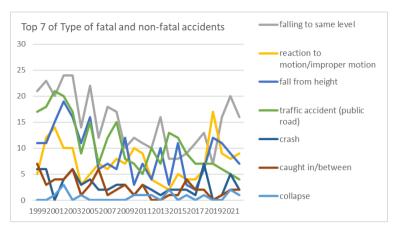
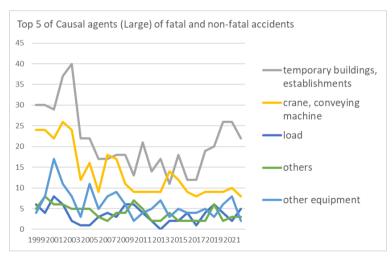
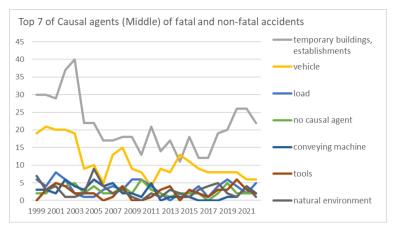
#### Transition of fatal and non-fatal accidents in 011602 city gas service in Japan (1999-2022)



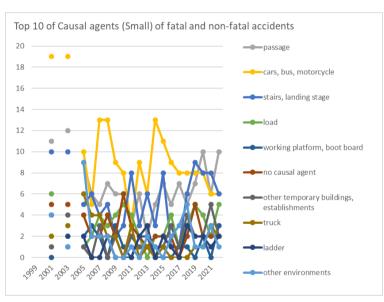
Transition of Top 7 of Type of fatal and non-fatal accidents in 011602 city gas service in Japan (1999-2022)



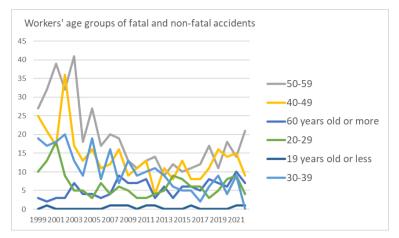
Transition of Top 5 of Causal agents (Large) of fatal and non-fatal accidents in 011602 city gas service in Japan (1999-2022)



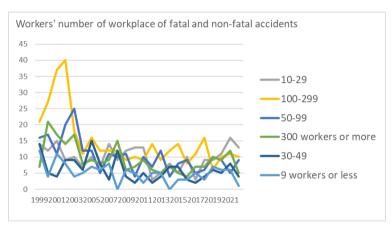
Transition of Top 7 of Causal agents (Middle) of fatal and non-fatal accidents in 011602 city gas service in Japan (1999-2022)



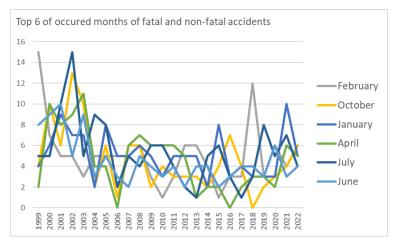
Transition of Top 10 of Causal agents (Small) of fatal and non-fatal accidents in 011602 city gas service in Japan (1999-2022)



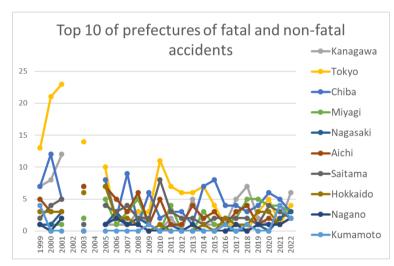
Transition of workers' age groups of fatal and non-fatal accidents in 011602 city gas service in Japan (1999-2022)



Transition of workers' number of workplace of fatal and non-fatal accidents in 011602 city gas service in Japan (1999-2022)



Transition of Top 6 of occured months of fatal and non-fatal accidents in 011602 city gas service in Japan (1999-2022)



Transition of Top 10 of prefectures of fatal and non-fatal accidents in 011602 city gas service in Japan (1999-2022)

