Welcome to the XDRO registry introductory webinar.

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Welcome to the XDRO registry introductory webinar.
Today, we will discuss the following objectives: (1) CRE overview and rationale for XDRO registry, (2) how to register, (3) website orientation, (4) future vision, (5) frequently asked questions, and (6) question and answer forum.
CRE have been called “nightmare bacteria”. CRE, or carbapenem-resistant Enterobacteriaceae (CRE) are extensively drug resistant organisms (XDROs) with few antibiotic options, high mortality rate.
Enterobacteriaceae comprise a family of bacteria that many of you are familiar with: for example, *Escherichia coli*, *Klebsiella* species, *Enterobacter* species, *Citrobacter* species. Enterobacteriaceae commonly cause healthcare and community-associated infections, such as urinary tract infections.
Here is the CRE situation in Illinois. From the REALM project, which is a series of point prevalence surveys in Chicago, we estimate that among short stay acute care hospital adult ICUs, approximately 3% of patients are colonized with CRE. Among long term acute care hospitals, or LTACHs, approximately 30% of patients are colonized with CRE. Thus, CRE are relatively common in some Chicago healthcare facilities, particularly LTACHs, and we are concerned that CRE has the potential to further spread. Also, relatively few prevalence data exist for hospital non-ICU wards, nursing homes, and regions outside of Chicago.
CRE spreads from patient to patient. A key point to recognize is that such spread is amplified when sick patients with CRE move within the healthcare system: for example, patients frequently move from long term acute care hospitals to skilled nursing facilities to short stay acute care hospitals. Thus, control efforts have to exist at all types of facilities across a region.
The CDC has published a “CRE toolkit” that describes important steps that individual facilities as well as regions can take to control CRE spread. The central strategy is called “Detect and Protect”, which means that we need to identify CRE-carrying patients and maintain them in contact precautions.
The CDC CRE toolkit also emphasizes improving inter-facility communication of patient CRE status. The importance of inter-facility communication is illustrated with the Israeli experience in controlling CRE. The Israeli CRE control strategy combined “Detect and protect” with optimizing inter-facility communication between healthcare facilities across the country. This strategy was effective in controlling CRE in Israel.
The XDRO registry addresses 2 critical gaps in our regional CRE control strategy. The first gap is the need for improved CRE detection across the entire state, including non-ICU patients and skilled nursing facilities. The XDRO registry creates a CRE surveillance rule and stores patient-specific CRE information. The second gap is the need for improved inter-facility communication. The XDRO registry provides efficient CRE information exchange.
To illustrate in this figure, the XDRO registry has 2 primary functions. First, when a facility identifies a CRE-carrying patient, that patient is reported to the XDRO registry. Second, when a patient is admitted with an unknown CRE status, the healthcare facility can query the XDRO registry to determine whether or not isolation precautions are needed.
The XDRO registry is intended for the following participants: all Illinois hospitals (including LTACHs), all Illinois nursing homes, and all Illinois laboratories.
Here is the CRE definition, for the purpose of reporting to the XDRO registry. CRE are Enterobacteriaceae with one of the following test results: (1) a molecular test, such as PCR, specific for carbapenemase, or (2) a phenotypic test, such as Modified Hodge Test, specific for carbapenemase production, or (3) for *E. coli* and *Klebsiella* species only, any isolate that is non-susceptible to one of the carbapenems (doripenem, meropenem, or imipenem) AND resistant to all third generation cephalosporins tested (ceftriaxone, cefotaxime, and ceftazidime). (Note: facilities should contact their microbiology laboratory to find out what kind of CRE-detecting capability is available. We anticipate that at this point in time, most facilities will be primarily using criterion 3).

Facilities should report the 1st CRE event per patient per healthcare facility encounter. (Note: if a CRE-positive patient is reported to the registry, discharged and then readmitted at a later date with a new CRE-positive culture, that new CRE culture should be reported to the XDRO registry because it is the 1st CRE event of the new patient encounter.)
Here is a reporting example. A patient is admitted to your hospital. On hospital day 2, a urine culture grows *Klebsiella pneumoniae*, resistant to all cephalosporins and imipenem. (On day 3, the same organism grows from blood).

- Action: The patient has CRE. Report the first isolate (urine culture) to the registry.
How you register for the XDRO registry depends on whether or not you are already an INEDSS user. If you are already an INEDSS user, you are automatically granted access to the XDRO registry (use INEDSS username/password to log in). If you are not yet an INEDSS user, go to the IDPH log-in page (https://wpur.dph.illinois.gov/DPUR/) and sign up for INEDSS, which will give you access to the XDRO registry.

