

Title: HFA 23: NUDGE-FLU: Increasing Influenza Vaccination in HF Patients

Participants: Dr Niklas Dyrby Johansen

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Dr Niklas Dyrby Johansen

"My name is Niklas Dyrby Johansen and I'm a medical doctor and currently a PhD student from Copenhagen, Denmark, and an aspiring cardiologist and I'm very interested in heart failure, in particular.

What is the importance of the NUDGE-FLU Trial, in the context of heart failure prevention?

Influenza vaccination is widely recommended for all kinds of chronic diseases, including cardiovascular disease and heart failure. We know from prior registry-based research that influenza vaccination rates are suboptimal across many cardiovascular diseases, also including heart failure. And the aim of the NUDGE-FLU trial was to identify which strategies to use to increase influenza vaccination rates. NUDGE-FLU included participants aged 65 years and above, without any other inclusion criteria. But that allowed us to look at many different subgroups.

Tell us more about the study design and cohort of patients with CVD in NUDGE-FLU?

In the trial, the inclusion criterion was just that you had to be above 65 years of age. That group is eligible for free influenza vaccination in Denmark. So, what we did was we included all eligible patients, that was 965,000 approximately in Denmark during the current influenza season. And then we randomized them so that half were assigned to a usual care group, and the other half was then randomly assigned to one of nine different nudging letters where we wanted to test which nudges, how should you phrase the information regarding influenza vaccination to get the most people vaccinated in

those arms. And then the primary endpoint was just receiving an influenza vaccination. And we assessed that on January 1 this year.

What is the data presented at HFA 23?

Here we looked at the heart failure subgroup of that trial. Like I said, we had 965,000 participants, so a substantial proportion had heart failure. We had 33,000 with heart failure in the trial. We looked at the effects of the letters that were successful in the overall trial. That was a letter where we highlighted potential cardiovascular benefits of vaccination. We wrote that vaccination may also reduce your risk of getting a heart attack or getting heart failure, for example. And the other successful letter was just a letter, standard letter that we sent at baseline and then repeated it at day 14. So, we tested those letters and tested whether they were consistently effective in the heart failure subgroup. And they were. What we also looked at was how was the vaccination rate in the heart failure subgroup compared with other subgroups. And, when we look at the overall heart failure subgroup in Denmark, not just those enrolled in NUDGE-FLU, which only enrolled participants aged 65 years and above, how were vaccination rates across age strata and across sexes? And what we found was that in those under 65 years, those who were not enrolled in NUDGEFLU, their vaccination rate was approximately 45%. And that's way lower than we would like, would like it to be above 65 years, then it's much better, it's over 80%. And in the NUDGE-FLU heart failure subgroup, it was 83%. What we saw in the heart failure subgroup was that those who did not receive that much medical therapy for their heart failure were also those who were less likely to obtain influenza vaccination. So that just highlights a big implementation gap in those patients.

What is the clinical significance of this data, and how can this be implemented into day-to-day practice?

So, we believe that the phrasings that we studied and informing citizens on potential cardiovascular benefits of vaccination might be a good strategy to use for clinicians. And it can also always be argued who should be responsible for getting a patient flu vaccinated because that's something that cardiologists may not think that that's their area and other specialties may not think that either. Maybe they think it's the general

practitioners who do it. But maybe if we make more of a team effort and everyone urges the patients to get then we might achieve more higher vaccination rates. Also, the implications are that we can see that it's very underutilized in younger heart failure patients. So maybe a bit more emphasis on that age group could be beneficial.

What are the next steps?

What we identified in this subgroup and also in other subgroups are that the younger patients with comorbidities are not very likely to be flu vaccinated actually in Denmark at least, and that's also true in diabetes and in people with ischemic heart disease and so on. So, an obvious next step would be to try to identify strategies to get those vaccinated. So that's something we're looking into conducting in the near future.”