

Complexity Ruler

Cognitive Complexity of the Medical Record is a Risk Factor for Major Adverse Events

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Manual Ruler General Tips

- Search by patient medical record number (MRN)
- Adjust “clinical range” to the specific 24-hour study period (__/__/__ 00:01 – 23:59)
 - Print all new, unique information accumulated during the study period.
Before collecting reports, notes, etc, confirm that the clinical date range matches the 24-hour study period.
- Areas with information
 - Documents folder
 - Medicine administration record
 - Flowsheets
 - Orders
 - Diagnostic studies
- All scanned documents do not get counted but record the number in each section

Scanning and cleaning the data

Three options

- Copy and paste
- Use scanner to convert to Microsoft Word
- Copy and paste from PowerChart (when possible)

General Data Cleaning Rules

- All patient identifiers (MRN, date of birth, etc) must be deleted. The font/general appearance of the document does not matter as long as all information/characters and digits are included
- For documents printed and scanned from electronic records, all unrelated footers must be deleted (ie, printed by J.Smith on __/__/__)
 - If you scan make sure to delete repeated column headers (headers that only appear once in the record but print multiple times)
- For scanned records, delete all random characters as well as any side bars and menus
- For electronic records, text that gets scanned as an image will not be included in the bit-count and needs to be retyped

Documents and Diagnostic Studies

This section is easy to copy/paste

- Change the date range to include only notes in a limited time frame
- Using the “perform time” at the bottom of the page, copy and paste notes performed at the time (do not use the time written on the note; it does not always reflect when the note was created only when the procedure/visit happened)
- It is useful to double check dates 2 to 3 days before and after to see if the perform dates match the time frame (unfortunately, manually we do not always get this perfect)
- If you notice something was modified at a different date/time, you can check to see if there is an addendum during the time frame—in which case include the addendum (again this is not always perfect manually)
- If a note within the time frame has an addendum added later, do not include the addendum
- Scanned documents should be counted (how many are there?) but do not get included in complexity count because there is no way to automatically count them
- Ignore everything in hierarchy corrections folder

Copy and paste the whole note into Microsoft Word

- Delete header—leave only note type and date/time of procedures
- Delete words like “Final document” in bold

Diagnostic Studies

- Again make sure date/time is set
- Same rules for headers
- Do not include text that says “note—this document includes an image”
- Make sure to record number of scanned reports
- For unusual reports (ie, path), make sure to include report type and date/time

Note about a previous version of the Complexity Ruler

- We used to delete all signatures
- We used to go by the date on the note rather than the date it was created
- We used to be able to type in handwritten information and scanned notes
- We used to delete more extraneous information at the beginning and end of notes

Medication Administration Record

This cannot be copied and pasted—either use a scanner or rewrite by hand

- Change date/time to the time period in question
- Include dates/time frames at top (include each one once)
- Include section headers: scheduled, parenteral nutrition, continuous infusions
- Include medications name and details as well as all administrations
- Include medication not done with explanation of why
- Delete medications wasted and witness information

If you use the Hewlett Packard scanner, make sure to delete all extraneous information and characters (including printed date, patient info, menus). Make sure all information is there, but do not worry about appearance.

Note about a previous version of the Complexity Ruler

- This is very similar to what we used before. We did not delete the witness and medication wasted.

Orders

Best to retype from record

- Make sure to select time of correlating admission
- Select orders tab and hit “show more orders” until it cannot be pressed anymore
- Include:
 - Section headers if any orders in the section are included
 - Include all sections except “uncategorized orders”
 - Include all orders and modifications
 - Use the date started/last update information to help determine which orders to include
 - Double click order title and click history tab to find new orders and modifications in time frame

Count:

- Section header (for those with orders)
- Name of order and details for each new order and modification
- Be careful not to include comments
- EXCLUDE: Barcodes from labs
- Make your best effort to figure out the former versions through the modification trail, if not just count order one time for each modifications

Note from a previous version of the Complexity Ruler:

- We did not know to choose “correct admit,” “show new orders,” or “check history” trail. We just included items on the screen with corresponding dates. We reinvented a lot for this section.

Flow Sheets

Set date and time to time period in question

Setting proper view

- Select button with the three dots next to “level”
- Select three dots next to “procedure”
- Double click “ALLOCFSETS”
- Double click “ALLRESLTSECT”
- Highlight “ALLSRVSECTS” (do not double click to open this section)
- Click “Ok”
- Expand cells to show all text

Highlight and copy and paste to Word

Type in all side titles with checkboxes next to them (as they do not copy and paste properly)

Delete the following: (most common are in bold)

- **Nonclinical information**
- **Point-of-care testing (nonlaboratory) –**
 - ♣ *This is information about the device (ie, “Blood glucose meter non lab POCT,” “urine chem. Non lab POCT,” “It has info about kit lot number,” where performed, etc)*
- Cast room documentation
- Emergency Department billing documentation
- Order entry details
- Obsolete vaccines
- Patient sign out
- Bed management system (BMS)
- **Forms view**
- **Medication waste**
- **Medication**

For “ICU notes” sections, delete links to documents but not one-word answers

- Count the number of “dates/times” that are only associated with data from excluded sections and delete that many from the list of dates/times on top.

Note from a previous version of the Complexity Ruler:

- Previously, we clicked specialty views and specialty views “ins and outs” and change the date and print both screens. Did not know to change view. A lot of reinvention occurred here as well.

Counting Bits

- To count bits: For each patient:
 1. Copy text from each note type separately into “Digit Count Macro” document.
 2. Ensure macros are enabled when opening digit count.
 3. Tools > Word Count. Record total characters with no spaces (CA).
 4. Edit > Select all. Tools > Macro > Macros > Run. This gives you total number of digits (DIGIT).
 5. Multiply number of digits by 3 to get bit count for all digits (3DIG).
 6. Subtract number of digits (DIGIT) from total characters (CA) to get total number of non-numeric characters (ALPHA).
 7. Add non-numeric characters (ALPHA) and bit count for numbers (3DIG) to get total number of bits for that bucket.

Code	Represents	Calculate
CA	Total number of characters	Tools > Word Count: Characters Without Spaces
DIGIT	Total number of digits	Edit > Select All. Tools>Macros>Macros>Run
3DIG	Total BITS for all digits	DIGIT * 3
ALPHA	Total number of non-numeric characters	CA - DIGIT
TOTAL	Total bits	Alpha + 3DIG