

# 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

**Riverside Clinic**

Order **Track** Complete

Results to Review (17)

☒ All 
 ☐ New 
 ☐ Late 
 ☐ Not completed

Patient	Test	Order Date	Review by	Abnormality
Patient, Anna	MRI/ <b>P</b>	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 <b>(E)</b>	Mar, 8, 2011	10:22 AM	Mar, 15, 2011 10:22 AM
Grey, Bridget	Blood (BMP) <b>(E)</b>	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

☐ All 
 ☒ Late 
 ☐ Not completed

Patient	Test	Order Date	Result Due	Status
Morris, Monica	TSH	February, 15, 2011	9:34 PM	February, 21, 2011 1:22 AM Sample drawn and sent
Parker, Amy	MRI	Mar, 2, 2011	2:22 PM	Mar, 8, 2011 11:42 PM Image(s) interpreted and reported
Peterson, Audrey	Blood (CBC)	Mar, 3, 2011	9:34 PM	Mar, 9, 2011 10:09 AM Test ordered
Reed, Megan	Mammogram	Mar, 3, 2011	7:53 PM	Mar, 9, 2011 8:00 PM Image(s) interpreted and reported

**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 lateness 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)

Patient	Test	Order Date	Review by	Abnormality
123456789	Test 1	1/1/2020	Dr. Smith	Abnormal
123456789	Test 2	1/1/2020	Dr. Smith	Abnormal
123456789	Test 3	1/1/2020	Dr. Smith	Abnormal
123456789	Test 4	1/1/2020	Dr. Smith	Abnormal
123456789	Test 5	1/1/2020	Dr. Smith	Abnormal
123456789	Test 6	1/1/2020	Dr. Smith	Abnormal
123456789	Test 7	1/1/2020	Dr. Smith	Abnormal
123456789	Test 8	1/1/2020	Dr. Smith	Abnormal
123456789	Test 9	1/1/2020	Dr. Smith	Abnormal
123456789	Test 10	1/1/2020	Dr. Smith	Abnormal
123456789	Test 11	1/1/2020	Dr. Smith	Abnormal
123456789	Test 12	1/1/2020	Dr. Smith	Abnormal
123456789	Test 13	1/1/2020	Dr. Smith	Abnormal
123456789	Test 14	1/1/2020	Dr. Smith	Abnormal
123456789	Test 15	1/1/2020	Dr. Smith	Abnormal
123456789	Test 16	1/1/2020	Dr. Smith	Abnormal
123456789	Test 17	1/1/2020	Dr. Smith	Abnormal
123456789	Test 18	1/1/2020	Dr. Smith	Abnormal
123456789	Test 19	1/1/2020	Dr. Smith	Abnormal
123456789	Test 20	1/1/2020	Dr. Smith	Abnormal
123456789	Test 21	1/1/2020	Dr. Smith	Abnormal
123456789	Test 22	1/1/2020	Dr. Smith	Abnormal
123456789	Test 23	1/1/2020	Dr. Smith	Abnormal
123456789	Test 24	1/1/2020	Dr. Smith	Abnormal
123456789	Test 25	1/1/2020	Dr. Smith	Abnormal
123456789	Test 26	1/1/2020	Dr. Smith	Abnormal
123456789	Test 27	1/1/2020	Dr. Smith	Abnormal
123456789	Test 28	1/1/2020	Dr. Smith	Abnormal
123456789	Test 29	1/1/2020	Dr. Smith	Abnormal
123456789	Test 30	1/1/2020	Dr. Smith	Abnormal
123456789	Test 31	1/1/2020	Dr. Smith	Abnormal
123456789	Test 32	1/1/2020	Dr. Smith	Abnormal
123456789	Test 33	1/1/2020	Dr. Smith	Abnormal
123456789	Test 34	1/1/2020	Dr. Smith	Abnormal
123456789	Test 35	1/1/2020	Dr. Smith	Abnormal
123456789	Test 36	1/1/2020	Dr. Smith	Abnormal
123456789	Test 37	1/1/2020	Dr. Smith	Abnormal
123456789	Test 38	1/1/2020	Dr. Smith	Abnormal
123456789	Test 39	1/1/2020	Dr. Smith	Abnormal
123456789	Test 40	1/1/2020	Dr. Smith	Abnormal
123456789	Test 41	1/1/2020	Dr. Smith	Abnormal
123456789	Test 42	1/1/2020	Dr. Smith	Abnormal
123456789	Test 43	1/1/2020	Dr. Smith	Abnormal
123456789	Test 44	1/1/2020	Dr. Smith	Abnormal
123456789	Test 45	1/1/2020	Dr. Smith	Abnormal
123456789	Test 46	1/1/2020	Dr. Smith	Abnormal
123456789	Test 47	1/1/2020	Dr. Smith	Abnormal
123456789	Test 48	1/1/2020	Dr. Smith	Abnormal
123456789	Test 49	1/1/2020	Dr. Smith	Abnormal
123456789	Test 50	1/1/2020	Dr. Smith	Abnormal
123456789	Test 51	1/1/2020	Dr. Smith	Abnormal
123456789	Test 52	1/1/2020	Dr. Smith	Abnormal
123456789	Test 53	1/1/2020	Dr. Smith	Abnormal
123456789	Test 54	1/1/2020	Dr. Smith	Abnormal
123456789	Test 55	1/1/2020	Dr. Smith	Abnormal
123456789	Test 56	1/1/2020	Dr. Smith	Abnormal
123456789	Test 57	1/1/2020	Dr. Smith	Abnormal
123456789	Test 58	1/1/2020	Dr. Smith	Abnormal
123456789	Test 59	1/1/2020	Dr. Smith	Abnormal
123456789	Test 60	1/1/2020	Dr. Smith	Abnormal
123456789	Test 61	1/1/2020	Dr. Smith	Abnormal
123456789	Test 62	1/1/2020	Dr. Smith	Abnormal
123456789	Test 63	1/1/2020	Dr. Smith	Abnormal
123456789	Test 64	1/1/2020		

Patient Test Order Date Review by Abnormality  
 Evanas, Anna MRI / F Mar 3, 2011 1:22 AM Mar 10, 2011 1:22 AM  
 Parker, Amy  
 Reed, Megan  
 Stewart, Kim  
 Cooper, Mol  
 Howard, Amy  
 Howard, Amy  
 Phillips, Sara  
 Phillips, Sara  
 Richardson, Bennet, Clar  
 Cox

No follow up  
 Ask nurse to:  
☐ Inform patient Avas, Anna  
☐ Schedule Visit  
 Order:  
☐ Repeat test  
 Comment

1 days weeks months years  
 1 days weeks months years

Continue report later Done

NAME: Evanec, Anna  
 Study Date: 03/03/2011  
 Comparison:  
 History: MRI of TH  
 FINDINGS:  
 The bones  
 Articular s  
 The spring  
 The tibialis  
 tendons al  
 inact. The  
 The tarsal

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