ORACLE

AI in Healthcare

Industry Specific Use Cases

OCI AI Services, 2023

AI in Healthcare

Claims processing

AI-driven claims processing for better, more efficient provider reimbursement

Know your customer

Extract key values from identification documents and insurance cards

Codify EHR records and charges

AI Powered NLP can assist in EHR insight extraction and codification, saving health provider's time

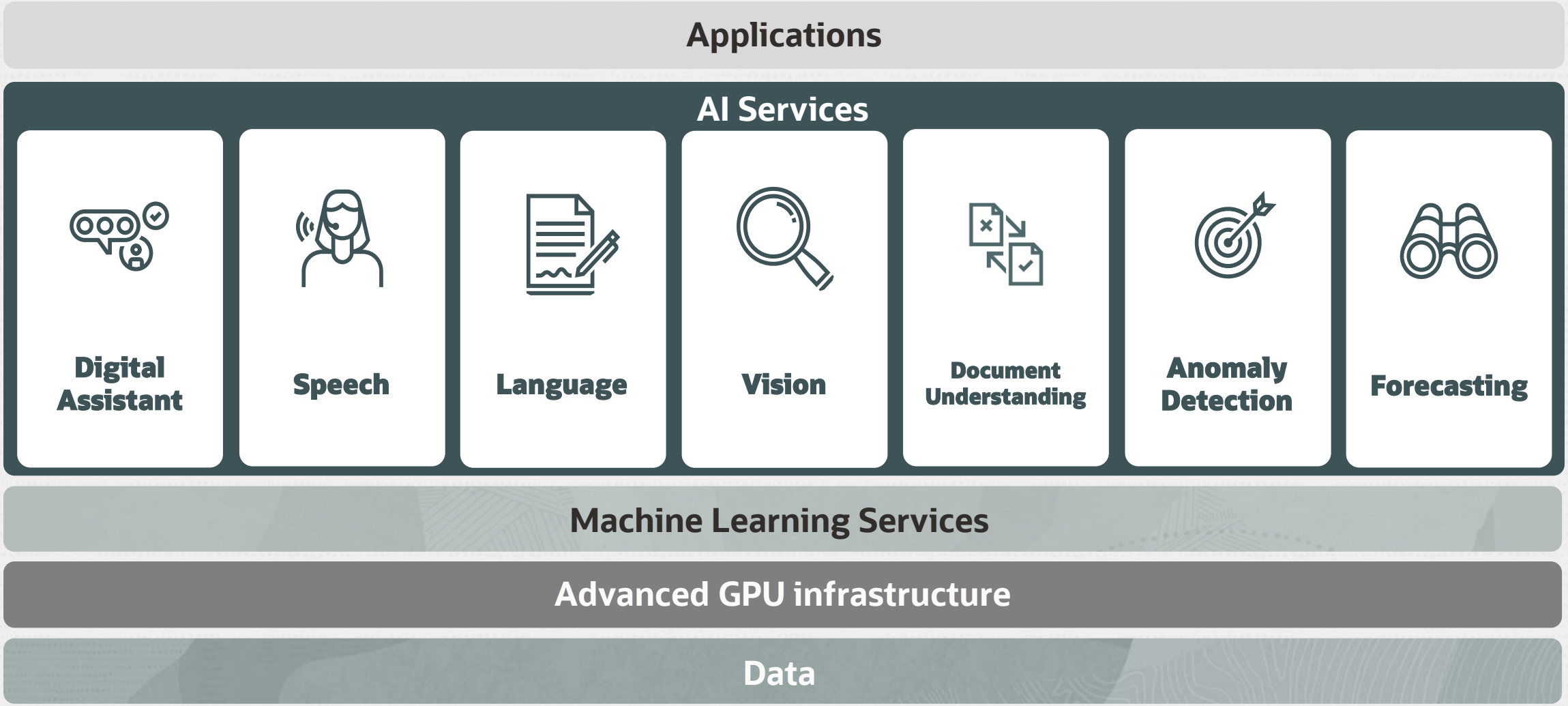
Enable Health Sciences Research

AI enabled clinical trial notes processing

Automatic Translation

OCI Language enables high quality translation to support research collaboration

Oracle AI



Machine Learning Services from Oracle

Applications

AI Services

Machine Learning Services

Data Science

ML in Oracle Database

Heatwave ML

Data Labeling

Advanced GPU infrastructure

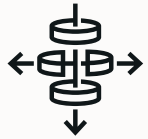
Data

Benefits of OCI AI Services

AI for everyone

An AI starting point, even without data science experience

Prebuilt for enterprise requirements



Prebuilt models trained on industry-derived data

Optimized for use cases across finance, manufacturing, and more

Built-in insight highways into your SaaS applications with Oracle NetSuite, Fusion, and custom apps

Customizable for your needs

Tailor your AI models without data science experience

Save costs by training AI models already on OCI

Best-in class support

White glove treatment
Data scientists on staff, dedicated to ensuring your organization's success

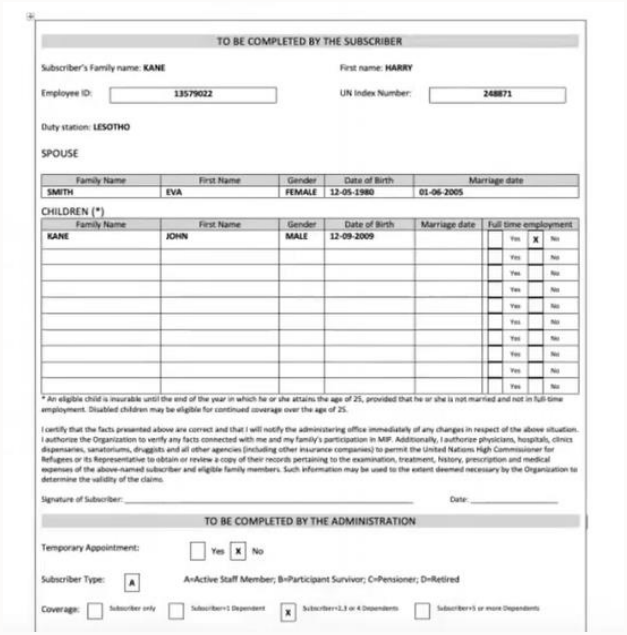
Pricing to support AI experimentation

Claims processing

A detailed use case