## Transition of Type of fatal and non-fatal accidents in 011602 city gas service in Japan (1999-2022)

Type of accidents	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	total	Type of accidents
falling to same level	21	23	20	24	24	14	22	12	18	17	10	12	11	10	16	8	8	9	11	13	7	16	20	16	362	falling to same level
reaction to																										reaction to

motion/improper	5	12	14	10	10	3	5	7	6	8	7	10	9	4	3	2	5	4	4	6	17	9	8	9	177	motion/improper
fall from height	11	11	15	19	16	11	16	6	7	6	12	3	7	4	10	3	11	3	2	6	12	11	9	7	218	fall from height
traffic accident (public	17	18	21	20	17	9	15	7	12	15	8	7	5	10	7	13	12	9	7	7	7	6	5	4	258	traffic accident (public road)
crash	6	6		4	6	3	4	2	2	3	3	1	3	2	1	2	2	2	1	7		1	5	2	68	crash
caught in/between	7	3	4	4	6	1	3	6	1	2	3	1	3			1	1	4	2	2		1	2	2	59	caught in/between
collapse			1	3		1						1	1	1		2		1		1			2	1	15	collapse
others	3	1	2			3							2		1				1					1	14	others
struck by flying or falling object	3	3	5	3	1	2		3	5	2	1	1	4	2		2	2	1		1	1	2			44	struck by flying or falling object
contact to high/low- temperature	1	1	1	4		2	1	1	2	3	2			1	1	3		2	2		2	1	3		33	contact to high/low- temperature
crashed by		3	4	1	1			1	1			2		1	1	1		2	2	1	2	2	3		28	crashed by
cut	4	1	2	1	1		1		3	1	1		1	2		1									19	cut
contact to harmful substance	1	3	1	5			1	1				1	1				1		1						16	contact to harmful substance
explosion	4	1																							5	explosion
fire			3								1											1			5	fire
traffic accident (others)			1	1						1		1								1					5	traffic accident (others)
injury to the sole of																										injury to the sole

the foot	1				1																		1		3	of the foot
unclassifiable			1	1								1													3	unclassifiable
drown													1												1	drown
electric shock							1																		1	electric shock
burst																										burst
total	84	86	95	100	83	49	69	46	57	58	48	41	48	37	40	38	42	37	33	45	48	50	58	42	1,334	total

Transition of Causal agents (Large) of fatal and non-fatal accidents in 011602 city gas service in Japan (1999-2022)

Causal (L) agents	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	total	Causal (L) agents
temporary buildings, establishments	30	30	29	37	40	22	22	17	17	18	18	13	21	14	17	11	18	12	12	19	20	26	26	22	511	temporary buildings, establishments
crane, conveying machine	24	24	22	26	24	12	16	9	18	17	11	9	9	9	9	14	12	9	8	9	9	9	10	8	327	crane, conveying machine
load	6	4	8	6	2	1	1	3	4	3	6	6	4	2		2	2	4	1	4	6	4	2	5	86	load
others	5	8	6	6	5	5	5	3	2	4	4	7	5	2	2	4	2	2	2	2	6	2	3	3	95	others
other equipment	4	8	17	11	8	3	11	5	8	9	6	2	4	5	7	3	5	4	4	5	3	6	8	2	148	other equipment
substance, material	8	6	8	11	1	3	4	3	4		1	1	2	1	2	1	1	1	2		2	2	3	1	68	substance, material
environment	7	3	4	1	1	2	9	4	2	3	1		2	1	3	2	1	3	4	5	2	1	4	1	66	environment
machine		3	1	2	2	1	1	2	2	4	1	3	1	3		1	1	2		1			2		33	machine

Transition of Causal agents (Middle) of fatal and non-fatal accidents in 011602 city gas service in Japan (1999-2022)

											_															1
Causal (M) agents	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022		Causal (M) agents
temporary buildings, establishments	30	30	29	37	40	22	22	17	17	18	18	13	21	14	17	11	18	12	12	19	20	26	26	22	511	temporary buildings, establishments
vehicle	19	21	20	20	19	9	10	5	13	15	9	8	4	9	8	13	11	9	8	8	8	8	6	6	266	vehicle
load	6	4	8	6	2	1	1	3	4	3	6	6	4	2		2	2	4	1	4	6	4	2	5	86	load
no causal agent	2	2	5	4	5	2	4	2	2	4	2	6	3	2	1	2	2	2		2	5	2	2	2	65	no causal agent
conveying machine	3	3	2	6	4	3	6	4	5	2	2	1	5		1	1	1				1	1	4	2	57	conveying machine
tools		3	5	4	2	2	2		1	4			1	3	4		3	2	1	3	3	6	3	2	54	tools
natural environment	7	3	4	1	1	2	9	4	2	3	1		2	1	3	2	1	3	4	5	2	1	4	1	66	natural environment
other causal agent	2	6		2		2	1	1			2	1	2		1	2			2		1		1	1	27	other causal agent
materials	3	1	2	2	1	1	2	1	2				1		2		1				1		1	1	22	materials
hazards, harmful substances	5	5	6	9		2	2	2	2		1	1	1	1		1		1	2		1	2	2			hazards, harmful substances
other equipments,	1	3	6	4	2		2	2	4	3	2		2		2	2	2		3				2		42	other equipments,

