

The suggestions below include examples of microbiology messages sent that follow HL7 Message Standards. Using message formatting that follows these standards ensures that patient test results are displayed in a format that is optimal.

According to HL7 standards, the susceptibility battery needs to contain a link back to a particular organism in the culture battery. The susceptibility panel is always a child order to a culture battery. OBR-26-parent result of susceptibility OBR should contain the OBX-3-observation identifier (code only) and the OBX-4-observation sub-ID of the OBX in the culture battery which contains the organism name. The following suggestions are ways to accomplish the above.

The messages in these examples are not actual messages from your facility, but rather what your messages should look like after following HL7 standards.

Displaying Micro results in Careweb / INPC has been historically problematic. The following suggestions have been successfully implemented in the past and may help you avoid similar problems.

1. It is highly desirable for the OBR-1 field to have a numerical value. If there is more than one OBR in the message, OBR-1 fields must be sequential values in order to distinguish separate test results.
2. Coded entries including OBR-4 and OBX-3 need to have the coding system identified.
3. When the culture source is inserted in OBR-15 of both the culture OBR and the susceptibility OBR in the format (&Source&) it will display with the appropriate results in CareWeb / INPC.

```
OBR|1|104309^MIC|104309000.0100|CUL WND^WOUND CULTURE AND GRAM
STAIN^L|||200611281614|||200611281700|&ANK&|ANSIB^ANSARI^IBAD^U^^MD|||P|||MB||^R||
OBR|2|104309160.00002.1|GPC21^GRAM POS COMBO
21^L|||200611281614|||200611281700|&ANK&|ANSIB^ANSARI^IBAD^U^^MD|||P|||MB|P|CULWND^2.1|^R||104309^MIC
```

4. When the final identification result of the culture for each organism has its own OBX with a CE data type instead of an ST data type, the organism name can be correctly displayed with its corresponding susceptibility results.

```
OBX|7|CE|CULWND^WOUND CULTURE^L|2.1|MRSA^STAPHYLOCOCCUS AUREUS-MRSA|||P|||200611281614|^
```

5. When an organism is identified in the culture, the sub-id should display in OBX-4 of the CE OBX that identifies the organism. If there are multiple organisms, each subsequent sub-id should increment by 1. This ensures that multiple organisms and susceptibilities are correctly paired.

```
OBX|7|CE|CULWND^WOUND CULTURE^L|2.1|MRSA^STAPHYLOCOCCUS AUREUS-MRSA|||P|||200611281614|^
OBX|8|CE|CULWND^WOUND CULTURE^L|2.2|ENTCLO^ENTEROBACTER CLOACAE|||P|||200611281614|^
```

6. In the susceptibility OBR, field 26 should contain the code for the culture, a carrot and the sub-id that corresponds to the organism being evaluated. This is how the organism is paired with its corresponding susceptibility.

```
OBR|2||104309160.00002.1|GPC21^GRAM POS COMBO  
21^L||200611281614|||||200611281700|&ANK&|ANSIB^ANSARI^IBAD^U^^^MD|||||MB|P|CULWND^2.1|^^^^^R||104309^MIC
```

## Sample Message

OBR|1|104309^MIC|104309000.0100|CUL WND^WOUND CULTURE AND GRAM STAIN^L|||200611281614|||200611281700|&ANK&|ANSIB^ANSARI^IBAD^U^^MD|||MB||^R||

OBX|1|ST|GS^GRAM STAIN^L|1|GRAM STAIN RESULT|||F|||200611281614|^

OBX|2|ST|GS^GRAM STAIN^L|1|FEW WHITE BLOOD CELLS||N||F|||200611281614|^

OBX|3|ST|GS^GRAM STAIN^L|1|NO ORGANISMS SEEN||N||F|||200611281614|^

OBX|4|ST|CULWND^WOUND CULTURE^L|2|MODERATE GROWTH OF STAPHYLOCOCCUS AUREUS, MRSA ISOLATED.||||P|||200611281614|^

OBX|5|ST|CULWND^WOUND CULTURE^L|2||||P|||200611281614|^

OBX|6|ST|CULWND^WOUND CULTURE^L|2|LIGHT GROWTH OF ENTEROBACTER CLOACAE ISOLATED.||||P|||200611281614|^

OBX|7|CE|CULWND^WOUND CULTURE^L|2.1|MRSA^STAPHYLOCOCCUS AUREUS-MRSA||||P|||200611281614|^

OBX|8|CE|CULWND^WOUND CULTURE^L|2.2|ENTCLO^ENTEROBACTER CLOACAE||||P|||200611281614|^

OBR|2|104309160.00002.1|GPC21^GRAM POS COMBO 21^L|||200611281614|||200611281700|&ANK&|ANSIB^ANSARI^IBAD^U^^MD|||MB|P|CULWND^2.1|^R||104309^MIC

