

# **OBJECTIVES**

> To identify health utility decrement (i.e., disutility value) of injection treatment-related attributes that may influence type 2 diabetes mellitus (T2DM) patient preferences in China.

### **METHODS**

- attributes (hypoglycemia, dose frequency, flexibility and ➢ Four
- injection site reaction) were identified in our study. • The estimated coefficients of the models on TTO data are  $\succ$  A representative sample of the Chinese patients with T2DM was presented in Table 2, the random effects model performed better recruited from eight cities, stratified by gender and age group. as measured by the criteria mentioned and was selected for the > Respondents completed seven time trade-off (TTO) tasks during final data analysis for TTO data. All levels of attributes showed face-to-face interviews. significant health utility decrements when compared to the  $\succ$  The ordinary least square (OLS), fixed effects (FE) and random mildest health state (intercept = 0.2084).
- effects (RE) models were used for TTO data.
- $\succ$  In subgroup analysis, subgroups were differentiated based on whether injection treatment was currently used, number medication, needle phobia, duration of injectable treatment ar travel frequency.

### RESULTS

Characteristics	N=400
Gender (n, %)	
Male	211 (52.75%)
Female	189 (47.25%)
Age (mean, SD)	50.30 (12.05)
Age group (years) (n, %)	
18-39	71 (17.75%)
40-59	206 (51.50%)
$\geq 60$	123 (30.75%)
BMI (mean, SD)	24.43 (3.92)
Duration of diabetes (month) (mean, SD)	76.27 (67.68)
Current treatment (n, %)	
Diet control	270 (67.50%)
Oral medication	256 (64.00%)
Injectable medication	285 (71.25%)
Other	3 (0.75%)
EQ-5D-5L utility (mean, SD)	0.923 (0.099)
EQ-VAS (mean, SD)	79.685 (12.23)
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### Table 1 Characteristics of respondents

# ④ 禾 译 メ 省 Health utility decrement of injection treatment-related attributes among type 2 diabetes patients in China

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### **Respondents**

- A total of **400** respondents were included in this study. As shown in Table 1, 52.75% (N = 211) of total respondents were male, the mean (SD) age was **50.30 (12.05)** years.
- Most of the patients were currently receiving injectable treatment (N = 285, 71.25%), with a mean duration of 57.66 months.

## ➤ Main analysis

## Table 2 Estimated coefficients of the fitted model on TTO data

RE model	Coef.	SE
Intercept	0.2084	0.0083
Hypoglycemia (Ref: Non-severe)		
Severe	0.0231	0.0038
Injection site reaction (Ref: Without)		
With	0.0128	0.0032
Dose frequency & flexibility (Ref: Once weekly and not need to be carried for short		
trips)		
Three times daily and need to be carried	0.0229	0.0045
Twice daily and need to be carried	0.0177	0.0044
Once daily and need to be carried	0.0108	0.0047
	RE modelInterceptHypoglycemia (Ref: Non-severe)SevereInjection site reaction (Ref: Without)WithDose frequency & flexibility (Ref: Once weekly and not need to be carried for short trips)Three times daily and need to be carriedTwice daily and need to be carriedOnce daily and need to be carried	RE modelCoef.Intercept0.2084Hypoglycemia (Ref: Non-severe)0.0231Severe0.0231Injection site reaction (Ref: Without)0.0128With0.0128Dose frequency & flexibility (Ref: Once weekly and not need to be carried for short trips)

### > Subgroup analysis

- In subgroup analysis (Fig.1), patients receiving injectable **treatment**, having a **number of medications**  $\geq 2$  and having a shorter duration of injectable treatment preferred to give a greater disutility to level change of dose frequency.
- As for the subgroup of patients with needle phobia, they preferred to give a greater disutility to the mildest health state (Intercept = 0.2153), but attributes were all associated with relatively small disutility values.
- Patients in the **travel group** gave greater disutility values to dose frequency of twice daily and three times daily injections needed to be carried for short trips than patients who barely travel.