																							facilities
human power machine, tools	3	2	4	1	3		4		1		2	1	1	1	1			1	2			27	human power machine, tools
pressure vessel				2	1	1	2	2	2		1	1		1		1		1			3	18	pressure vessel
general machine		2		1	1		1	1		1		1		2		1	1	2	1			15	general machine
construction machine			1		1	1		1		1	1	1									2	9	construction machine
metal manufacturing machine		1		1						1		1										4	metal manufacturing machine
crane	2				1														1			4	crane
kiln, caldron			1							2	1											4	kiln, caldron
woodworking machine									2					1								3	woodworking machine
electric equipment			1				1	1														3	electric equipment
unclassifiable	1		1			1																3	unclassifiable
engine													1									1	engine
power transmission mechanism										1												1	power transmission mechanism
mobile silviculture machine																							mobile silviculture machine

chemical facilities																										chemical
chemical facilities																										facilities
wolding aguipment																										welding
welding equipment																										equipment
total	84	86	95	100	83	49	69	46	57	58	48	41	48	37	40	38	42	37	33	45	48	50	58	42	1,334	total

# Transition of Causal agents (Small) of fatal and non-fatal accidents in 011602 city gas service in Japan (1999-2022)

Causal (S) agents	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	total	Causal (S) agents
passage			11		12		9	6	5	7	6	6	3	6	2	5	7	5	7	5	7	10	6	10	135	passage
cars, bus, motorcycle			19		19		10	5	13	13	9	8	3	9	6	13	11	9	8	8	8	8	6	6	191	cars, bus, motorcycle
stairs, landing stage			10		10		5	6	4	5	2	3	8	3	6	3	8	1	1	6	9	8	8	6	112	stairs, landing stage
load			6		2		1	2	4	3	4	5	4	2		2	2	4	1	3	5	4	2	5	61	load
working platform, boot board					1		2	3	2		3	1		2	2				1	1		2		3	23	working platform, boot board
no causal agent			5		5		4	2	2	4	2	6	3	2	1	2	2	2		2	5	2	2	2	55	no causal agent
other temporary buildings, establishments			1		4		1		3		2		2	1	1	1	1	3	1	4	2	2	5	2	36	other temporary buildings, establishments
truck			2		3		6	4	4	2	2		3		1		1				1	1	3	2	35	truck
ladder			4		2		2			2				2	3		2	1		3	2	2	1	2	28	ladder
other environments			4		1		9	2	2	2			1		2	1		2	3	5	1	1	3	1	40	other environments
other causal agent							1	1			2	1	2		1	2			2		1		1	1	15	other causal agent
roof, beam, haze, crossbeam,					1			1			1											1	1	1	6	roof, beam, haze,

principal rafter																							principal rafter
stone, sand, substance				1	1																1	3	stone, sand, substance
building, establishment		6	9	4	1	2	6	4	2	6	1	5	2	2	3	2	3	2	3	5		68	building, establishment
other equipment,		6	2	2	2	4	3	2		2		2	2	2		3				2		34	other equipment,
human power		4	2	4				1	1	1	1	1			1		2					18	human power hauling equipment
other tools		1				1	1			1	1	1		1	1	1		1	4	2		16	other tools
inflammable gas		4		1	1	1			1		1		1		1	1		1	2	1		16	inflammable gas
other pressure vessels			1	1	2	2		1	1		1		1		1					3		14	other pressure vessels
other general power machines			1	1	1		1		1		2		1	1	1		1					11	other general power machines
machine/equipment		2			1			2	1								1	1				8	machine/equipment
opening		1	2	1						1		1								1		7	opening
metal material		2	1			1						1						1		1		7	metal material
high/cold temperature environment					1		1	1					1		1	1		1					high/cold temperature environment
excavating machine		1	1					1	1											2		6	excavating machine
other vehicles		1					2			1		2										6	other vehicles
conveyor			1						1	2										1		5	conveyor

