **Primary Users:** Registered Dentists.

- **Secondary Users:** Authorised dental support staff (with read-only or review permissions).

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3. System Requirements

Functional Requirements

- Securely connect to the Supabase patient record database.

- Capture live microphone audio during appointments.

- Transcribe audio into accurate text using transcription service.

- Apply AI Agent to convert transcriptions into SOAP note format.

- Store SOAP notes in patient record with author ID, date, and timestamp.

- Provide dentists with the ability to review and edit notes before final save.

Non-Functional Requirements

- **Performance:** Real-time transcription latency <2 seconds, SOAP note generation <5 seconds.

- **Accuracy:** Minimum 95% transcription accuracy benchmark.

- **Privacy & Security:** Encrypt audio streams, store data securely, comply with APPs.

- **Auditability:** Each transcription and SOAP note logged with practitioner ID, session ID, and timestamp.

- **Usability:** Provide a clear review/edit interface for clinicians before record finalisation.

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4. External Interfaces

- **Database:** Supabase (secure patient records storage).

- **Microphone:** Captures live appointment audio.

- **Transcriber:** Converts audio to text (real-time speech recognition).

- **AI Agent:** Generates SOAP notes from transcription.

- **MCP Tool:** Orchestrates workflow execution, ensuring compliance logging.

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5. Compliance References

- **Dental Board of Australia – Guidelines for Dental Records**

- **Australian Commission on Safety and Quality in Health Care (ACSQHC) Standards**

- **Privacy Act 1988 (Cth) – Australian Privacy Principles (APPs)**

- **Code of Conduct for Registered Health Practitioners (AHPRA)**

- **Health Records and Information Privacy Act 2002 (NSW)** and equivalent state/territory laws

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6. Risk Management

Risk	Impact	Mitigation Strategy
Poor transcription accuracy	Misleading patient records	AI validation, dentist review workflow
Data breach of live audio	Compromise of sensitive health information	Encrypt audio streams, access controls
Latency in transcription	Workflow disruption during appointment	Low-latency transcription engine, failover
Non-compliance with dental records policy	Legal/regulatory penalties	Align workflow with Dental Board guidelines
Unauthorized access to transcripts	Breach of confidentiality	Role-based access, logging, monitoring
Technical failures (mic, agent)	Loss of patient notes	Backup recording, error handling, redundancy

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7. Data Retention & Disposal Policy

- **Retention:** SOAP notes retained as part of patient record for at least 7 years after last patient contact.

- **Minors:** Retain until patient turns 25, or 7 years after last entry (whichever is longer).

- **Disposal:** Secure deletion (digital erasure), cross-shredding for any printed notes.

- **Backups:** Encrypted backups stored in Australia, subject to same retention rules.

- **Verification:** Disposal logged and verified by compliance officer.

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8. Compliance Matrix

Requirement	Relevant Standard / Law	Reference
Encrypt live audio and stored transcripts	Privacy Act 1988 (Cth)	APP 11
Restrict access to authorised clinicians	Dental Board confidentiality, Privacy Act	APP 6
Maintain transcription accuracy & completeness	Dental Board Guidelines	Sections 3.2 & 3.4
SOAP notes must include author, date, time	Dental Board record keeping	Section 4.2
Retain SOAP notes for 7 years	Dental Board Guidelines	Section 3.8
Retain minors' SOAP notes until 25	Dental Board Guidelines	Section 3.8
Provide dentist review/edit before save	ACSQHC – Clinical Governance	NSQHS 1.10
Backup & failover for continuity of care	ACSQHC NSQHS Standards	Standard 1.10
Generate SOAP notes in <5s	ACSQHC Clinical safety	NSQHS 1.27
Incident response for data breaches	Privacy Act, NDB Scheme	APP 11
Annual risk assessments	ACSQHC Continuous improvement	NSQHS 1.09