OBX|1|ST|T/S^TRIMETHOPRIM/SULFAMETHOXAZOLE^L|<=2/38||S||P|||200611281614|^

OBX|2|ST|AUG^AMOXACILIN/CLAVULANATE^L|>4/2||R||P|||200611281614|^

OBX|3|ST|AM^AMPICILLIN^L|>8||BLAC||P|||200611281614|^

OBX|4|ST|A/S^AMPICILLIN/SULBACTAM^L|<=8/4||R||P|||200611281614|^

OBX|5|ST|CFZ^CEFAZOLIN^L|<=2||R||P|||200611281614|^

OBX|6|ST|CAX^CEFTRIAXONE^L|<=4||R||P|||200611281614|^

OBX|7|ST|CP^CIPROFLOXACIN^L|>2||R||P|||200611281614|^

OBX|8|ST|GAT^GATIFLOXACIN^L|4||I||P|||200611281614|^

OBX|9|ST|LVX^LEVOPLOXACIN^L|>4||R||P|||200611281614|^

OBX|10|ST|CD^CLINDAMYCIN^L|<=0.25||S||P|||200611281614|^

OBX|11|ST|E^ERYTHROMYCIN^L|>4||R||P|||200611281614|^

OBX|12|ST|GM^GENTAMICIN^L|<=1||S||P|||200611281614|^

OBX|13|ST|GMS^GENTAMICIN SYNERGY SCREEN^L||||N/R||P|||200611281614|^

OBX|14|ST|FD^NITROFURANTOIN^L|<=32||S||P|||200611281614|^

OBX|15|ST|NXN^NORFLOXACIN^L|>8||R||P|||200611281614|^

OBX|16|ST|OX^OXACILLIN^L|>2||R||P|||200611281614|^

OBX|17|ST|P^PENICILLIN^L|>8||BLAC||P|||200611281614|^

OBX|18|ST|LZD^LINEZOLID^L|2||S||P|||200611281614|^

OBX|19|ST|TE^TETRACYCLINE^L|<=4||S||P|||200611281614|^

OBX|20|ST|VA^VANCOMYCIN^L|<=2||S||P|||200611281614|^

OBX|21|ST|SYN^SYNERCID^L|<=0.25||S||P|||200611281614|^

OBX|22|ST|RIFA^RIFAMPIN^L|<=1||S||P|||200611281614|^

OBX|23|ST|STS^STREPTOMYCIN 1000^L||||N/R||P|||200611281614|^



OBR|3||104309160.00002.2|NUC35^GRAM NEG COMBO  
35^L|||200611281614|||200611281700|&ANK&|ANSIB^ANSARI^IBAD^U^^MD|||MB|P|CULWND^2.2|^R||104309^MIC

OBX|1|ST|T/S^TRIMETHOPRIM/SULFAMETHOXAZOLE^L|>2/38||R||P||200611281614|^

OBX|2|ST|AUG^AMOXACILLIN/CLAVULANATE^L|>16/8||R||P||200611281614|^

OBX|3|ST|AM^AMPICILLIN^L|>16||R||P||200611281614|^

OBX|4|ST|A/S^AMPICILLIN/SULBACTAM^L|<=8/4||S||P||200611281614|^

OBX|5|ST|CFZ^CEFAZOLIN^L|>16||R||P||200611281614|^

OBX|6|ST|CFT^CEFOTAXIME^L|<=4||S||P||200611281614|^

OBX|7|ST|CAZ^CEFTAZIDIME^L|4||S||P||200611281614|^

OBX|8|ST|CAX^CEFTRIAXONE^L|<=4||S||P||200611281614|^

OBX|9|ST|CPE^CEFEPIE^L|<=8||S||P||200611281614|^

OBX|10|ST|CRM^CEFUROXIME^L|8||S||P||200611281614|^

OBX|11|ST|CF^CEPHALOTHIN^L|>16||R||P||200611281614|^

OBX|12|ST|CP^CIPROFLOXACIN^L|>2||R||P||200611281614|^

OBX|13|ST|LVX^LEVOFLOXACIN^L|4||I||P||200611281614|^

OBX|14|ST|ESA^ESBL SCREEN A^L|<=4||S||P||200611281614|^

OBX|15|ST|ESB^ESBL SCREEN B^L|>1||R||P||200611281614|^

OBX|16|ST|GM^GENTAMICIN^L|<=1||S||P||200611281614|^

OBX|17|ST|IMP^IMIPENEM^L|<=4||S||P||200611281614|^

OBX|18|ST|FD^NITROFURANTOIN^L|>64||R||P||200611281614|^

OBX|19|ST|NXN^NORFLOXACIN^L|>8||R||P||200611281614|^

OBX|20|ST|PI^PIPERACILLIN^L|<=16||S||P||200611281614|^

OBX|21|ST|TE^TETRACYCLINE^L|>8||R||P||200611281614|^

OBX|22|ST|TIM^TICARCILLIN/K CLAV^ATE^L|<=16||S||P||200611281614|^

OBX|23|ST|TO^TOBRAMYCIN^L|<=2||S||P||200611281614|^

OBX|24|ST|AK^AMIKACIN^L|<=8||S||P||200611281614|^

OBX|25|ST|P/T^PIPERACILLIN/TAZOBACTAM^L|<=8||S||P||200611281614|^