	 !		-	-	 -				-	-		-		=	<u></u>	 		 	-	 	
other hazards,							1		1		1					1			1	5	other hazards,
harmful substances				<u></u>						<u></u>											harmful substances
kiln, caldron		1						2	1											4	kiln, caldron
scaffolding							1			1	1	1								4	scaffolding
natural ground,						1						1	1						1	4	natural ground,
rock																					rock
circular sawing							2					1								3	circular sawing
machine												<u>                                     </u>									machine
hand tool				1			1		1											3	hand tool
harmful substance		1			1	1														3	harmful substance
lumber, bamboo							1				1		1							3	lumber, bamboo
crane				1													1			2	crane
transmission		1				1														2	transmission
other materials					1										1					2	other materials
engine											1									1	engine
power transmission								1												1	power transmission
mechanism								I												I	mechanism
leveling,																					leveling,
transporting or						1														1	transporting or
loading machine																					loading machine
demolition machine								1												1	demolition machine
grinding machine,										1										1	grinding machine,
buffing machine										Ĺ											buffing machine
other metal																					other metal
										1											

manufacturing						1										1	manufacturing
machines																	machines
roll machine (except																	roll machine (except
printingroll												1				1	printingroll
machine)																	machine)
loader					1											1	loader
other powered										1						1	other powered
conveying machines										•						<u> </u>	conveying machines
pressure vessel				1												1	pressure vessel
electric power				1												1	electric power
facilities				•													facilities
slinging tool						1										1	slinging tool
timbering			1													1	timbering
explosive substance		1														1	explosive substance
water								1								1	water
abnormal											1					1	abnormal
environment											ı					ľ	environment
unclassifiable		1														1	unclassifiable
band sawing																	band sawing
machine																	machine
wood planer																	wood planer
machine																	machine
hollow chisel																	hollow chisel
mortiser, wood																	mortiser, wood
borer																	borer

chamfering													chamfering
machine, router,													machine, router,
woodworking													woodworking
milling machine													milling machine
chain saw													chain saw
other woodworking													other woodworking
machines													machines
foundation work													foundation work
machine													machine
hardening machine													hardening machine
vehicle for high lift													vehicle for high lift
work													work
other construction													other construction
machines													machines
lathe													lathe
drill press, milling													drill press, milling
machine													machine
power press													power press
forging pressure													forging pressure
hammer													hammer
shearing machine													shearing machine
centrifugal machine													centrifugal machine
mixer, grinder													mixer, grinder
injection molding													injection molding
machine													machine

food manufacturing													food manufacturing
printing machine													printing machine
industrial robot													industrial robot
felling machine													felling machine
mobile logging													mobile logging
skyline yarding machine													skyline yarding machine
other mobile silviculture machine													other mobile silviculture machine
mobile crane													mobile crane
derrick crane													derrick crane
elevator, lift													elevator, lift
cargo lifting appliance													cargo lifting appliance
gondola													gondola
lumberyard equipment, logging cableway													lumberyard equipment, logging cableway
simple skyline yarding equipment													simple skyline yarding equipment
other powered crane													other powered crane
forklift													forklift

railway equipment													railway equi	pment
straddle carrier													straddle carr	rier
rough terrain hauler													rough terrain	n hauler
railway vehicle													railway vehic	cle
boiler													boiler	
chemical facilities													chemical faci	ilities
gas welding equipment													gas welding equipment	
arc welding equipment													arc welding equipment	
other welding equipment													other weldin	ng
industrial dryer													industrial dry	yer
other kiln, caldron													other kiln, ca	aldron
other electrical equipment													other electric	cal
human power cranes													human powe	er
human power													human powe	er
inflammable substance													inflammable substance	•
radiation													radiation	
standing tree													standing tree	e

total   84   86   95   100   83   49   69   46   57   58   48   41   48   37   40   38   42   37   33   45   48   50   58   42   1,334 total
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Transition of workers' age groups of fatal and non-fatal accidents in 011602 city gas service in Japan (1999-2022)