AI-driven claims processing for better, more efficient provider reimbursement

- Reduce manual error and time
- Reduce number of rejected claims



TO BE COMPLETED BY THE SUBSCRIBER

Subscriber's Family name: KANE First name: HARRY

Employee ID: 13579022 UN Index Number: 248871

Duty station: LESOTHO

SPOUSE

Family Name	First Name	Gender	Date of Birth	Marriage date
SMITH	EVA	FEMALE	12-05-1980	01-06-2005

CHILDREN (*)

Family Name	First Name	Gender	Date of Birth	Marriage date	Full time employment
KANE	JOHN	MALE	12-09-2009		Yes [X] No

* An eligible child is insurable until the end of the year in which he or she attains the age of 25, provided that he or she is not married and not in full-time employment. Disabled children may be eligible for continued coverage over the age of 25.

I certify that the facts presented above are correct and that I will notify the administering office immediately of any changes in respect of the above situation. I authorize the Organization to verify any facts connected with me and my family's participation in MIP. Additionally, I authorize physicians, hospitals, clinics dispensaries, sanatoriums, druggists and all other agencies (including other insurance companies) to permit the United Nations High Commissioner for Refugees or its Representative to obtain or review a copy of their records pertaining to the examination, treatment, history, prescription and medical expenses of the above-named subscriber and eligible family members. Such information may be used to the extent deemed necessary by the Organization to determine the validity of the claims.

