

# Use Case: FutureFlowRx

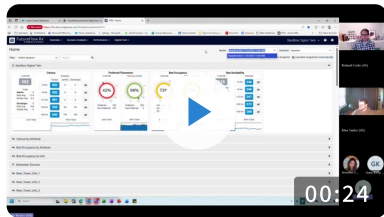
The FutureFlow workflow, used as an example for a hospital use case, involves hourly data snapshots that feed predictive simulations to forecast future states and identify potential issues. The system allows users to view rolled-up data at a high level and drill down into specifics, with a scenario manager for running different analyses.

- **Hourly Data Snapshots:** The workflow begins with an hourly snapshot of data, such as a 'patient whiteboard' in a hospital, which captures the current state of all entities.
- **Predictive Simulation:** The snapshot data is used to run multiple simulations that forecast future states, such as patient census, up to 36 hours in advance.
- **Data Roll-up and Drill-down:** Data is rolled up from the lowest level (e.g., a patient in a bed) to a high-level system view, with the ability to filter and drill down into specific units or groups.
- **Configurable Groupings:** The system allows for flexible, multi-relational groupings of objects (like hospital units) through attribute tagging for customized dashboard views and analysis.
- **Scenario Management:** A scenario manager allows users to run different analyses, such as strategic scenarios over long periods or operational what-if scenarios for upcoming shifts.

## Hourly Data Snapshots

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The workflow begins with an hourly snapshot of data, such as a 'patient whiteboard' in a hospital, which captures the current state of all entities.

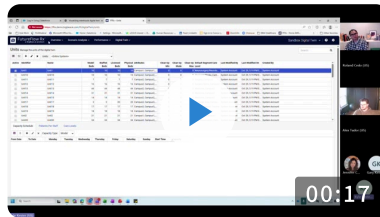


**Kyle K.**

So I'll give you I'll give you a quick few minutes here. So basically the every hour we get a snapshot. So when this comes in, the first thing that happens is we have, now I'm going to get lost here. We call it the patient whiteboard. This is actually, there's 582 patients. Here's everybody where they are, you know, in the hospital, all 582 patients, what their units are.

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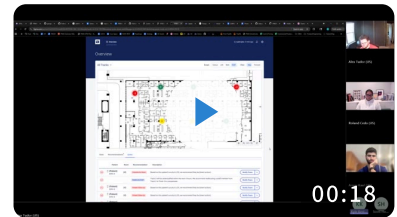
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**Kyle K.**

So we can assign those attributes. So the 582 are shown in the entire system. This is the snapshot. So that noon or midnight snapshot shows who's there, some other key descriptive statistics. And then this is where the simulation picks up.

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**Kyle K.**

They probably could just leverage a lot of our capability to do kind of the descriptive visualization of, you know, where are they right now before we figure out how to help them. So, you know, I was explaining the future flow, the dials and those kind of things and just seeing where you are right now is going to be just as important for them to see.

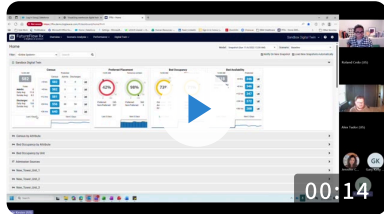
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## Predictive Simulation

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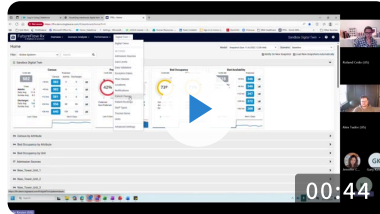
The snapshot data is used to run multiple simulations that forecast future states, such as patient census, up to 36 hours in advance.



### Kyle K.

Like this has a lot of that roll up capability and there's a lot of little hidden things around these cards. Like the left side is meant to be the historical kind of up to the now information, then the right side, the symmetry here is that this is all the predictive stuff.

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### Kyle K.

And it's all configured through the digital twins. So the units allow us to say, you know, unit 1 has attributes assigned to campus, one campus, one ICU, campus one Nero. So we can assign those attributes. So the 582 are shown in the entire system. This is the snapshot. So that noon or midnight snapshot shows who's there, some other key descriptive statistics. And then this is where the simulation picks up. We run not enough here. There's probably, I don't know how many 20 simulations we run into the future. So we could say 2436 hours from now. Here's the likely census histogram. So we we surface that median here.

