



Katana Ai

Saving lives and preventing
harm due to medication errors.

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What is Katana Ai ?

Katana is an advanced AI assistant designed specifically for healthcare professionals. It uses cutting-edge technology and up-to-date drug interaction guidelines to provide accurate, real-time decisions on drug prescriptions.

How Katana AI will save lives & prevent harm.

Katana AI will provide rapid and immediate AI-assisted advice for all types of healthcare workers to prevent medication-related harm.

Healthcare professionals will use Katana AI to assess patients' current medications for potential interactions with new treatments.

A traffic light system, red, amber, green advises on the safety of the new treatment with existing medications

Medication errors – the scale of the problem

Medication errors are a leading cause of injury and avoidable harm in healthcare systems globally.

Estimates suggest that up to 1 in 4 patients are harmed by a medication error, with 134 million adverse events occurring in hospitals annually, contributing to about 2.6 million deaths.

The cost associated with medication errors globally at €41.4 billion annually, not counting lost wages and productivity.

Benefits for healthcare systems

Safer prescribing 24/7 – Rapid response – Improved accuracy, efficiency, and safety of medication management – Better patient outcomes – Reduced costs, and more personalised care.



Case Scenario General Practice

A 29-year-old Caucasian woman with a history of schizoaffective disorder visited her General practitioner with oral candidiasis. After a short wait, the GP conducted a thorough history and examination. Swabs from her mouth were taken for culture and sensitivity tests. Her medications were briefly reviewed, and she was discharged with a prescription for oral antifungal treatment.

Three weeks later, the patient presented to an emergency department complaining of nausea, vomiting

and palpitations. Her ECG and echocardiography revealed abnormalities, including pericardial effusion. She was admitted to the Coronary Care Unit, where multiple medical teams eventually diagnosed her with Clozapine toxicity. Her symptoms improved after discontinuing the antifungal treatment and oral contraceptives.

With Katana Ai

The same GP used Katana AI before prescribing the antifungal treatment. Katana AI flagged a Red Alert drug interaction between the antifungal medication, clozapine, and oral contraceptives.

The AI explained that clozapine is metabolised by cytochrome P450, and inhibitors or other substrates of cytochrome P450, such as antifungals and oral contraceptives, can cause long-lasting interactions leading to Clozapine toxicity.

As a result, the doctor withheld the oral contraceptive, and after consulting with the patient's psychiatrist, the clozapine dose was reduced during the antifungal treatment. The patient was successfully treated without complications.

With a glance

The patient came to serious harm due to the interactions of the antifungal medication, oral contraceptive, and clozapine.

With Katana

Harm to the patient was prevented.

Case Scenario Hospital Care

A 64-year-old man was admitted to the hospital with right lower limb cellulitis. The medical registrar conducted a thorough history and evaluation, determining that the cellulitis was due to a superficial infection from longstanding venous eczema. Due to a severe penicillin allergy, penicillin-based antibiotics and cephalosporins were avoided. Fluoroquinolones were also not used due to other potential risks. After discussing the case with the Microbiology department, erythromycin was recommended based on previous culture sensitivities.

After three days of treatment, the cellulitis improved, but the patient complained of muscle aches. On the fourth day, the patient reported brown urine, and tests showed elevated Creatine Kinase levels, leading to a diagnosis of rhabdomyolysis. Despite intravenous hydration, the patient developed acute renal failure and was transferred to ICU for hemofiltration. After several days in ICU, he recovered and was discharged to the ward and eventually home after a prolonged hospital stay.

With Katana Ai

The medical registrar used Katana AI before starting the antibiotic treatment. Katana AI flagged a red alert interaction between erythromycin and the patient's current statin. The AI explained that concomitant use of statins and erythromycin can cause elevated serum transaminase levels, myopathy, rhabdomyolysis, and acute renal failure. Consequently, the registrar held the statin and treated the patient, remaining vigilant for signs of rhabdomyolysis and ensuring proper hydration. The patient made an uncomplicated recovery and a short hospital stay. He resumed his statin after completing the antibiotic course.



With a glance

The patient came to serious harm due to the interactions of the antibiotic and statin.

With Katana

Harm to the patient was prevented.



Later, the patient presented to the emergency department with profound left-sided weakness. A CT scan showed a haemorrhage in the right cerebral hemisphere with a 10-mm midline shift. His prothrombin time and INR were significantly elevated. He became comatose and died within hours of arrival.

With Katana Ai

The urologist used Katana AI before starting treatment. Katana AI highlighted a Red Flag interaction between fluoroquinolones and warfarin, noting that fluoroquinolones potentiate the effects of warfarin by inhibiting vitamin K-producing intestinal flora. The AI also noted increased risk with co-administration of aspirin and levothyroxine. As a result, the urologist chose an alternative antibiotic and implemented regular INR monitoring with the practice nurse. The patient experienced no adverse outcomes.