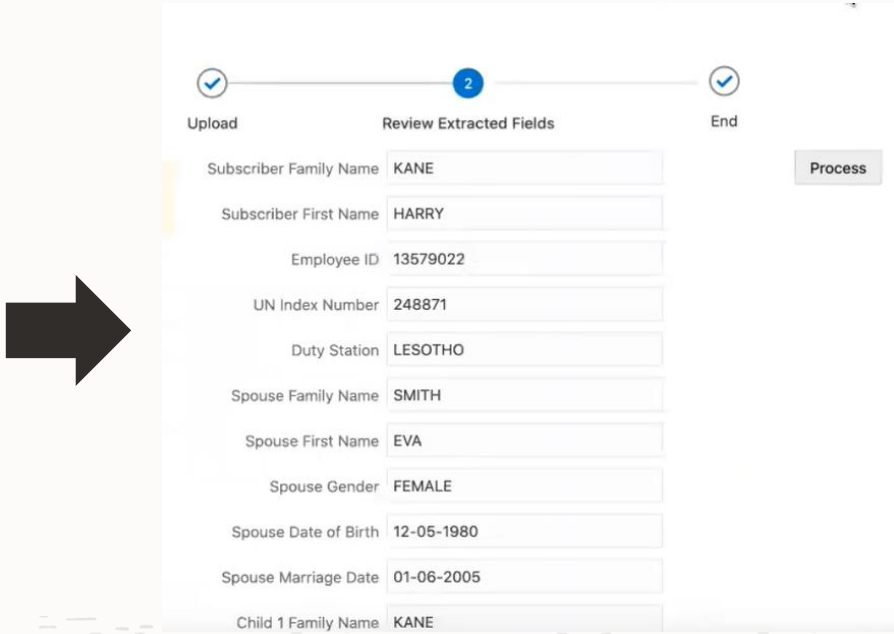
Signature of Subscriber: _____ Date: _____

TO BE COMPLETED BY THE ADMINISTRATION

Temporary Appointment: Yes [X] No

Subscriber Type: [A] A=Active Staff Member; B=Participant Survivor; C=Pensioner; D=Retired

Coverage: Subscriber only | Subscriber+1 Dependent | [X] Subscriber+2,3 or 4 Dependents | Subscriber+5 or more Dependents



Approaching the problem

Collect claim data

- Health insurance documents (enrollment forms, claim documents, cover letters) often come in semi-structured and unstructured formats like PDF, PNG, and JPEG as they are shared across payers and providers

