---

title: "Phase 2"

output: html\_document

---

```{r import dataset, echo=FALSE}

cohort <- dbGetQuery(sql,"select \* from SAILW1224V.TS\_ADMISSIONS")

patients <- dbGetQuery(sql, "select \* from SAILW1224V.TS\_PHASE2\_ADMIS\_SCORING")

nulls <- dbGetQuery(sql, "select \* from SAILW1224V.TS\_PHASE2\_ICD10")

```

```{r correct columns and create new columns, echo = F}

cohort$SEX[cohort$SEX == 1] <- "Male"

cohort$SEX[cohort$SEX == 2] <- "Female"

cohort$SEX[is.na(cohort$SEX)] <- "Unknown"

cohort <- cohort %>% mutate(Age\_Group = case\_when(AGE <= 29 ~ '<30',

between(AGE, 30, 49) ~ '30-49',

between(AGE, 50, 69) ~ '50-69',

AGE >= 70 ~ '70 or older'))

cohort <- cohort %>% subset(!is.na(VARIABLE\_LEVEL))

cohort$WIMD\_2014\_QUINTILE[cohort$START\_DATE > '2020-03-01'] <- NA

patients$SEX[patients$SEX == 1] <- "Male"

patients$SEX[patients$SEX == 2] <- "Female"

patients$SEX[is.na(patients$SEX)] <- "Unknown"

patients <- patients %>% mutate(Age\_Group = case\_when(AGE <= 29 ~ '<30',

between(AGE, 30, 49) ~ '30-49',

between(AGE, 50, 69) ~ '50-69',

AGE >= 70 ~ '70 or older'))

patients$WIMD\_2014\_QUINTILE[patients$START\_DATE > '2020-03-01'] <- NA

nulls$SEX[nulls$SEX == 1] <- "Male"

nulls$SEX[nulls$SEX == 2] <- "Female"

nulls$SEX[is.na(nulls$SEX)] <- "Unknown"

nulls <- nulls %>% mutate(Age\_Group = case\_when(AGE <= 29 ~ '<30',

between(AGE, 30, 49) ~ '30-49',

between(AGE, 50, 69) ~ '50-69',

AGE >= 70 ~ '70 or older'))

nulls$WIMD\_2014\_QUINTILE[nulls$START\_DATE > '2020-03-01'] <- NA

```

```{r overall counts, echo = F}

condition\_admis <- cohort %>% group\_by(VARIABLE\_LEVEL) %>% summarise(Total = n())

sex\_condition\_admis <- cohort %>% group\_by(SEX, VARIABLE\_LEVEL) %>% summarise(Total = n())

age\_condition\_admis <- cohort %>% group\_by(Age\_Group, VARIABLE\_LEVEL) %>% summarise(Total = n())

deprivation\_condition\_admis <- cohort %>% group\_by(WIMD\_2014\_QUINTILE, VARIABLE\_LEVEL) %>% summarise(Total = n())

shield\_condition\_admis <- pivot\_longer(cohort, cols = c("TRANSPLANT", "CANCER", "RESPIRATORY", "ORGAN\_DISEASE", "RARE\_DISEASES", "IMMUNOSUPPRESSION\_THERAPY",

"PREGNANCY", "RENAL\_DIALYSIS", "OTHER", "GP\_REFERRED", "NOT\_KNOWN"),

names\_to = "Shield\_Reason") %>% subset(value > 0) %>% group\_by(Shield\_Reason, VARIABLE\_LEVEL) %>% summarise(Total = n())