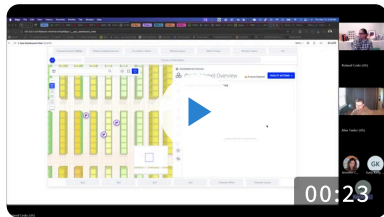
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## Data Roll-up and Drill-down

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Data is rolled up from the lowest level (e.g., a patient in a bed) to a high-level system view, with the ability to filter and drill down into specific units or groups.

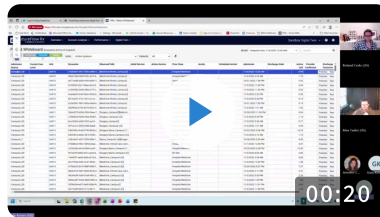


### Gary K.

Like if we have three hospitals, we have like the system view where that's where we surface all that, but we can actually tag attributes to each individual unit and at the unit level it would roll up to whatever. So all of the ICU units or all of the hospital 1, all of like everything is kind of built into the interface to kind of roll up to that, that dashboard.

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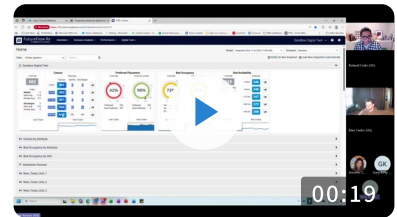


### Kyle K.

Here's everybody where they are, you know, in the hospital, all 582 patients, what their units are. So this is at the lowest level. A person's in a bed, bed's in a unit, and then we know everything about them, where they came in, what time, how long they've been there, you know, and some other key statistics that all gets rolled up, you know, if you drill down here.

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### Kyle K.

So we we surface that median here. But you have the ability to drill down by saying like again, if I wanted to look for you at 1:00, you know, I could filter down. I guess I'll do it that way. Probably it's spelled right. But you can, you can filter down either by the drop down here or I could go into each one of these.

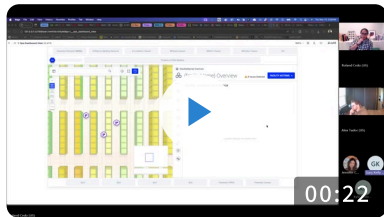
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## Configurable Groupings

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The system allows for flexible, multi-relational groupings of objects (like hospital units) through attribute tagging for customized dashboard views and analysis.

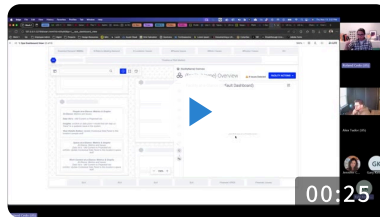


### Gary K.

Really think of it as a tree. It's more just a grouping of of objects. So future flow does something like this post processing. It's not in the model, but like in the in the interface. Like if we have three hospitals, we have like the system view where that's where we surface all that, but we can actually tag attributes to each individual unit and at the unit level it would roll up to whatever.

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### Kyle K.

I think I guess just just to mention one more thing. So it's you could have like unit 1 might be able to be seen by itself, but it could be part of ICU, it could be part of hospital one. Like there's multiple views on a dashboard that would contain that. So there's one to many that you can.

### Roland Cedo

One to many relations. Got it, got it. OK, thanks. That's I think that's the piece that I was missing. It's not hierarchical, it's multi relation

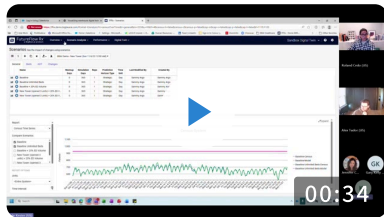
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## Scenario Management

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A scenario manager allows users to run different analyses, such as strategic scenarios over long periods or operational what-if scenarios for upcoming shifts.



### Kyle K.

Yeah, I, I see the other key thing, you know, aside from like configuration, you know, you have the at a glance and then you have the scenario manager. So this baseline scenario has those 582 patients. That's where this is going to start. And this is where you can run beyond that. If we think of warehousing being like, you know, if this is current shift, next shift kind of thing, there's that view, but then there's also the ability to come in here and let's run like the next 365 days and a strategic scenario and, you know, have all these different types of reports.

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00:20

### Alex T.

One thing that I don't know if we've talked about too much is just in future flow there is the the concept of scenario analysis, where this is not necessarily the operations manager who's who's creating these, but this is kind of that in between, between the operations manager and the results of this ultimately should go to the operations manager.

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