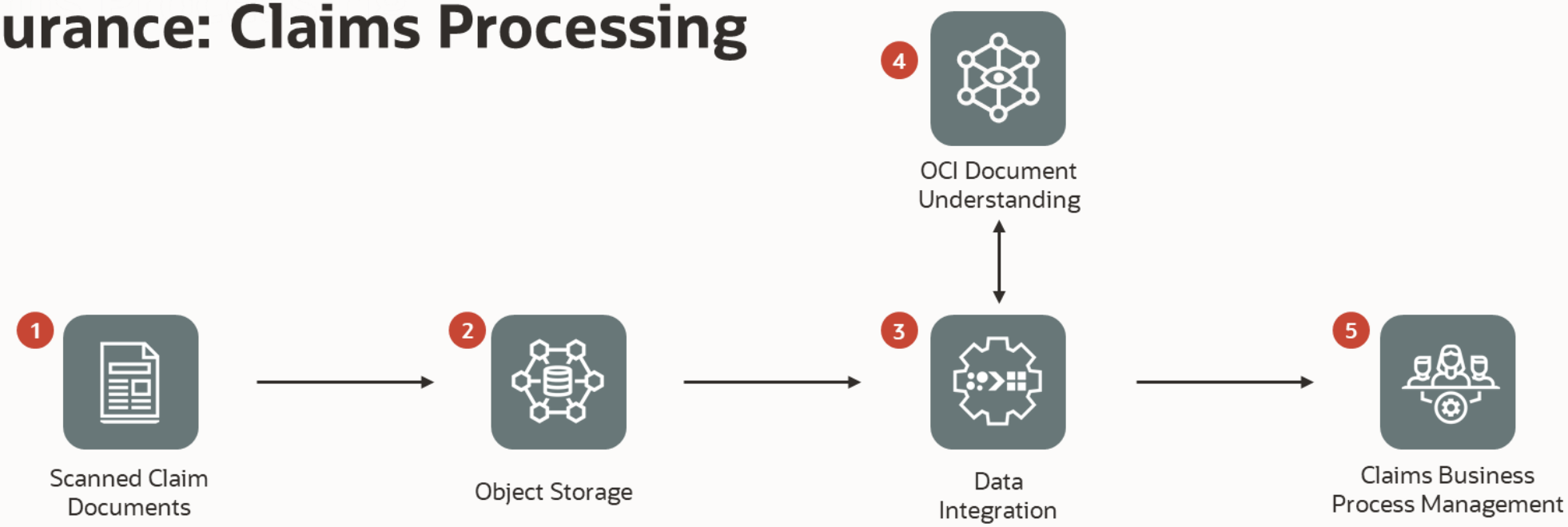
Extract key fields

- Key information , such as subscriber name, group plan number, and procedure code, if incorrectly submitted or forgotten, can be grounds for rejecting a claim
- Extract these key fields using OCI Document Understanding

Store, submit, or process information

- Use key fields to submit a new claim for reimbursement
- Create a process flow that challenges a rejected claim if key fields are found in the original submission document
- Use structured text output of aggregate claim data to train a model that predicts the likelihood of a claim getting rejected

Insurance: Claims Processing



1. Paper documents are scanned to create document images
2. Document images are staged in object storage
3. OCI Data Integration ingests images and invokes OCI Document Understanding for processing, receives extracted image data, and initiates claims process
4. OCI Document Understanding processes images for text recognition
5. Process Cloud Service drives claim images and data through the customer-specific business process

Know your customer

Extract key values from identification documents and insurance cards

OCI Document Understanding

- Reduce manual error and entry time
- Pre-built models for passports, driver licenses, etc.
- Custom models allow you to support any document type, extract information from any form or insurance card
- Train models to classify different kinds of document

Codify EHR records and charges

OCI Language (Roadmap)

AI Powered NLP can assist in EHR insight extraction and codification, saving health provider's time

- Automatically extract medical entities such as signs and symptoms, diseases, medications, procedures, lab tests
- Identifies standard codes for detected entities: SNOMED, ICD10
- Identifies and de-identifies Protected Health Information (PHI) in EHR records

Benefits

Assisted Charge Codes

- With automatic extractions of health entities such as signs and symptoms, diseases, you can write simple rules to calculate AMA codes