Case Scenario Outpatient Clinic

A 77-year-old man was referred to a Urologist for the treatment of prostatitis. His medical history included hypertension, benign prostatic hypertrophy, type 2 diabetes, hypothyroidism, squamous cell carcinoma of the pharyngeal wall, and recent coronary artery bypass grafting. He was on numerous medications, including warfarin, aspirin, levothyroxine, and atorvastatin. Following history and examination, post-prostatic massage cultures were sent for analysis, and he was prescribed fluoroquinolone antibiotics for one month.

With a glance

The patient died due to the dangerous interactions between the antibiotic, aspirin, warfarin and levothyroxine

With Katana

Harm to the patient was prevented.

Case Scenario

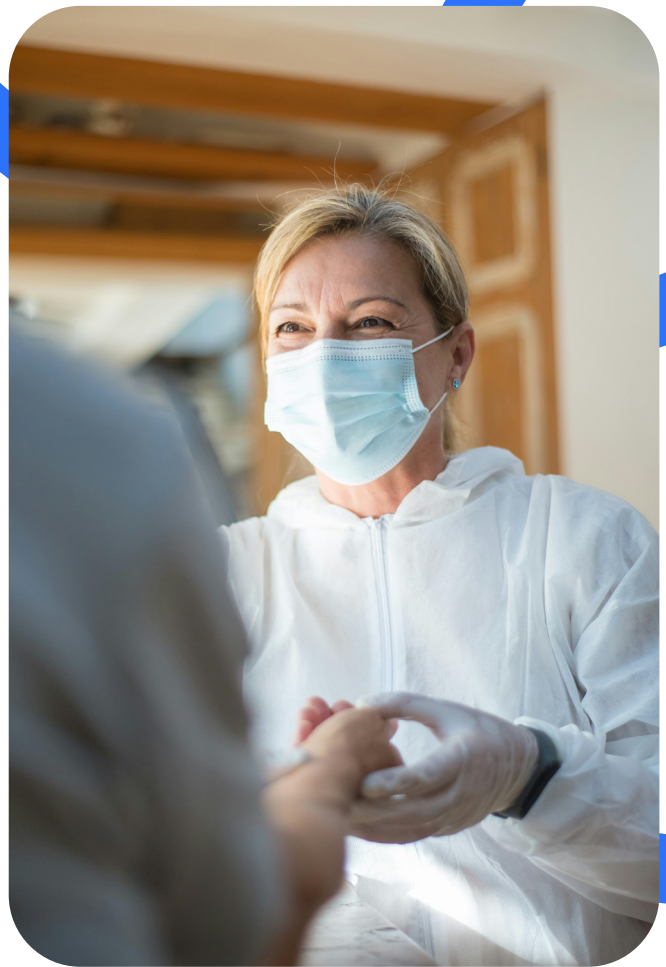
Community Setting

Alice is a nurse who works at a rural nursing home. Alice is concerned about one of her favourite residents, Pat, an 87-year-old gentleman with a warm smile and a sharp wit, who has suddenly taken a turn for the worse. Pat, who has lived a long and independent life, had always been fiercely opposed to visiting hospitals. His experiences with the cold, sterile environment of emergency departments had left him resolute in his desire to stay in the nursing home, surrounded by familiar faces. Today, however, Pat is unwell. His breathing is laboured, his cough persistent, and a slight fever suggests something more serious than the common cold.

Alice contacts the general practitioner. Unfortunately, due to the doctor's overwhelming caseload, a visit to the nursing home isn't possible today. Instead, the GP listens intently as Alice describes Pat's symptoms over the phone. The GP decides to prescribe Co-amoxiclav.

Alice is relieved knowing that Pat will soon receive treatment, but her relief is tinged with anxiety. Pat is already on 14 different medications for various chronic conditions, including heart disease, diabetes, and high blood pressure. Alice worries that introducing a new medication could lead to dangerous interactions, potentially worsening Pat's condition. The stakes are high, and Alice feels the weight of the decision on her shoulders.

Alice uses the Katana AI app on her smartphone. She takes a clear picture of Pat's medication list, which includes everything from blood thinners to diabetes management drugs. The app's AI processes the information rapidly, cross-referencing it with the newly prescribed Co-amoxiclav.



Within seconds, Katana AI displays its analysis: 'No significant interactions detected.' The app further explains that Co-amoxiclav has interactions primarily with oral anticoagulants and gout medications, neither of which are on Pat's list.

Alice feels a surge of relief wash over her. Not only does the app confirm that it's safe to administer the antibiotic, but it also educates her on the specifics of the potential interactions, deepening her understanding.

With a glance

The patient died due to the dangerous interactions between the antibiotic, aspirin, warfarin and levothyroxine