Age	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	total	Age
50-59	27	32	39	32	41	18	27	17	20	19	13	11	13	14	9	12	10	11	12	17	11	18	14	21	458	50-59
40-49	25	21	17	36	17	13	16	11	12	16	9	11	13	4	11	8	13	8	8	11	16	14	15	9	334	40-49
60 years old or more	3	2	3	3	7	4	4	3	4	9	7	7	8	3	6	3	6	6	5	8	7	6	10	7	131	60 years old or more
20-29	10	13	18	9	5	5	3	7	4	6	5	3	3	4	5	9	8	6	6	3	5	8	9	4	158	20-29
19 years old or less		1							1	1	1		1	1				1					1	1	9	19 years old or less
30-39	19	17	18	20	13	9	19	8	16	7	13	9	10	11	9	6	5	5	2	6	9	4	9		244	30-39
total	84	86	95	100	83	49	69	46	57	58	48	41	48	37	40	38	42	37	33	45	48	50	58	42	1,334	total

Transition of workers' number of workplace of fatal and non-fatal accidents in 011602 city gas service in Japan (1999-2022)

Workers scale	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	total	Workers scale
10-29	14	12	15	9	10	7	10	7	14	9	12	13	13	3	5	8	5	10	3	9	9	11	16	13	237	10-29
100-299	21	27	37	40	18	11	16	12	12	12	9	10	9	14	9	12	14	8	11	16	6	10	11	10	355	100-299
50-99	16	17	11	20	25	12	12	5	11	10	11	4	10	7	12	4	8	9	5	6	10	9	5	9	248	50-99
300 workers or more	7	21	17	14	17	8	9	8	9	15	6	7	9	6	5	7	5	4	7	7	10	9	12	5	224	300 workers or more
30-49	14	5	4	9	9	6	15	8	3	12	4	2	5	2	4	7	7	3	2	4	6	5	8	4	148	30-49
9 workers or less	12	4	11	8	4	5	7	6	8		6	5	2	5	5		3	3	5	3	7	6	6	1	122	9 workers or less
total	84	86	95	100	83	49	69	46	57	58	48	41	48	37	40	38	42	37	33	45	48	50	58	42	1,334	total

## Transition of occured months of fatal and non-fatal accidents in 011602 city gas service in Japan (1999-2022)

Month	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	total	Month
February	15	7	5	5	3	5	5	5	5	6	3	1	3	6	6	4	1	3	3	12	3	6	4	6	122	February
October	4	10	6	13	10	2	6	1	6	6	2	4	3	3	3	2	4	7	4		2	3	4	6	111	October
January	4	6	9	7	7	2	8	5	5	6	5	3	5	5	5	2	8	3	4	3	3	3	10	5	123	January
April	2	10	8	9	11	4	4		6	7	6	6	6	5	1	2	2		2	3	3	2	6	5	110	April
July	5	5	10	15	5	9	8	2	5	4	6	6	4	2	1	5	6	3	1	3	8	5	7	4	129	July
June	8	9	10	5	9	3	5	3	2	5	4	3	4	2	4	4	2	3	4	4	3	6	3	4	109	June
March	7	6	14	7	9	3	6	5	6	2	4	3	5	6	2	7	4	4	2	3	9	3	4	3	124	March
December	8	13	4	5	4	5	10	8	4	7	3	3	4	1	6	4	3	4	3	4	1	5	7	3	119	December
September	13	6	7	8	8	5	4	4	2	3	4	4	7	3	3	1	2		1	5	5	8	2	2	107	September
August	10	3	9	6	3	4	5	2	5	3	3			1	2	2	9	3	3	2	5	3	1	2	86	August
May	6	4	7	9	10	2	6	8	6	8	3	3	3	1	4	3	1	4	2		2	4	5	1	102	May
November	2	7	6	11	4	5	2	3	5	1	5	5	4	2	3	2		3	4	6	4	2	5	1	92	November
total	84	86	95	100	83	49	69	46	57	58	48	41	48	37	40	38	42	37	33	45	48	50	58	42	1,334	total

