**Sunrise Hospital Check-In Form Design Report**

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SYS 5013: System Engineering Analysis

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**Introduction**

This week I’ve designed a check-in form for an input design case study focused on improving the efficiency of the patient check-in process at Sunrise Hospital. This form is intended to streamline patient registration, reducing wait times, and improving overall patient experience. To achieve these objectives, we incorporated several best practices in form design: (1) making forms easy to complete, (2) ensuring forms are purpose-driven, (3) designing for accuracy, and (4) keeping forms visually appealing.

Our form includes key validation checks for fields such as date and time, checkbox, dropdown selections, and actionable buttons (submit, back, cancel) to make the check-in process more convenient and error-free. Additionally, the form includes several dynamical sections, like new patient check-in information: new patients are prompted to enter extra details like address, phone number, and email, enhancing data collection and minimizing redundant inputs for returning patients.

**Layout Overview**

To provide the patients a user-friendly experience, I chose a consistent layout with clearly labeled sections, ensuring a smooth flow for users of varying age groups and technical abilities. Dropdown menus and checkboxes were used wherever possible, reducing data entry errors, and simplifying the input process. For returning patients, details are prefilled, minimizing redundant inputs, and enhancing the check-in speed. Validation checks were also integrated into key fields, providing immediate feedback on errors like incorrect phone numbers or invalid dates. Overall, this design approach not only improves usability but also ensures data accuracy, making the check-in process efficient for both patients and hospital staff. Below is the detailed explanation on each section of the design:

**Figure 1**

*Patient Information Section*

A screenshot of a check in form

Description automatically generated

*Note*. picture by Hang Yang in 2024. Own work.

**Fields Explanation:**

* PatientID (for existing patients): PatientID is auto filled for returning patients, First Name, Last Name, Date of Birth are required for all patients.
* If New patient checkbox is selected, they are prompted to fill in Address, City, State, ZIP, Email, and Cell Phone. Existing patients’ details are prefilled but can be updated as needed.

**Figure 2**

*Medical Information Section*

A screenshot of a medical history form

Description automatically generated

*Note*. picture by Hang Yang in 2024. Own work.

**Fields Explanation:**

* Allergies (Food, Medication, Environment)
* Current Medications (free text)
* Preexisting Conditions (free text)
* Preexisting Surgeries (free text)

Ensure all allergies are recorded through checkboxes for easy selection. Medications, conditions, and surgeries include spell-checking to avoid errors.

**Figure 3**

*Appointment/Insurance Information Section*

A screenshot of a medical form

Description automatically generated

*Note*. picture by Hang Yang in 2024. Own work.

**Fields Explanation:**

* Dropdowns for Department and Specialist streamline selection and reduce input errors.
* Insurance provider is selected from a list, with an option for "Other" if not listed.
* Policy Number and Co-Pay are required if the patient has insurance.
* Emergency Contact’s Cell Phone includes phone number validation to ensure correct format.

**Conclusion**

Certain challenges may arise with this check-in form, particularly regarding data entry speed for new patients and the potential for errors in free-text fields. To address these, we suggest using progressive disclosure, showing only essential fields initially and prompting additional information based on patient type. Predictive text or auto-suggestions for medications and conditions would reduce errors in free-text fields, allowing for faster and more accurate data entry. Furthermore, full keyboard navigation is enabled to minimize switching between input devices, enhancing accessibility. Another potential issue is maintaining flexibility within a NoSQL database if implemented, so we recommend abstracted schema designs that allow for varied data structures. These measures address potential bottlenecks while ensuring the form remains adaptable to different user needs.

This input design for Sunrise Hospital’s patient check-in system is structured to be user-friendly, efficient, and accurate, addressing both patient and hospital needs. By incorporating dynamic elements and validation checks, the form reduces data entry errors and adapts to various patient types, whether new or returning. The layout emphasizes usability, ensuring essential information is collected promptly while minimizing redundancy. Overall, the design prioritizes functionality without compromising on simplicity, ultimately enhancing the hospital's ability to manage patient flow effectively.

**References**

Olivares, M. (2024, July 15). Allergy List. CarePatron. <https://www.carepatron.com/templates/allergy-list>