Efficient Chart Preparation

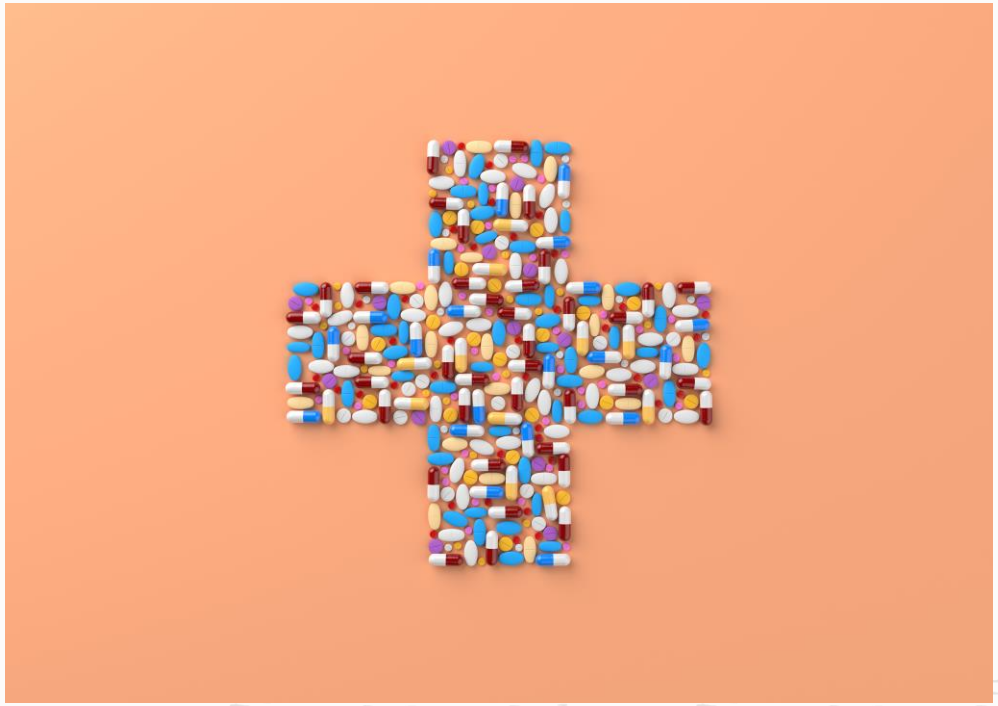
- Assisted coding with Entity linking for SNOMED, ICD10 can reduce significant effort of coders
- With automatic extraction of disease, examination and laboratory tests, you can build smart recommendations for missing diagnostics and recommended treatments

Efficient Search in patient's history

- EHR records contain unstructured text and often prepared by different physicians. Search for *Amlodipine* returns records containing terms: *Norvasc*, *Lisinopril* (as they are same drugs)
- Use OCI Language API to extract standard codes (e.g. SNOMED) from EHR records, as well as from the search string and then return the EHR records having the matching codes

Enable Health Sciences Research

A detailed use case



AI enabled clinical trial notes processing

- Clinical trial records such as adverse drug reaction event notes contain protected health information (PHI) along with the signs and symptoms, often captured in regional languages
- Manual anonymization and translation consumes significant effort and slows down the research process
- With machine translation and PHI extraction and de-identification, clinical trials note processing can be expedited.

Benefits

Protect Privacy

- With automatic identification and de-identification of subject details, clinical trial notes such as adverse event notes, patient vitals can be shared with research community faster.

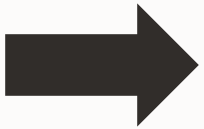
Efficient Research

- Machine translation to translate records from regional languages to researcher's own language
- Automatic extraction of disease, examination and laboratory tests helps derive insights and establish broader patterns amongst participants