Subgroup of injectable treatment 0.2500 0.2110\* 0.2018\* 0.2000 0.1500 0.1000 0.0500 0.0207\* 0.0288\*0.0113\* 0.0166\* Severe vs non-severe hypoglycemia With vs without injection site Non-severe hypoglycemia, without nd not need to be carried ■ With injectable treatment (N=285) Subgroup of numb 0.2500 0.2079\* 0.2089\* 0.2000 0.1500 0.1000 0.0256\* 0.0206\* 0.0500 0.0118\* 0.0137\* 0.0000 Non-severe hypoglycemia, without Severe vs non-severe hypoglycemia With vs without injection site read jection site reaction, once weekly injection and not need to be carried for short trips Number of medication < 2 (N=200)</p> Subgroup of n 0.2500 0.2008\* 0.2000 0.1500 0.1000 0.0500 0.0257\* 0.0209\* 0.0152\* 0.0106\* **P** value 0.0000 Severe vs non-severe hypoglycemia With vs without injection site i injection site reaction, once weekly < 0.001 injection and not need to be carried for short trips Without needle phobia (N=192) < 0.001 Subgroup of duration of 0.2500 0.2077\* 0.2169\* 0.2098\* 0.2000 < 0.001 0.1500 0.1000 0.0500 0.0105\* 0.0249\* 0.0265\* 0.0122\*0.0126\*0.0092\* 0.0000 Severe vs non-severe hypoglycemia With vs without injection site read Non-severe hypoglycemia, without < 0.001 ection site reaction, once weekly njection and not need to be carried for short trips < 0.001 Duration of injectable treatment  $\leq 25$  months (N=100) 25 < Duration of injectable</p> 0.022 Subgroup of tra 0.2500 0.2044\* 0.2099\* 0.2000 0.1500 0.1000 0.0500 0.0302\* 0.0127\* 0.0128\* 0.0000 Severe vs non-severe hypoglycemia With vs without injection site n and not need to be carried for short trip Barely travel (N=11 **Fig.1 Disutility values of subgroup analysis** CONCLUSIONS



0.0246*	0.0187*	0.0156*	0.0227*	0.0123*	0.0065
n Three times dail carried for short tr and not need to be tri	y and need to be ips vs once weekly e carried for short ps	Twice daily and new short trips vs once need to be carried	ed to be carried for e weekly and not ed for short trips	Once daily and nee short trips vs once need to be carrie	d to be carried for e weekly and not d for short trips
Without injectable t	reatment (N=115)				
r of medicati	on				
	0.00504				
0.0185*	0.0272*	0.0166*	0.0187*	0.0050	0.0171*
n Three times dail carried for short tri and not need to be tri	y and need to be ips vs once weekly e carried for short ps ation $\geq 2$ (N=200)	Twice daily and ne short trips vs onc need to be carrie	ed to be carried for e weekly and not ed for short trips	Once daily and nee short trips vs once need to be carrie	d to be carried for e weekly and not d for short trips
edle phobia	ation $\geq 2$ (N=200)				
0.0245*	0.0213*	0.0203*	0.0156*	0.0108	0.0109
n Three times dail carried for short tri and not need to be tri	y and need to be ips vs once weekly e carried for short ps	Twice daily and new short trips vs onco need to be carrie	ed to be carried for e weekly and not ed for short trips	Once daily and nee short trips vs once need to be carrie	d to be carried for e weekly and not d for short trips
injectable tre	eatment				
j.					
0.0285* 0.02	218* 0.0220*	0.0261* 0.01	93*	0.0271*	54 0.0022
n Three times dail carried for short tri and not need to be	y and need to be ips vs once weekly e carried for short	Twice daily and ne short trips vs onc need to be carrie	ed to be carried for e weekly and not	Once daily and nee short trips vs once need to be carrie	d to be carried fo e weekly and not d for short trips
tri atment $\leq 60$ months	(N=91)	Duration of injectab	ole treatment > 60 n	nonths (N=94)	u for short urps
el frequency					
0.0185*	0.0248*	0.0174	0.0176*	0.0164	0.0087
on Three times dail carried for short tr and not need to b tri	y and need to be ips vs once weekly e carried for short ips	Twice daily and ne short trips vs onc need to be carrie	ed to be carried for e weekly and not ed for short trips	Once daily and nee short trips vs once need to be carrie	ed to be carried fo e weekly and not ed for short trips
Travel (N=286)					

> Our study provides disutility values associated with different injection treatment-related attributes for Chinese T2DM patients. Hypoglycemia appears to be the most important attributes, followed by dose frequency and flexibility, injection site reaction. Patient's injection experience also influences disutility values of injection