```

```{r patient counts, echo = F}

patient\_long\_condition <- patients[, c(1, 17:46)] %>% pivot\_longer(cols = c("RF", "CHF", "CARIT", "VALV", "PCD", "PVD", "HYPUNC", "HYPC", "PARA", "OND", "CPD", "DIABUNC",

"DIABC", "HYPOTHY", "LD", "PUD", "LYMPH", "METACANC", "SOLIDTUM", "RHEUMD", "COAG", "OBES", "WLOSS",

"FED", "BLANE", "DANE", "ALCOHOL", "DRUG", "PSYCHO", "DEPRE"),

names\_to = "VARIABLE\_LEVEL") %>% subset(value > 0) %>% group\_by(VARIABLE\_LEVEL) %>% summarise(Total = n())

patient\_long\_cond\_agg <- patients %>% group\_by(NUM\_CAT) %>% summarise(Total = n())

patient\_long\_cond\_vw <- patients %>% group\_by(VW\_CAT) %>% summarise(Total = n())

patient\_long\_condition\_sex <- patients[, c(1, 3, 17:46)] %>% pivot\_longer(cols = c("RF", "CHF", "CARIT", "VALV", "PCD", "PVD", "HYPUNC", "HYPC", "PARA", "OND", "CPD", "DIABUNC",

"DIABC", "HYPOTHY", "LD", "PUD", "LYMPH", "METACANC", "SOLIDTUM", "RHEUMD", "COAG", "OBES", "WLOSS",

"FED", "BLANE", "DANE", "ALCOHOL", "DRUG", "PSYCHO", "DEPRE"),

names\_to = "VARIABLE\_LEVEL") %>% subset(value > 0) %>% group\_by(SEX, VARIABLE\_LEVEL) %>% summarise(Total = n())

patient\_long\_cond\_agg\_sex <- patients %>% group\_by(SEX, NUM\_CAT) %>% summarise(Total = n())

patient\_long\_cond\_vw\_sex <- patients %>% group\_by(SEX, VW\_CAT) %>% summarise(Total = n())

patient\_long\_condition\_age <- patients[, c(1, 17:46, 51)] %>% pivot\_longer(cols = c("RF", "CHF", "CARIT", "VALV", "PCD", "PVD", "HYPUNC", "HYPC", "PARA", "OND", "CPD", "DIABUNC",

"DIABC", "HYPOTHY", "LD", "PUD", "LYMPH", "METACANC", "SOLIDTUM", "RHEUMD", "COAG", "OBES", "WLOSS",

"FED", "BLANE", "DANE", "ALCOHOL", "DRUG", "PSYCHO", "DEPRE"),

names\_to = "VARIABLE\_LEVEL") %>% subset(value > 0) %>% group\_by(Age\_Group, VARIABLE\_LEVEL) %>% summarise(Total = n())

patient\_long\_cond\_agg\_age <- patients %>% group\_by(Age\_Group, NUM\_CAT) %>% summarise(Total = n())

patient\_long\_cond\_vw\_age <- patients %>% group\_by(Age\_Group, VW\_CAT) %>% summarise(Total = n())

patient\_long\_condition\_dep <- patients[, c(1, 5, 17:46)] %>% pivot\_longer(cols = c("RF", "CHF", "CARIT", "VALV", "PCD", "PVD", "HYPUNC", "HYPC", "PARA", "OND", "CPD", "DIABUNC",

"DIABC", "HYPOTHY", "LD", "PUD", "LYMPH", "METACANC", "SOLIDTUM", "RHEUMD", "COAG", "OBES", "WLOSS",

"FED", "BLANE", "DANE", "ALCOHOL", "DRUG", "PSYCHO", "DEPRE"),

names\_to = "VARIABLE\_LEVEL") %>% subset(value > 0) %>% group\_by(WIMD\_2014\_QUINTILE, VARIABLE\_LEVEL) %>% summarise(Total = n())

patient\_long\_cond\_agg\_dep <- patients %>% group\_by(WIMD\_2014\_QUINTILE, NUM\_CAT) %>% summarise(Total = n())

