Plain Language Integration in Electronic Health Record Systems

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Abstract: Despite the rapid digitization of healthcare systems, **Electronic Health Records (EHRs)** continue to present medical information in complex, technical language that many patients struggle to understand. This communication barrier is especially detrimental for individuals with **limited health literacy**, **older adults, people with cognitive impairments,** and those from **diverse linguistic** or **educational backgrounds**.

When medical information is not conveyed in a clear and accessible way, it leads to serious consequences. **Patients often leave clinical visits confused about their diagnoses, medication instructions, or discharge plans.** This misunderstanding frequently results in misdiagnoses, avoidable complications, unnecessary readmissions, and poor treatment adherence.

In many cases, patients are provided with overwhelming or overly technical educational materials that exceed their literacy capabilities. **The gap in comprehension between clinicians and patients not only jeopardizes patient safety but also contributes to delayed care and increased healthcare costs.** These issues highlight the urgent need to redesign patient-facing healthcare communication using plain language principles and AI-driven tools.

This research addresses this critical need by integrating plain language translation into EHR systems using **natural language processing (NLP)** and **machine learning techniques**, making healthcare information more accessible, actionable, and patient-centered.