

Safety Enhanced Design Brief

Ensuring Timely Order Results Management

Background: Patient safety concerns arise when results of medical orders are mishandled or lost. Providers need assistance to track their orders in busy and distracting environments, in order to ensure timely medical care. Allowing providers to take action rapidly as they are reviewing results will also increase efficiency and reduce chances of errors (e.g. forgetting to complete the follow-up process). Institutions need help to track on-time and late processing of tests.

1 To help organizations determine normal and abnormal delays

- **Log order completion times per order type, test facilities, operators etc. and provide reports.**

This will allow organizations to determine what should be considered an abnormal delay. Record at least the time between ordering and return of the results, and when possible record the timing of each step in the process to detect the source of the delays (alternatively consider modeling the multi-step processes)

- **Allow users to define thresholds for abnormal delays**
- **Use those thresholds to tag orders as late or lost**

(e.g. a blood test sent to an outside facility may be considered late if no results are received after 5 working days, and lost after 10)

- **Allow customization, i.e. not all orders need to be tracked**

Either allow for manual selection of a few orders for assisted tracking, or track all orders but allow manual de-selection of certain orders or order types that may be tracked “as needed” on a case by case basis

2 To improve safety by improving awareness and reducing missed results

- **Show pending results**

In addition to the usual list of results to review, give rapid access to a list of pending orders, especially those that have NOT returned after the expected time (i.e. late or lost).

- **Sort tables of results by order of importance for timely management**

Results that have not been reviewed in a timely manner move to the top of the result list. Next list results that are new, then results that have been reviewed but the follow-up is incomplete.

Similarly the pending orders that appear to be late or lost move to the top of the pending orders list.

Support sorting by criticality

- **Distinguish preliminary and final results in the lists of results**

e.g. Use “p” versus “F”, or icons, or different font characteristics

Color legend also serves as set of filters

Prioritize by late and Lost Status

Show pending results

Patient	Test	Order Date	Review by	Abnormality
Patient, Anna	MRI / P	Mar, 3, 2011 1:22 AM	Mar, 10, 2011 1:22 AM	
Parker, Amy	MRI / P	Mar, 2, 2011 11:42 PM	Mar, 9, 2011 11:42 PM	
Stewart, Kim	Mammogram / F	Mar, 3, 2011 10:09 AM	Mar, 10, 2011 10:09 AM	
Bennett, Claire	Pap Smear / F	Mar, 7, 2011 8:00 PM	Mar, 14, 2011 8:00 PM	⚠
Cox, Pamela	Blood (BMP) / F	Mar, 8, 2011 9:34 PM	Mar, 15, 2011 9:34 PM	
Cox, Pamela	Blood (CBC) / F	Mar, 8, 2011 9:34 PM	Mar, 15, 2011 9:34 PM	
Cooper, Molly	Blood (BMP) / F	Mar, 6, 2011 10:48 PM	Mar, 13, 2011 10:48 PM	
Howard, Amanda	X- Ray / (E)	Mar, 8, 2011 10:22 AM	Mar, 15, 2011 10:22 AM	⚠
Grey, Bridget	Blood (BMP) / (E)	Mar, 8, 2011 9:34 PM	Mar, 15, 2011 9:34 PM	⚠
Howard, Amanda	Blood (CBC) / F	Mar, 8, 2011 9:34 PM	Mar, 15, 2011 9:34 PM	⚠

When possible clarify responsibility

(e.g. indicate the last person or office to take action on the order)

Provide retrospective analysis interfaces to managers

so they can monitor and compare the performance of various order processing facilities, adjust late-ness thresholds or take action so late or lost orders can be processed or re-ordered.

- **Provide filters and sorting to customize default views by user role**

e.g. while you can support providers by showing only their orders by default, you can support office assistants by showing critical, late or lost results for today's patients (so they might make appropriate calls to test facilities), or support clinic managers by showing results with late or no follow-up so they could alert providers or reassign results for review.

- **Embed Actions in result tables for quick handling of common/low risk tasks**

e.g. “inform patient” (while reviewing normal results), or “cancel order” (while reviewing list of pending results)

Selecting a row in the list displays a preview of the result so that easy cases - such as normal results - can be acted upon immediately. A color border (here orange) visually connects the selected row, the action panel and the result preview

Differentiate incomplete and complete reports in the result review screens, to accommodate interruptions and allow continued tracking of