## Transition of prefectures of fatal and non-fatal accidents in 011602 city gas service in Japan (1999-2022)

Prefecture	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	total	Prefecture
Kanagawa	7	8	12		2		1	1	1	3	1		2		5	1	1	1	5	7	2	1	1	6	68	Kanagawa
Tokyo	13	21	23		14		10	1	3	3	3	11	7	6	6	7	4	1	1		3	5	1	4	147	Tokyo
Chiba	7	12	5		7		8	2	9	1	6	2	3	3	1	7	8	4	4	3	4	6	5	3	110	Chiba
Miyagi	1	1	1		2		5	1	3	5	1		4			3	1	1	2	5	5	4	4	3	52	Miyagi
Nagasaki	1	1	3				1	3	1	2	1		1			1					1		2	3	21	Nagasaki
Aichi	5	3	3		7		7	5	3	6	1	5	1	1	4	2	3	1	3	4	1	2	1	2	70	Aichi

Saitama	2	4	5	1	4	4	3	4	2	2	8	3	2	2	1	2	2	2	2	1	4	3	2	61	Saitama
Hokkaido	3	3	3	6	7	7	2	2	1		1				1		2	1	1	3	3	1	2	42	Hokkaido
Nagano	1		2		1	1	2	1	1					1				1		1	1	1	2	15	Nagano
Kumamoto	4									1							1		1			4	2	13	Kumamoto
Fukuoka	2	3	3	8	4	4	4	5	6	5	3	4	2	3	1	2	5	3	5	5	3	7	1	84	Fukuoka
Shizuoka	4	1	7	3	4	4	1	5	4	3		2	1		1	4	3		4	1	1		1	50	Shizuoka
Kagoshima	1		4	1	1	1	1	1	1	1	1	2	1	3	2	4	1			1		1	1	28	Kagoshima
Gunma	1		2	1			2	1		1	1		3		1	1	1	1			1	1	1	19	Gunma
Oita					1	1					3	3	4			1				2	1		1	16	Oita
Tochigi			2									1	1	2	1			2			1	4	1	15	Tochigi
Saga			2	1	1	1		2						2	1					1	1		1	12	Saga
Kyoto	2	1	1	2												1	1			1	1		1	11	Kyoto
Yamagata	5								1	1		1	1										1	10	Yamagata
Kochi	1			1	1	1									1	1				2		1	1	9	Kochi
lwate				1				1		1			1						1	1			1	7	lwate
Tottori		1		1			1											1					1	5	Tottori
Akita										1		1											1	3	Akita
Osaka	3	12	4	7	1	1	2	4	4	4	2	5	3	1		2	1	2	4	3		3		67	Osaka
Hiroshima	1	3	2	1	2	2	4	3	3	1	1			3	2	1	1		2	1	2	3		36	Hiroshima
Hyogo	5	1	2	5	2	2	3	3	1				1	1		1	2			2	4	1		34	Hyogo
Gifu	2	5	2	2					2	2							1		1	2	1	2		22	Gifu
Ibaraki	1		1	1			1	2	2			3		2	1		1			1	1			17	Ibaraki
Mie	1	2	1				2		1	3			1		1			2	1		2			17	Mie

Fukushima			1		2			1		2		1	2	4				2					1		16	Fukushima
Nara	1	1							1	1	2			1	1	1	2		2				1		14	Nara
Niigata	1										2	1			1	1	2	1	1			1	1		12	Niigata
Okayama			1		2					3						1	1			1		1	2		12	Okayama
Aomori	2	1			1		1						1		2			1		1		1			11	Aomori
Shiga					1		3	1					1					1				1	1		9	Shiga
Yamaguchi					1		4				1	1	1					1							9	Yamaguchi
Ishikawa	1										1									1	2		3		8	Ishikawa
Toyama			1		1			1			1												2		6	Toyama
Ehime	2				1					1				1				1							6	Ehime
Fukui	2							1			1														4	Fukui
Miyazaki	1		1					1															1		4	Miyazaki
Yamanashi			1																	1	1				3	Yamanashi
Tokushima										1											1	1			3	Tokushima
Kagawa		1								1	1														3	Kagawa
Okinawa	1								2																3	Okinawa
Wakayama		1																							1	Wakayama
Shimane																										Shimane
total	84	86	95	100	83	49	69	46	57	58	48	41	48	37	40	38	42	37	33	45	48	50	58	42	1,334	total

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