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Now we will orient you to the website.
This is the home page for information about the registry, www.xdro.org. Information and updates will be posted on this website. The page also includes links to take you to the IDPH portal so that you can login (existing users) or register as a new user for the registry. For security reasons, you must go through the IDPH portal for authorization before you can access the registry.
The IDPH portal home page is displayed here. As with the home page at www.xdro.org, from this page users have the option of logging into the site (existing users) or registering (new users).
For new users, the registration process begins with this form. The I-NEDSS and XDRO registry systems are combined so that users who sign up for I-NEDSS also will be signed up to access the XDRO registry. Existing I-NEDSS users will automatically be given access to the XDRO registry.
After registering for an account this page will allow you to sign in and access the applications for which you have privileges (e.g., I-NEDSS and the XDRO registry).
After logging in to the Web Portal, the applications are available for the user to select.
After selecting the XDRO registry application, you will arrive at this page. You may select one of these four options. The Search Registry function allows the user to search patient admissions to their facility for inclusion in the registry; the Facility Submission History will show all entries for your facility, regardless of which user entered the information; the Facility Alert History will only be active for facilities that automate submission of their daily admissions to the XDRO registry, the Alert History will display a historical record of all prior alerts. In the initial stages of the XDRO registry, we will not have automated submission of admissions.
After selecting “Submit Report”, the user will see this form. The red asterisk denotes fields that are required for submission. Partially filled forms can be saved and completed later “Save Draft”. Once submitted, the report can be updated to change information or deleted; however, the deleted records and reason for deletion can still be viewed under an individual patient’s historical record—available under “Search Registry”.

This slide shows the drop down menu for the user to select the organism name (optional).
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After submitting the prior form, a concise summary is displayed for the user to view, edit, delete, or print.
The subsequent slides will display the “Search Registry” operation.
For facilities that are interested in finding out whether patients admitted to their facility previously have been colonized by a CRE, there is the option to search the registry. The last name and date of birth are required and must be an exact match. The first name can also be entered to narrow down the search, but it is not required.
Above is an example in which the first name was left blank and there was an exact match on the last name and date of birth. There is a disclaimer that there is the possibility that a last name and date of birth match may not represent a true match and that the first name will provide additional clarification. Also, the patient can be evaluated to confirm hospitalization, or residency, in the reporting facility at the time of prior culture acquisition. Alternatively, the reporting facility can be contacted to evaluate supporting information, such as patient address.
For matches from the “Search Patient” function, a historical record from the XDRO registry can be displayed by selecting the patient’s name.
The subsequent slides will show the “Facility Submission History” operation.
Initially, the user will view a sortable list of all patients who have been entered into the system for all users at their facility. The list is searchable, can be sorted by the headers, and individual patients can be selected to view the patient’s entire historical record. In this example, the status often is “deleted” because the delete options were being tested during development of the registry; deleted patients should be uncommon.
Selecting a patient from the “Facility Submission History” provides the user the opportunity to edit, print, or delete the patient record.
If the “Delete” option is selected, the user needs to enter the reason that they intend to delete the record. Decolonization or infection resolution are not valid reasons to delete a record. We expect that either “Data entry error” or “Laboratory testing error” will be the most common reasons for deletion.
“Facility Alert History” will be meaningful for those facilities that are able to automate submission of their daily admission information. This is a planned future state of the system.
For users who are signed up through the IDPH portal to view multiple facilities, there is the option to select a different facility.
The XDRO registry is poised to add new functionality as the system matures and is developed.
The value of the XDRO registry will be enhanced after facilities and the registry develop the capacity to exchange patient admission data. When this occurs, the registry will be able to notify personnel at the admitting facility when they have admitted a patient who is in the registry. This will allow for prompt initiation of contact isolation precautions. Such a system does not obviate facility-to-facility communication, but historically, such communication often is lacking.
An additional enhancement of the XDRO registry will be the inclusion of automated data streams that can populate the registry with patients for whom a culture has detected a CRE. For facilities that have automated Electronic Laboratory Reporting (ELR), this will improve the timeliness and possibly the completeness of reporting.
Further, synchronization with I-NEDSS will allow ELR feeds that go directly to I-NEDSS to also populate the CRE registry.
Now we will go through frequently asked questions.
Q: How much work is needed to participate in the registry?

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Q: Does the registry take the place of standard facility-to-facility communication at the time of transfer?

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Question: Does the registry take the place of standard facility-to-facility communication at the time of patient transfer?

Answer: No. Standard infection control communication should still be followed and documented at the time of transfer.
Q: My hospital sends lab data electronically to INEDSS, can that suffice for the registry?

• Currently, all reporting to XDRO registry is manual entry. This is because new infrastructure (separate from INEDSS) was needed to allow for both reporting and querying. We hope to develop automated reporting in the future.

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Question: How can I incorporate CRE querying into my workflow?

Answer: Currently querying the registry is manual. Practically speaking what that means is that for facilities with few admissions per day, such as nursing homes and LTACHs, querying 1-10 admissions/day is likely feasible. For facilities with many admissions per day, which represents most acute care hospitals, most will not routinely perform manual query. Consider querying for high risk patients (such as ICU admissions or patients transferred from outside facilities). In the future, automated querying will be the ideal method for high-volume hospitals.
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Answer: Yes. Although not mandatory, you may choose to report CRE-positive patients from any time period, including prior to the start of the reporting rule (November 1, 2013).
Question: Is the registry HIPAA compliant?

Answer: Yes, the XDRO registry is HIPAA compliant, based on the public health exemption listed under HIPAA.
Now, we will begin the question and answer forum. [Please note that questions generated from the webinar sessions have been incorporated into the “Frequently asked questions” section of the XDRO.org website]