patient\_long\_cond\_vw\_dep <- patients %>% group\_by(WIMD\_2014\_QUINTILE, VW\_CAT) %>% summarise(Total = n())

patient\_reason\_long <- patients[, c(1, 6:46)] %>% pivot\_longer(cols = c("RF", "CHF", "CARIT", "VALV", "PCD", "PVD", "HYPUNC", "HYPC", "PARA", "OND", "CPD", "DIABUNC",

"DIABC", "HYPOTHY", "LD", "PUD", "LYMPH", "METACANC", "SOLIDTUM", "RHEUMD", "COAG", "OBES", "WLOSS",

"FED", "BLANE", "DANE", "ALCOHOL", "DRUG", "PSYCHO", "DEPRE"),

names\_to = "VARIABLE\_LEVEL") %>% subset(value > 0)

patient\_reason\_long <- patient\_reason\_long[, -c(14)] %>% pivot\_longer(cols = c("REASON\_TRANSPLANT", "REASON\_CANCER", "REASON\_RESPIRATORY", "REASON\_ORGAN\_DISEASE", "REASON\_RARE\_DISEASES", "REASON\_IMMUNOSUPPRESSION\_THERAPY",

"REASON\_PREGNANCY", "REASON\_RENAL\_DIALYSIS", "REASON\_OTHER", "REASON\_GP\_REFERRED", "REASON\_NOT\_KNOWN"),

names\_to = "Shield\_Reason") %>% subset(value > 0) %>% group\_by(Shield\_Reason, VARIABLE\_LEVEL) %>% summarise(Total = n())

patient\_reason\_long\_agg <- patients[, c(1, 6:16, 48)] %>% pivot\_longer(cols = c("REASON\_TRANSPLANT", "REASON\_CANCER", "REASON\_RESPIRATORY", "REASON\_ORGAN\_DISEASE", "REASON\_RARE\_DISEASES", "REASON\_IMMUNOSUPPRESSION\_THERAPY",

"REASON\_PREGNANCY", "REASON\_RENAL\_DIALYSIS", "REASON\_OTHER", "REASON\_GP\_REFERRED", "REASON\_NOT\_KNOWN"),

names\_to = "Shield\_Reason") %>% subset(value > 0) %>% group\_by(Shield\_Reason, NUM\_CAT) %>% summarise(Total = n())

patient\_reason\_long\_vw <- patients[, c(1, 6:16, 50)] %>% pivot\_longer(cols = c("REASON\_TRANSPLANT", "REASON\_CANCER", "REASON\_RESPIRATORY", "REASON\_ORGAN\_DISEASE", "REASON\_RARE\_DISEASES", "REASON\_IMMUNOSUPPRESSION\_THERAPY",

"REASON\_PREGNANCY", "REASON\_RENAL\_DIALYSIS", "REASON\_OTHER", "REASON\_GP\_REFERRED", "REASON\_NOT\_KNOWN"),

names\_to = "Shield\_Reason") %>% subset(value > 0) %>% group\_by(Shield\_Reason, VW\_CAT) %>% summarise(Total = n())

```

```{r nulls, echo = F}

nulls <- nulls %>% distinct(ALF\_PE, .keep\_all = T)

nulls\_sex <- nulls %>% group\_by(SEX) %>% summarise(Total = n())

nulls\_sex\_age <- nulls %>% group\_by(SEX, Age\_Group) %>% summarise(Total = n())

nulls\_age <- nulls %>% group\_by(Age\_Group) %>% summarise(Total = n())

nulls\_dep <- nulls %>% group\_by(WIMD\_2014\_QUINTILE) %>% summarise(Total = n())

nulls\_reason <- nulls %>% pivot\_longer(cols = c("TRANSPLANT", "CANCER", "RESPIRATORY", "ORGAN\_DISEASE", "RARE\_DISEASES", "IMMUNOSUPPRESSION\_THERAPY",

"PREGNANCY", "RENAL\_DIALYSIS", "OTHER", "GP\_REFERRED", "NOT\_KNOWN"),

names\_to = "Shield\_Reason") %>% subset(value > 0) %>% group\_by(Shield\_Reason) %>% summarise(Total = n())

```