Quanteda

Susan Kamal for R-ladies meeting 07.06.2018

Background

- PhD in pharmacy- HIV medication adherence.
- Used quanteda in «Word Frequency and Content analysis of Antiretroviral Adherence Enhancing Interview Reports", published in PEC 2018, May.

Background



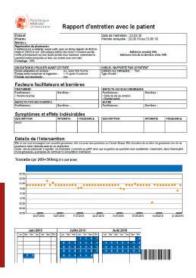
Motivational interviewing patient-pharmacist (MI)

- Face-to-face
- Patient-centered
- Directive & goal-oriented
- Short but repeated



Medication Event Monitoring System (MEMS®)

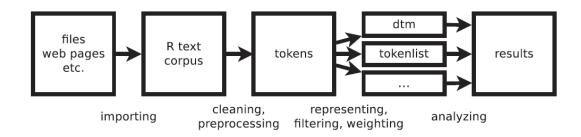
 Objective and dynamic measure of daily medication intake Medication adherence report



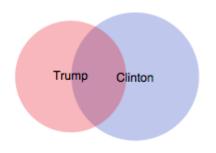
- Data collection and secure record
- Feedback to the patient/physician
- Continuity of care

Krummenacher, Cavassini, Bugnon, Schneider. AIDS Care 2011; 23(5):550-61 Krummenacher, Cavassini, Bugnon, Spirig, Schneider. PWS 2010; 32:776–786 Lelubre, et al. BioMed research international 2015 (2015)

Method



Method Presidential Debate of 2016



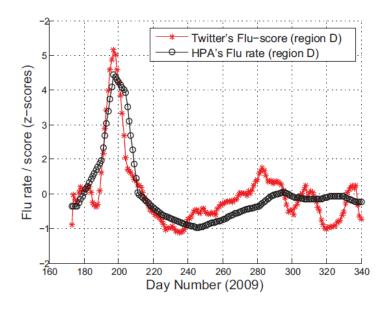
strong_borders
south_korea
free_tradesaudi_arabia
Open_borders
jobs_reportersident_obama
years_ago
united_states
american_flag
make_america
america_great
give_amnesty
trade_deals

```
immigration_reform
nuclear_weapons
national_debtincome_tax
chinese_steel
supreme_court
women's_right*ax_cuts*tax_returns
united_states
donald_thinks
president_obama
border_security
federal_incomerust_fund
health_care
social_security
planned_parenthood
```

Method

Tracking the flu pandemic by monitoring the social web

lung	unwel	temperatur	like	headach	season
unusu	chronic	child	dai	appetit	stai
symptom	spread	diarrhoea	start	muscl	weaken
immun	feel	liver	plenti	antivir	follow
sore	peopl	nation	small	pandem	pregnant
thermomet	bed	loss	heart	mention	condit
high	group	tired	import	risk	carefulli
work	short	stage	page	diseas	recognis
servic	wors	case	similar	term	home
increas	exist	ill	sens	counter	better
cough	vomit	earli	neurolog	catch	onlin
fever	concern	check	drink	long	far
consid	ach	breath	flu	member	kidnei
mild	number	sick	throat	famili	water
read	includ	swine	confirm	need	nose
medic	phone	cancer	disord	unsur	suddenli
runni					



Code

```
library("quanteda") library("magrittr") library("dplyr") library("glmnet") library("ggplot2") library("xtable") runModel <- function(triPatMat, combDf, type, a) { if (type == "logit", 0.01) wordWeights$Positive <- ifelse(wordWeights$estimate > 0, wordWeights$estimate, 0) wordWeights$Negative <- ifelse(wordWeights$estimate < 0, wordWeights$estimate, 0) # some analysis just on the non-text data # context search dv <- select(comb, c(-text)) fullCorpus <- corpus(comb$text, docvars = dv) kwic(fullCorpus, "adhésion selon") wordcloud::comparison.cloud((as.matrix(wct)), title.size = 1.2, random.order = FALSE, rot.per = 0, scale = c(1, 2)) # Extra stopwords here (French default stopword list is already used) extra <- c("apparement", "vrac", "apres", "suivregestion", "mems.je", "sans", "vas", "aucun") thisCondition <- intervisitAll thisCondition$id <- as.factor(thisCondition$id)
```

Results I

Words [within context]** associated with high adherence (>=90%)

"have disappeared " [the side effects...]

"excellent motivation"

"social support"

"mutually" [patient and others support the medication intake mutually]

"very regular hours" [...of treatment intake]

"patient is happy" [...to see good adherence results as shown by EM]

"MEMS* as memory aid"

"women" [female patient discusses her HIV status with other HIV+ women]

"partner"

"husband"

Words [within context] associated with low adherence (<90%)

"DOT" [Pharmacist suggested switching to directly observed therapy]

"TEL" [pharmacist telephoned the treating ID physician]

"cry"

"prepares in advance" [patient...their doses]

"discrete" [patient want to be ...about their HIV status]

"small sachets" [patient keeps their medication in]

"name of ID physician"

"garbage bag" [patient uses a garbage bag to hide their medication]

"homeless" [patient is]

""other appointments" [...with several doctors]

"bitter taste" [of medication]

"baggage" [travel]

"name of psychosocial nurse"

Results II

premiers_jours_{Positive} sait_qu'il_peut d'excellente adhésion.le patient qu'il peut patiente a mentionné bien depuis oraires très réguliers conjoint signalé oubli depuis d'effets cessea disparu l'inclusion okplaît traitemutuellemen plus d'ei venaitrégulière entrefait partei tante suivi a chien chien description de la chien de la chi tante sulvi_a dot témems_selon nez chien eprésentatifeucar_tropavis restant top mems plus_vitepartait complexe domicile fixe dèmerépare_toujour gardiol vide a_surtout servent valise facteurs parlait avoir utilise frères dit être fatigué miracle frèresdit_être_fatiguénems tous plus discretNegative petite soeur