Automatic Translation

OCI Language enables high quality translation to support research collaboration

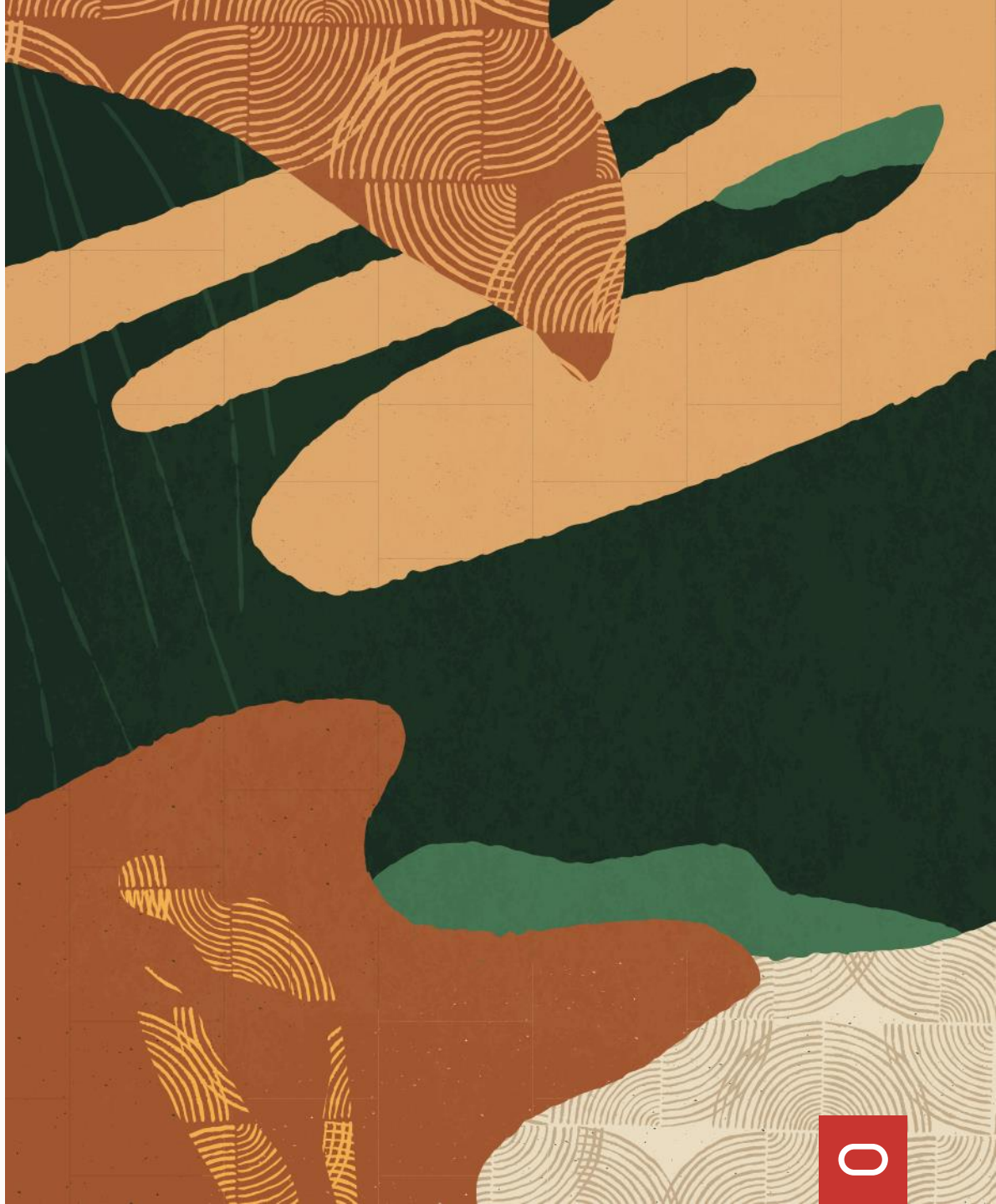
Introducción. El metronidazol es un antibiótico ampliamente conocido y utilizado. En casos excepcionales puede producir como efecto adverso un cuadro de encefalopatía con unas lesiones características en la resonancia magnética, localizadas generalmente en el cerebelo y el esplenio del cuerpo calloso. La incidencia y la patogenia se desconocen. La suspensión del tratamiento habitualmente resuelve los síntomas y normaliza la resonancia magnetica en pocas semanas. Debido al habitual buen pronostico, los hallazgos anatomopatológicos son excepcionales. Se presenta un caso clínico con los hallazgos radiológicos sugestivos de la encefalopatía inducida por metronidazol y, de forma excepcional, se aportan los hallazgos anatomopatologicos. Caso clínico.



Introduction. Metronidazole is a widely known and used antibiotic. In exceptional cases, encephalopathy with characteristic lesions in magnetic resonance, usually located in the cerebellum and the splenium of the corpus callosum, can produce an adverse effect. The incidence and pathogenesis are unknown. Suspension of treatment usually resolves symptoms and normalizes magnetic resonance within a few weeks. Due to the usual good prognosis, anatomopathological findings are exceptional. A clinical case is presented with radiological findings suggestive of metronidazole-induced encephalopathy and, exceptionally, anatomopathological findings are provided. Case report. A 72-year-old woman, with severe Crohn's disease, who had a slowly

Thank you

AI Services




ORACLE